PLANNING COMMISSION
Meeting Agenda (Revised)
Monday, September 10, 2018
7:00 PM
City Council Chambers – 222 NE 2nd Avenue

Commissioner John Savory (Chair)

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

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1. CALL TO ORDER

a. Invocation and Pledge of Allegiance

2. CITIZEN INPUT ON NON-AGENDA ITEMS

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

3. MINUTES

a. Approval of Planning Commission Minutes for August 13, 2018 and August 23, 2018

4. NEW BUSINESS - None

5. PUBLIC HEARING

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

a. Consider a request from Butch Busse for a Zone Map Amendment of 2.59 acres located at 1300 S Ivy Street for a zone change from (R-1) Low Density Residential to C-R Residential/Commercial. **(ZC 18-04).**

b. Consider a request from Butch Busse for a Site & Design Review, Conditional Use Permit, Planned Unit Development and Subdivision to develop a 2.59 acre site located at 1300 S Ivy Street with 38 townhomes (single-family dwellings with common-wall construction) at the corner of SE 13th Avenue and S Ivy Street. **(DR 18-03/CUP 18-03/PUD 18-01/SUB 18-02 Canby Townhomes)**.

c. Consider a request from Frank and Kathleen Cutsforth for an Annexation and Zone Map Amendment to annex three parcels totaling 9.55 acres including the adjacent N Territorial right-of way located in the northeast portion of the City's Urban Growth Boundary off NE Territorial Rd and rezone the property from Clackamas County's Rural Residential Farm Forest-5 to the City's Low Density Residential Zone. **(ANN 18-02/ZC 18-02 Cutsforth)**.

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

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

a. **ANN 18-02.ZC 18-02 Cutsforth**

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

a. Next regularly scheduled Planning Commission meeting – Monday, September 24, 2018

- N Pine Annexation & Zone Change; Pine Place Subdivision, and Conditional Use for Marquis Memory Care at Hope Village

8. ITEMS OF INTEREST/GUIDANCE FROM PLANNING COMMISSION

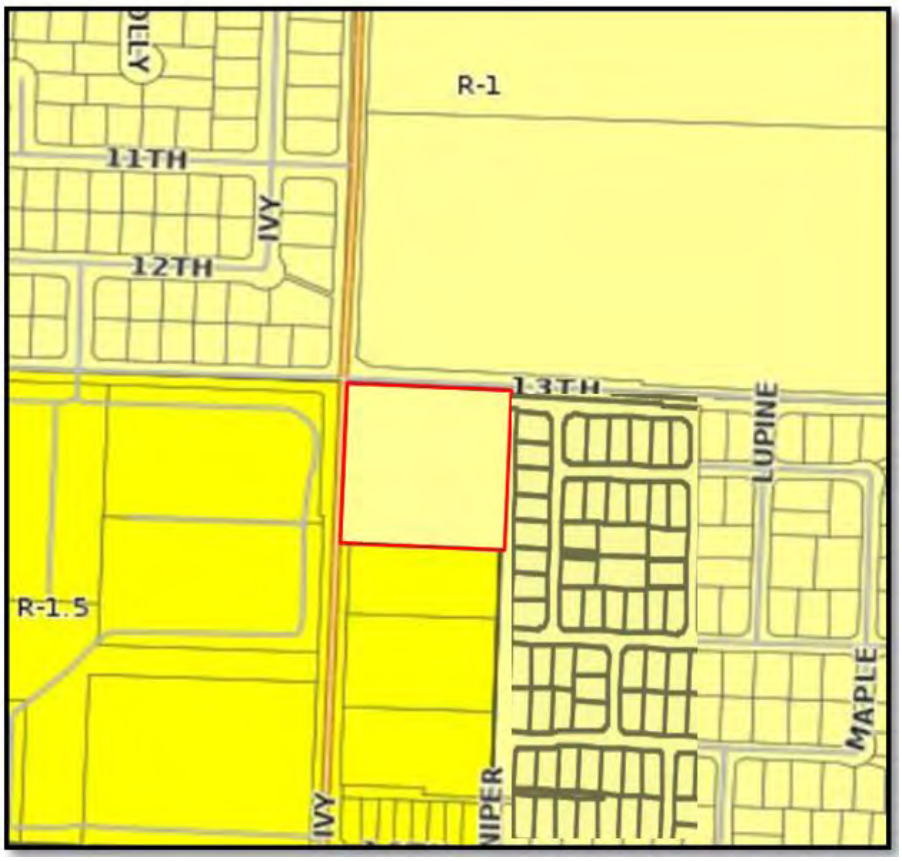
9. ADJOURNMENT

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

ZONE CHANGE STAFF REPORT
FILE #: ZC 18-04
Busse – R-1 to CR Zone
Prepared for the September 10, 2018 Planning Commission Meeting

LOCATION: 1300 S. Ivy Street
TAX LOT: 41E04DA04800 (Bordered in map below)
LOT SIZE: 2.59 acres
ZONING: **Existing-R-1 Low Density Residential; Proposed-C-R Residential-Commercial**
OWNER: Willamette Capital Investments, LLC



APPLICANT: Butch Busse
APPLICATION TYPE: Map Amendment (Rezoning) (Type III)
CITY FILE NUMBER: ZC 18-04

I. PROJECT OVERVIEW & EXISTING CONDITIONS

The proposed zone change is for a mostly underutilized site consisting of a 2.59 acre tract at 1300 S Ivy Street. The applicant for this rezone has concurrent development application(s) for approval of the Canby Townhome project for the same property for which approval of the proposed zone change application is a prerequisite to allow the development project. This application is to change the current zoning of this property from R-1-Low Density Residential to the C-R Residential Commercial zone district to allow the applicant's planned use of the property. The applicant has a contract with the current property owner to purchase this property subject to obtaining the necessary land use entitlements. The subject property contains an existing home in the southwest corner of the lot and barn type storage structure further north on the property.

The property is located within the Canby city limits, and is designated as appropriate for CR Residential Commercial zone in the text of the adopted and acknowledged Canby Comprehensive Plan and on the associated Land Use Plan Map. A Comprehensive Plan Amendment adopted by Ordinance No. 1120 in 2003 provides the primary guidance and basis for a finding and conclusion of law that the rezoning of this property to CR zone can be considered "to be in conformance with the Comprehensive Plan" and therefore a suitable request for the subject property.

The context of surrounding zoning and uses is also an important factor in deciding the suitability of a proposed rezoning. The zoning of the surrounding properties and the use on them have not changed since the 2003 Comprehensive Plan amendment establishing the appropriateness of the CR zone except for the actual construction of adjacent single-family homes in Dinsmore Estates subdivision located directly adjacent to the east of the proposed rezoning. The senior center, swim center, and elementary school is located to the north across SE 13th Avenue with the R-1 zone, Dinsmore Estates subdivision to the east with R-1, older large lot residential use to the south with R 1.5 Medium Density Residential zone and R 1.5 zone for the entire Hope Village Campus in the block across S Ivy Street to the west.

The City of Canby Comprehensive Plan amendment adopted in 2003 envisioned the ultimate best use of this underutilized property at the intersection of two busy arterial streets to be suitable for higher density residential uses, office use, light neighborhood oriented commercial service uses – such as a small day care center, church, senior center, assisted living center, personal service retail uses like a bakery, barber, hobby and crafts shop or various arts studios or a mixture of both residential and the limited service commercial uses identified by the CR zone district. The suitability of any of the uses listed in the CR zone was considered in 2003 when the Comprehensive Plan Text Amendment was considered and adopted and should be considered again at this time with this request to rezone to the CR district.

It is relevant to consider that the Comprehensive Plan and land use plan map are important tools to help the City of Canby identify on a community wide basis and on a more localized neighborhood basis how to best meet the needs of a diversified population when considering how the provision for a wide variety of types and affordability of housing choices and opportunities for new commercial and industrial business locations to serve both our

neighborhoods and the community. Looking at the community as a whole and designating the suitability of various land uses on the Comprehensive Plan Map is paramount to make sure areas are identified that will help the City meet the variety of zone districts and resulting allowed uses that help meet the needs within the community.

A look at the Comprehensive Plan text amendment performed in 2003 reveals that it was initiated as a part of the State Mandated Periodic Review process. In order to meet State land use goal requirements, every City in Oregon is required to adopt a Comprehensive Plan which has been reviewed by the State Department of Land Conservation and Development (DLCD) for conformance with land use goals. A common thread in Canby's past periodic review processes has been the identification of suitable locations and willing property owners for designating areas suitable for a higher residential density than the low density residential R-1 zone which historically has been in much greater supply than the R 1.5 or R-2 zones. In addition, the establishment of the CR zone appears to have been an attempt to provide areas suitable for limited commercial uses that could directly serve and benefit a localized neighborhood area and/or areas that could accommodate higher density residential use or a combination of both residential and commercial uses. The 2003 Comprehensive Plan text amendment adopted sought out areas suitable for the CR zone with willing property owners at the time to help satisfy the overall State mandated land use planning process to find suitable areas to meet nearby neighborhood commercial and/or alternative housing type needs which was in short supply.

The Land Development and Zoning Ordinance indicates that outright permitted residential uses in the proposed CR zone are to be built and conform to the R 1.5 district development standards, while uses permitted conditionally are to be built to the R-2 district development standards. The applicant's planned use of the property if rezoned to the CR zone is for single-family dwellings having common wall construction which is an outright permitted use in the R 1.5 zone but a conditionally allowed use in the CR zone. Lot size for single-family common wall use in the R 1.5 zone is a minimum 3,000 square feet with minimum 40 feet lot width and street frontage and when allowed by conditional use permit within the CR zone there is no minimum lot size but rather a minimum 14 dwelling unit per acre standard with a 20' minimum lot width and street frontage standard. Commercial uses that would be allowed in the CR district have a minimum lot area of 7,000 square feet.

II. ATTACHMENTS

- **A.** Signed Application Form
- **B.** Applicant Written Narrative
- **C.** Assessor's Map and Aerial Photo
- **D.** Comprehensive Plan Pages 60-67
- **E.** Ordinance No. 1123
- **F.** City Maps: Comprehensive Plan Map-2014, Zoning Map Jan. 2014 Originally Relied On By Applicant, City Corrected Zoning Map Aug. 2018
- **G.** Agency/Citizen Comments

III. APPLICABLE REVIEW CRITERIA & FINDINGS

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

- 16.24 C-R Residential/Commercial Zone
- 16.54 Amendments to Zoning Map
- 16.89 Application and Review Procedures

City of Canby Comprehensive Plan Policies and Implementation Measures

Chapter 16.54 Amendments to the Zoning Map Analysis

16.54.010 & 0.20 & 0.30 Amendments to the Zoning Map

16.54.010 – Authorization to initiate amendments:
16.54.020 – Application and Fee:
16.54.030 – Public Hearing on Amendment:

Findings: The property owner has authorized initiation of the proposed map amendment by signing an application form. This criterion has been met.
The map amendment application and associated fee required were received from the applicant. This criterion has been met.
Public Hearing 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 property is identified as being in Area "K" as an "Area of Special Concern" that is stated in Policy 6 of the Comprehensive Plan on page 60 and shown on the "Area of Special Concern" map on page 67 of the Plan. Area "K" pertains to the subject property of this rezoning request. The text within the Plan indicates "because of its proximity to Hope Village, schools, and residential neighborhoods, this parcel was identified as a good area for some sort of convenience or residential commercial"... A zone change would be required from R-1 upon redevelopment of the property". City planning staff researched the official City records and found that Ordinance No. 1123 that adopted the new Area of Special Concern "K" did not change the zoning of the property from the then existing R-1 designation and that no other subsequent request to rezone the property had been approved. Therefore, the zoning of the property is currently R-1 Low Density Residential and we are now processing a rezoning by the applicant with the consent of the owner of the property to secure the C-R zone as indicated to be suitable for this property by the provisions of the adopted Comprehensive Plan text amendment that created Special Area of Concern "K". The Plan text further states "A placeholder designation of Residential/Commercial (R-C) has been placed on the parcel because it offers the property owner more options at this time". Staff has concluded that the Canby Comprehensive Plan Map was suitably changed at the time of the adoption of Ordinance

No. 1123 to reflect a land use designation of R-C. The requested zone for the property is consistent with the zone designation on the Comprehensive Plan Map and with the text describing the Special Area of Concern "K". After a review of the Comprehensive Plan and the applicant's narrative, staff concludes that the request meets provisions in Policy 6 and the applicable goals and policies listed in 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: No problems or issues in the City's ability to provide adequate utility services to serve allowed uses within the proposed zone have been identified and the extension of utility services to serve the proposed use of the property as identified in a separate concurrent development application have not been raised by City service providers that would prevent adequate services at the time of development. There is no evidence that future development of the property for any of the allowed uses within the R-C zone or for the proposed use could not meet standards for adequate public facilities.

Chapter 16.08 General Provisions

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. A traffic study has been performed with the separate concurrent development applications. In addition, the proposed zone and its resulting level of traffic when redeveloped with permitted uses within the C-R zone were accounted for within the adopted TSP. This review criterion has been met.

Chapter 16.24 C-R Residential/Commercial Zone

The subject property is proposed to be rezoned to the C-R zone as indicated in "Special Area of Concern "K" within the Comprehensive Plan.

Findings: After receiving zone change approval, the property shall meet all development criteria and standards of the C-R zone including the allowed uses. In order to develop the parcel the applicant has concurrently filed applicable development applications for approval as required by the C-R zone. Approval of the concurrent development applications shall be conditioned on approval of the requested C-R zone as the proposed use is not otherwise allowed in the existing R-1 district.

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: Amendments to the Zoning Map, or "Zone Changes", 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 decision for a Map Amendment is documented by the Council through approval of an Ordinance. The notice requirements are the same as for Type III applications.

Notice of this application and the Planning Commission and Council Hearing dates was made to surrounding property owners at least 20-days prior to the hearing(s) on August 20, 2018. A neighborhood meeting for this zone change application was not held since a previous one was held for the concurrent development applications. The site was posted with a Public Hearing Notice sign in July, 2018. A new notice meeting ordinance requirements of the public hearings was published in the Canby Herald on September 5, 2018. These findings indicate that all processing requirements have been satisfied with this application to date.

Public Testimony Received

Notice of this application and opportunity to provide comment was mailed to owners of lots within 500 feet of the subject properties, including all residents of Hope Village, to all applicable public agencies and City departments on August 20, 2018. Comments are summarized below while the actual comments received are attached to this report. As of the date of this Staff Report, the following comments were received by City of Canby from the following persons/agencies:

Persons/Agency/City Department Comments.

Comments were received from the following persons/agencies/city departments:

- Rick Brown, 1395 S Larch Street. In opposition to the requested zone change by indicating this area is not designed or suitable for possible commercial uses that could

be allowed. The additional traffic from the proposed use would greatly impact all the surrounding uses.

- Micke A Paul, 1315 S Larch Street (Lot 63). In opposition to the requested zone change with concern for compatibility of housing types, neighboring 2-story homes looking down into windows and backyard, and not expected use in the neighborhood, no place to park in the private street, and need for two full service entry's.
- Craig & Barb Carpenter, 325 SE 13th Place. In opposition to the zone change as it has always been R-1 zoning and that is what is should remain to be consistent with the surrounding area, the rezone would increase the amount of traffic, inadequate parking planned, dangerous to school children in the area due to traffic, not proper turnaround for emergency providers, and mistaken statement that 3 story structures would imposed (they are only 2-story) that would infringe on privacy of existing residences on Larch Street.

Conclusion Regarding Consistency with the Standards of the Canby Municipal Code

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

1. The application and proposed rezoning 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. The requested zoning of the property to C-R Residential/Commercial, as indicated in the application and pursuant to the approval criteria set forth for map amendments in CMC Section16.54.040; have been satisfactorily met.
3. There are sufficient public and private agency utility and service capacity to serve the site for the uses that would be allowed in the C-R zone.

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. ZC 18-04 be approved and,
2. The zoning of the subject property be designated as C-R Commercial-Residential as indicated by 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

Zone Map Change Application

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

☐ Applicant Name: Butch Busse Phone: 503-572-6442
Address: P.O. Box 2375 Email: butchb@hrhomes.net
City/State: Clackamas, Oregon Zip: 97015

■ Representative Name: Brandie Dalton, Planner Phone: 503-363-9227
Address: 1155 13th Street SE Email: bdalton@mtengineering.net
City/State: Salem, Oregon Zip: 97302

☐ Property Owner Name(s)*: Willamette Capital Invest. Phone: 503-407-8957

Signature: Pat Hanlin 8/3/2018 | 10:32 AM PDT 8/3/2018 | 10:43 AM PDT
Address: Email:
City/State: Zip:

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:

1300 S. Ivy Street	2.59 Acres	41E04DA/TL 4800
Street Address or Location of Subject Property	Total Size of Property	Assessor Tax Lot Numbers
Vacant	R-1	Residential-Commercial
Existing Use, Structures, Other Improvements on Site	Zoning	Comp Plan Designation

Zone Change from R-1 to C-R
Brief description of proposed development or use

See Attached Narrative

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

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

Canby
Zone Change

SITE:

The subject property is located at 1300 S Ivy Street (41E04DA/Tax Lot 4800). The subject property is about 2.59 acres in size and is zoned R-1 with a Residential/Commercial (RC) Comprehensive Plan designation.

PROPOSAL:

The applicant is proposing to rezone the subject property from R-1 to C-R. This zone designation will be consistent with the Residential/Commercial (RC) Comprehensive Plan designation.

VICINITY INFORMATION:

There is an existing single-family dwelling and shed on the time that will be removed prior to development. The surrounding properties are fully developed.

North: R-1 zone; Across 13th Avenue, an existing adult center
East: R-1 zone; Existing single-family dwellings
South: R-1.5 zone; Existing single-family dwellings
West: R-1.5 zone; Across Ivy Street, existing attached single-family dwellings

ZONE CHANGE CRITIERIA 16.54.040:

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;

The proposed development is consistent with the policies of the comprehensive plan. The applicable Policies of the Comprehensive Plan are addressed as follows:

The intent of the comprehensive plan is to project the goal of the most desirable pattern of land use in the area taking into account various factors such as the transportation system, location of public facilities, and the needs of the people which are important to the creation and maintenance of a healthful and pleasing urban environment. To ensure that the anticipated urban land use needs are met, the Plan map demonstrates a commitment that land for a wide variety of uses will be available at appropriate locations as needed.

Citizen Involvement Policies 1 and 2:

The City's adopted Comprehensive Plan Goals and Policies, and its adopted zone code, implement the Statewide Citizen Involvement Goal. This application will be reviewed according to the public review process established by the City of Canby. The City's Plan is acknowledged to be in compliance with this Policy. Notice of the proposal will be provided to property owners and public agencies. The notice will identify the applicable criteria. A public hearing to consider the request will be held. Through the notification and public hearing process all interested parties are afforded the opportunity to review the application, comment on the proposal, attend the public hearing, and participate in the decision.

These procedures meet the requirements of the policies for citizen involvement in the land use planning process.

Environmental Policies 1-R-B, 3-R, 4-R, 8-R:

The City's adopted Comprehensive Plan, Scenic and Historic Areas, Natural Resources and Hazards, Commercial, Industrial and Transportation Goals and Policies along with adopted facilities plans implement this Policy.

Development is required to meet applicable State and Federal requirements for air and water quality. The proposal to develop the site is reviewed by the City and any applicable outside agencies for impacts on environment and compliance to applicable standards and regulations. Development is required to meet applicable water, sewer, and storm drainage system requirements. Upon development, the City is responsible for assuring that wastewater discharges are treated to meet the applicable standards for environmental quality. Prior to development, the applicant will obtain all required State, Federal, and local permits.

The City has identified the process through which water; sewer and storm drainage will be supplied to the site as stated in previous meetings with the applicant.

The major impact to air quality in the vicinity is vehicle traffic along the boundary streets. The traffic generated from the site will be minor compared to the total volume of traffic in this area,

and will not create a significant additional air quality impact. At this time, a Traffic Impact Analysis is not required for this level of development.

The proposed development will have no significant impact on the quality of the land. Considering the location of the site within the city, the availability of public facilities to provide water, sewage disposal and storm drainage services, and the surrounding transportation system, the proposal will have no significant impacts to the quality of the air, water or land. The City's adopted facility plans implement Goal 6.

The City's adopted Comprehensive Plan Open Space Policies implements the Statewide Recreation Needs Goal by encouraging conservation and identification of existing and needed park resources and funding mechanisms. The subject property will be developed as a PUD which will be required to provide on-site open space areas. These areas will provide recreational areas for the residents. At the time of development, the proposal will provide improved public pedestrian connections via hard-surfaced sidewalks the will connect to the existing pedestrian circulation.

Therefore, the proposal complies with these policies.

Transportation Policies 1, 2, 3, 4, 6:

The City's adopted Comprehensive Plan Transportation Goals and Policies implements the Statewide Transportation Goal by encouraging a safe, convenient and economic transportation system. The subject property is located along Ivy Street and 13th Street. The major streets are in place due to previous development. The County will be notified of the proposal and will provide comments regarding any county roads effected by this proposal.

All improvements will be made as required by Code and any Conditions of Approval.

> ***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.***

Under Policy No. 6, the subject property is identified as an "Area of Special Concern" and identified as Area "K" on page 60 of the Canby Comprehensive Plan.

> ***Area "K" is approximately 2.5 acres in size and is currently inside City Limits with a zoning of R-1. The parcel is located on the southeast corner of SE 13th Avenue and S. Ivy Street and is currently being operated as a commercial nursery (a grandfathered use from before it was annexed). Because of its proximity to Hope Village, schools, and residential neighborhoods, this parcel was identified as a good area for some sort of convenience or residential commercial. Because of the different allowed uses in each zone, it is difficult to determine which designation would be most appropriate. Many meeting participants felt that a convenience store (allowed outright in the Convenience Commercial (CC) zone but not at all in the Residential Commercial (CR) zone) might be appropriate but it is unclear as to whether a service station (also allowed outright in the CC zone) is equally as compatible with surrounding uses. A placeholder designation of Residential Commercial (RC) has been placed on the parcel because it offers the property owner more options at this time, but the City may wish to consider a text***

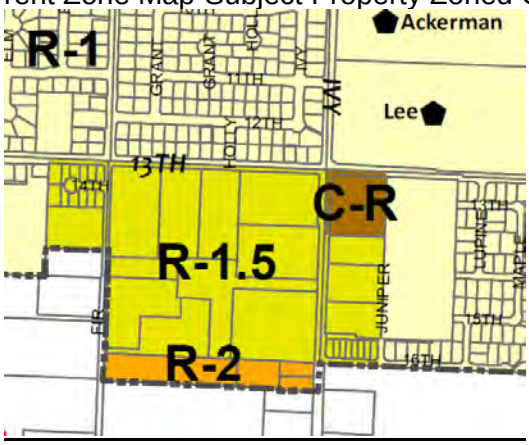
amendment to change the allowed or conditional uses in either zone to provide for a well-designed convenience store at this location. A zone change would be required from R-1 upon redevelopment of the property.

This property is currently zoned R-1 with a Residential Commercial (RC) comprehensive zone designation. As stated above, the RC Comprehensive plan designation is a place holder for the C-R zone which would allow the owner a wider range of developer options than the current R-1 zone.

After doing research (online adopted zone maps and pre-application notes) on the site and speaking with City staff the applicant was informed that the subject property was zoned C-R. Several months later the applicant was informed that staff had made a mistake and an error existed on the current adopted zone map. Staff then informed the applicant that the subject property is actually zone R-1 and would require a zone change to C-R.

Therefore, the requested zone change is due to City error. The rezoning of the subject property will allow the applicant to proceed with future development of the site and fulfil the intent of Policy No. 6 and the Special Area "K" as stated above.

Current Zone Map-Subject Property Zoned C-R



The existing neighborhood consists of detached single-family housing and attached single-family dwellings. In order to maintain the character of the neighborhood, the site will be developed in compliance with required Design Standards.

Therefore, these policies have been met.

Public Facilities Policies:

The City's adopted Comprehensive Plan, residential, Transportation Goal and Polices, and adopted Storm water and Water Master Plans implement the Statewide Public Facilities and Services Goal by requiring development to be served by public services. The proposal is for revitalized urban development in an area where future extensions of those services can be provided in the most feasible, efficient and economical manner. All necessary and appropriate public services and facilities essential for development will be provided to this property at levels that are adequate to serve the proposed use.

The City maintains an infrastructure of public services that includes sewer, water, and storm drainage facilities. The City will specify any needed changes to the existing service levels at the time building permits are requested.

In order to assure compliance and prior to building permits, the applicant will work with the Fire Department and all other required agencies.

Sidewalks are or will be provided throughout the site for pedestrian circulation. The location along a major transportation corridor facilitates vehicle access, bicycle and pedestrian access, provides significant opportunity to reduce vehicle miles traveled. The vehicle, bicycle, and pedestrian circulation systems will be designed to connect to the existing street and sidewalk systems.

The education district's master plan provides for growth in the district and has options to meet the demand. The education district reviews the population factors to determine planning, funding and locating new schools or providing additional facilities on the sites of existing schools.

Other private service providers supply garbage, telephone, television, postal and internet services as needed by the development. The required public services and facilities to serve new development will be determined by the City at the time development permits are requested. By providing adequate public facilities and services for the proposed use, the requirements of these policies are met.

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.***

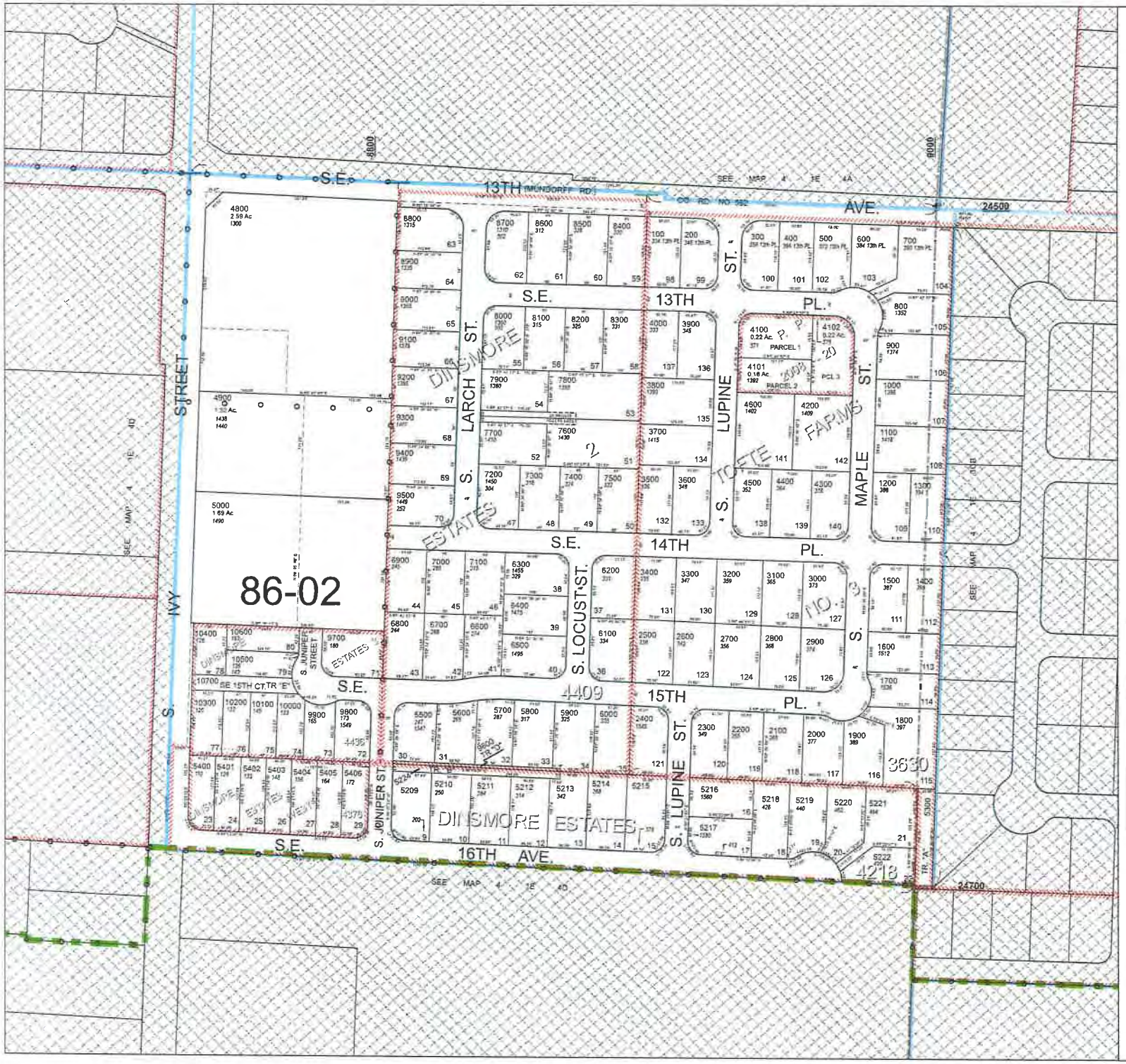
The submitted plans show that the proposed buildings can be serviced by the infrastructure to support the development and will be designed to City standards.

Prior to construction of the site, the applicant will provide plans that identify all existing and proposed utilities. The plans will show how all required utilities will be connected to existing or relocated to provide services to the proposed development.

The applicant will obtain all required permits prior to construction.

<u>In Conclusion</u>: The rezoning of the site to C-R is the fair thing to do based on the City's error. The rezone will be consistent with the intent of Policy No. 6 as stated above.

As shown above and on attached materials, the applicant's findings and site plan meet the Code requirements and therefore approval of this Zone Change is warranted.



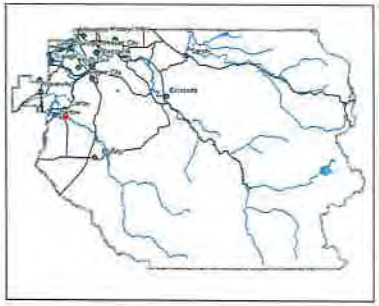
4 1 E 04DA
CANBY

N.E.1/4 S.E.1/4 SEC.4 T.4S. R.1E. W.M.
CLACKAMAS COUNTY
1" = 100'

Cancelled Taxlots

5202
5207
5204
5223
5201
5206
5203
5208
5205
10700
4701
5200
4700
5100
5407

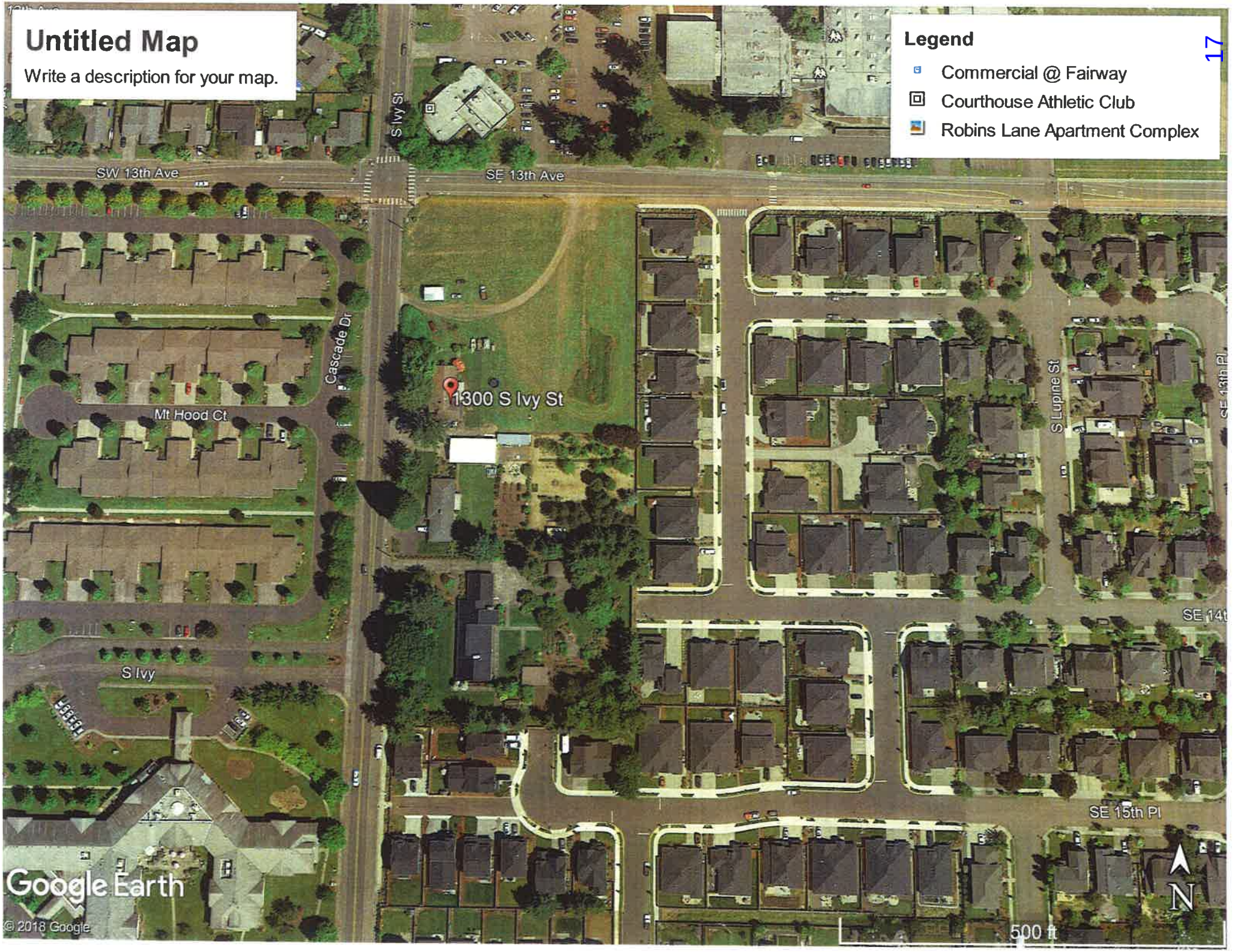
- Parcel Boundary
- Private Road ROW
- Historical Boundary
- Railroad Centerline
- TaxCodeLines
- Map Index
- WaterLines
- Land Use Zoning
- Plats
- Water
- Corner
- Section Corner
- 1/16th Line
- Govt Lot Line
- DLC Line
- Meander Line
- PLSS Section Line
- Historic Corridor 40'
- Historic Corridor 20



THIS MAP IS FOR ASSESSMENT PURPOSES ONLY

2/7/2017

4 1 E 04DA
CANBY


Untitled Map
Write a description for your map.
Legend
Commercial @ Fairway
Courthouse Athletic Club
Robins Lane Apartment Complex
SW 13th Ave
SE 13th Ave
S Ivy St
Cascade Dr
Mt Hood Ct
1300 S Ivy St
S Lupine St
SE 13th Pl
SE 14t
S Ivy
SE 15th Pl
Google Earth
© 2018 Google
N
500 ft

Distinguished by design guidelines and st andards to be applied to the area contained in Canby's Industr ial Area Master Plan. Th is area is generally bound by Highway 99-E and 1st Avenue to the north, Mulino Road to the east, SE 13th Avenue to the south, and Molalla W estern Railroad to the west. Land uses are allowed in this ar ea as per the underlying z one designations. Design standards and guidelines are found in the Industrial Area Master Plan.

FINDING NO. 6

In every co mmunity there are certain areas w hich, becau se of uniqu e developm ent constraints or other special ci rcumstances, warrant sp ecial attention in term s of land use regulations. By identifying th ese areas on a m ap to be used in conjunction with the L and Use Map, such special regulati ons can be delineated in th e Comprehensive Plan without the neces sity of m aking Zoning Ordinance re visions for each special area. After the adoption of the Com prehensive Plan and Land Developm ent/Planning Ordinance in January 1984, L.C.D.C. staff requested that ad ditional work be done to assure that sites which are planned for eventual densities and intensities of de velopment beyond those allowed by present zoning, are protected fr om incom patible de velopment during the interim. A nu mber of new Areas of Special Concern have been added to those originally adopted in order to accomplish this.

All of the various Areas of Special Concern have characteristics which necessitate unique treatment ra ther than co nventional devel opment to m inimum standards set by present zoning. Som e of the areas presently lack fu ll urban services of th e sort nece ssary to support the density or intensity of develop m ent which is planned to eventually occur. Other areas are presently developed in a cert ain manner which conflicts with the planned use of the site (e.g., single-family dwelli ngs in an area designated for eventual commercial use). In such cases, it is proper to leave the present Low Density Residential Zoning intact as a "ho lding pattern " until a th orough "red evelopment" of the area is undertaken. In other locations upzoning is appropriate as soon as any increased development is undertaken. Finally, there ar e som e locations requiring special design considerations to assu re that dev elopment, or r edevelopment, is app ropriate. I t is the City's intention to use th e upzoning process to implem ent the Comprehensive Plan in all cases where upzoning is indicated on the La nd Use Map. In som e cases, the upzoning could happen in the very near future. In othe r cases, it m ay be years b efore all req uired physical improvem ents are adequate to serv e the subject properties. The City will continue to rely on the upzoning process as a m eans of assuring th at improvem ents are made in a tim ely fashion. At the sam e ti me, all of these sites w ill continue to be protected from develop m ent which would prec lude their eventual use as shown on the Land Use Map.

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.

IMPLEMENTATION MEASURES:

A) A map of "Areas of Special Concern" is included in the back of this Plan Element. That map is to be regarded as having the full force and effect of the Land Use Map in determining appropriate land uses and levels of development. Development proposals, even those that appear to conform with existing zoning, will be considered to conform with the Comprehensive Plan only if they meet the requirements imposed here.

B) Specific characteristics of the Areas of Special Concern are as follows:

1 *Area "A"* is significant because of its location on Highway 99-E at a main entry to the City. This site has long been zoned for industrial development but has remained vacant because of topographic constraints, lack of State highway access, and limited rail access. With the installation of traffic signals at the intersection of Highway 99-E and S.W. Berg Parkway, the opportunity for major access improvements to the site can be seen. It now appears that commercial development would better utilize this area, but with a large adjacent area designated for industrial development, it would seem most reasonable to allow either light industrial or general commercial development (provided that any commercial development utilize the signalized intersection for access to Highway 99-E). The development of Area "A" is expected to have an impact on access to Area "B," which is adjacent. Area "A" has been rezoned C-M.

2. *Area "B"* is designated for Heavy Industrial use on the Land Use Map. It is unique because of its location within an old aggregate removal site, with special access, water and sewer service, and drainage concerns which result from its physical condition and location. Area "B" will be upzoned to M-2 when all public facilities are available to serve the area and access problems have been resolved.

3. *Area "C"* includes all of the property shown on the Land Use Map within the "Residential-Commercial" category and having frontage on S. Ivy Street. Every-increasing traffic on S. Ivy Street necessitates special treatment for access, especially where commercial or multi-family residential development occurs. The site plan review process shall be used to assure that strict adherence to parking and access requirements are maintained. Portions of this area which have already been zoned R-2 and developed residentially will be allowed to remain in R-2 zoning. C-R zoning has begun to be used as individual applications for zone changes have been processed. There is no reason to attempt to hasten this transition process because residential uses can eventually be converted to mixed residential/commercial use.

4. *Area "D"* is significant because of its location separating industrial, multiple-family residential, and single family residential areas. Originally intended as a "buffer strip" between conflicting uses, the site remains in private ownership with no known development plans. In order to assure that the development of the site does not conflict with surrounding uses, a review of any proposed design will be necessary. To assure maximum yield to the owner, without creating any undue hardships for residents, M-1/PUD zoning has been applied to the site.

5. *Area "E"* is significant because of its preponderance of extremely deep lots with resulting access constraints. Density of development remains extremely low because of poor access. As a means of opening this area up to increased development, while solving the access problem at the same time, planned unit developments using looped, one-way access roads are encouraged. Such one-way roads will be at least 20 feet in width, with parking restricted to one side and sidewalks required on one side only. They shall be private roads, but the City shall be guaranteed that the roads are maintained or work performed at the owners expense. The Land Use Map designates the area for Medium Density Residential use with appropriate zoning to remain R-1 until a specific proposal is made for R-1.5 PUD zoning.

6. *Area "F"* consists of a relatively narrow strip of land along the west side of N. Maple Street, north of N.W. 22nd Avenue. This land was included within the City's Urban Growth Boundary to allow for the eventual widening of N. Maple Street, which is presently a half street. It has been identified as an area of special concern because the City may need to allow special development techniques to maximize density while still requiring adequate buffers to minimize conflicts with adjacent agricultural activities. The improvement of N. Maple Street to full width is a major city concern because of the potential for increased development in the area, particularly within the Country Club. Development along the street must also allow for streets to eventually be constructed intersecting N. Maple Street from the west. R-1/PUD zoning will be applied to this area at the time of annexation.

7. *Area "G"* is a small triangular shaped piece of property with potential development limitations due to steeply sloping west and south sides and lack of present sewer service. Proper site planning and some financial investment should mitigate both problems at some point in the future. Until that time, development will be limited to a single family dwelling. Any further development will require the prior upzoning to R-1.5.

8. *Area "H"* is a developed neighborhood of single-family dwellings on conventional City lots. It is planned for eventual redevelopment to more of a multiple family and duplex character. The existing developed nature

of the area obviates any need for an immediate zone change at this time. Any proposals for new development or redevelopment of the area, other than for one single-family dwelling, per lot, will require prior upzoning to R-2.

9. *Area "I"* consists of a wide strip of property bordering N.E. Territorial Road. It includes properties which are planned for medium density residential use and properties planned for high density residential use. Present development in the area includes apartments, condominiums, single-family dwellings, and vacant lots. Present zoning includes some R-2 areas and a predominance of R-1 areas. Street dedications and, in some cases, street improvements are needed to make some of the properties suitable for higher density development. New developments, other than one single-family dwelling per lot, will require prior upzoning to either R-1.5 or R-2, as appropriate.

10. *Area "J"* is a large area of multiple owners bounded on the west side by Highway 99E, SE 1st Avenue to the South, Haines Road to the East, and the Urban Growth Boundary to the north. The area contains numerous single family homes, a pub (The Spinning Wheel), several churches, and significant open space and natural features, the most notable is a large, man-made lake located in the approximate center of the area. Because of the existing mix of uses, this area presents a unique opportunity for the City to master plan the area and create appropriate zoning language and/or zoning overlays to encourage a mixed density neighborhood. Until a master plan is adopted, this area should be held in reserve and properties in this area should remain a low priority for annexation. The creation of this master plan should be high on the priority list for long-range planning project for the City. Through the 2002-2003 public process to locate appropriate areas for Medium and High Density Residential Land, this area was found to be appropriate for the equivalent of a minimum of 12 acres of High Density Residential Development and a minimum of 15 acres of Medium Density Development. During the master planning process, these numbers should be used as a guideline, but could be increased if, through a public input process, more is deemed desirable, especially if it is to protect existing open spaces, natural features, or other desirable elements for the area. Development of the master plan should concentrate on protecting the special natural and physical characteristics of the area

11. *Area "K"* is approximately 2.5 acres in size and is currently inside City Limits with a zoning of R-1. The parcel is located on the southeast corner of SE 13th Avenue and S. Ivy Street and is currently being operated as a commercial nursery (a grandfathered use from before it was annexed). Because of its proximity to Hope Village, schools, and residential neighborhoods, this parcel was identified as a good area for some sort of

convenience or residential commercial. Because of the different allowed uses in each zone, it is difficult to determine which designation would be most appropriate. Many meeting participants felt that a convenience store (allowed outright in the Convenience Commercial (CC) zone but not at all in the Residential Commercial (CR) zone) might be appropriate but it is unclear as to whether a service station (also allowed outright in the CC zone) is equally as compatible with surrounding uses. A placeholder designation of Residential Commercial (RC) has been placed on the parcel because it offers the property owner more options at this time, but the City may wish to consider a text amendment to change the allowed or conditional uses in either zone to provide for a well designed convenience store at this location. A zone change would be required from R-1 upon redevelopment of the property.

12. *Area "L"* comprises approximately 30 acres of parcels zoned for low density residential development. The parcels have been farmed for many years and were outside the Urban Growth Boundary of the City until 2003. The area presents a unique challenge because it is surrounded by existing neighborhoods that could be negatively impacted by development. In addition, the City has infrastructure requirements that must be developed following a comprehensive master plan addressing parks and/or open space provision, street and infrastructure design, public safety facilities, buffering, and other relevant issues. The master plan should integrated reasonable foreseeable uses of adjacent properties, Subdivision of the property should not occur unless such a master plan is approved by the Planning Commission. Creation of the master plan should include input from the public and neighborhood association.

C) In each of the examples listed above where one single family dwelling per lot is to be allowed prior to up zoning, the City will review the plot plans of such dwelling units and set such conditions regarding building setbacks or orientation as may be necessary to assure that future higher densities or intensities of development will not be precluded because of such building placement.

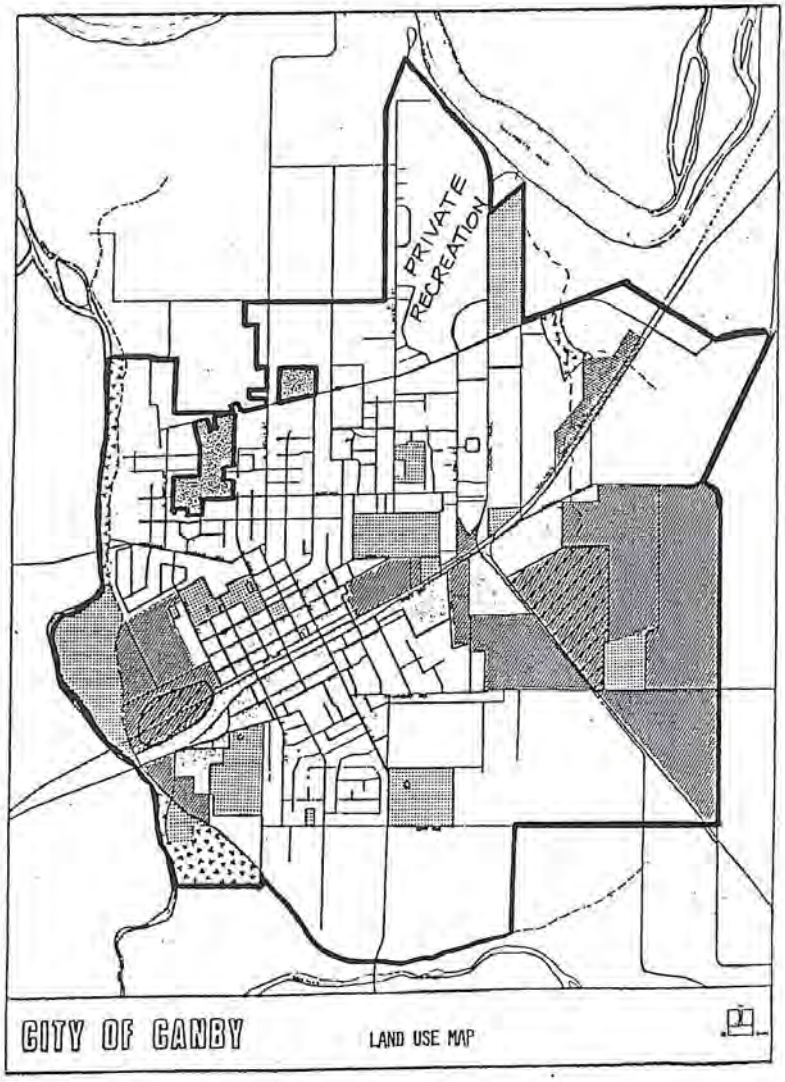
FIGURE III-1

LAND USE MAP ACREAGE FIGURES

	Within City Limits	*Within UGB*	*Total City + UGB*
Agricultural	30.5	13.4	43.9**
Low Density Residential	668.5	1,140.0	1,808.5
Medium Density Residential	85.4	12.3	97.7
High Density Residential	206.6	52.4	259.0
Private - Recreational	149.8	-0-	149.8
Public Owned	221.0	19.2*	240.2
Downtown Commercial	58.0	-0-	58.0
Convenience Commercial	-0-	2.0	2.0
Residential - Commercial	17.8	-0-	17.8
Highway Commercial	95.0	14.0	109.0
Commercial Manufacturing	27.2	44.4	71.6
Light Industrial	153.8	240.4	394.2
Heavy Industrial	24.8	69.5	94.3
Flood-Steep Slope	57.0	25.0	82.0
TOTALS	1,795.4	1,632.6	3,428.0

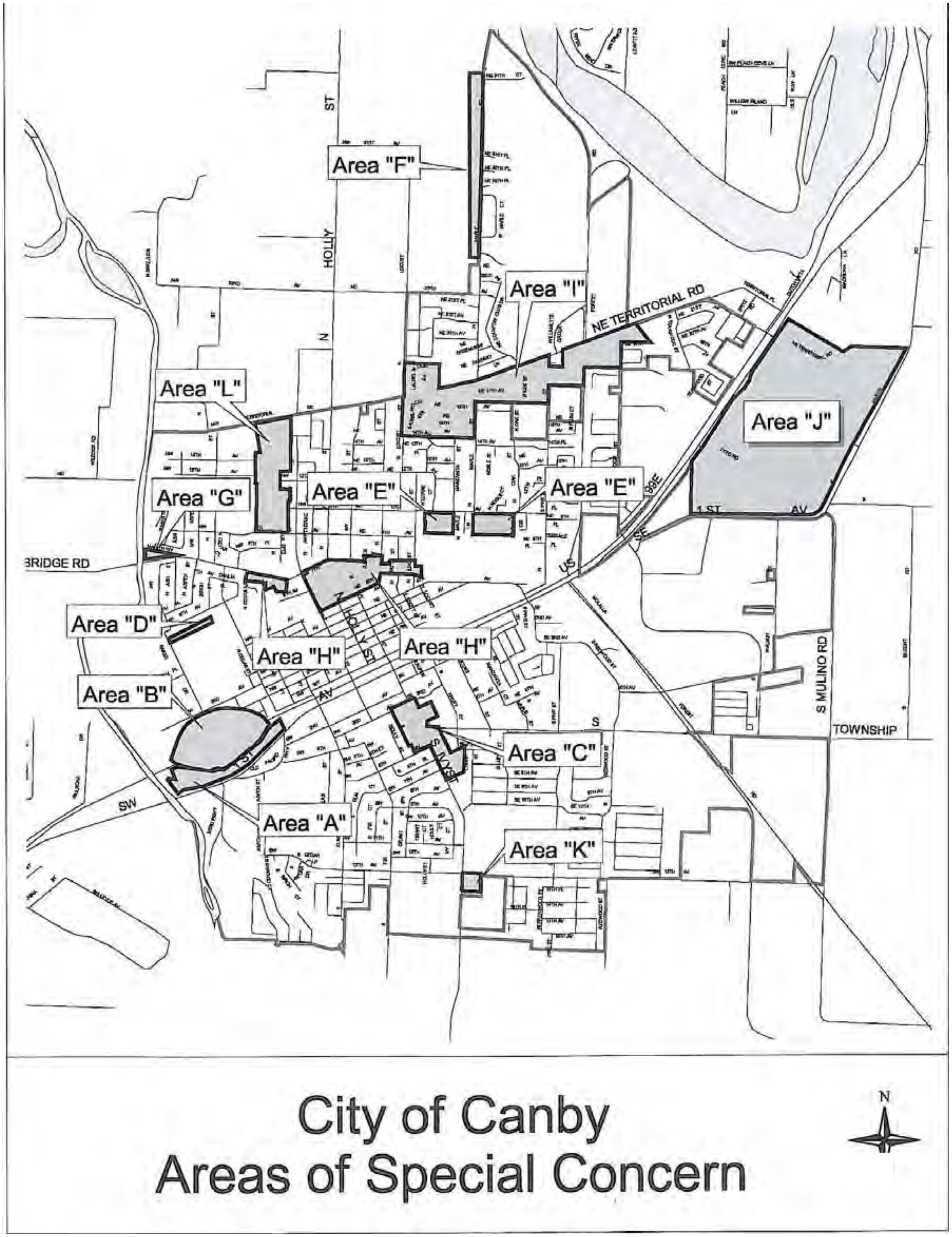
*Zion Memorial Cemetery already City-owned
**This property excluded from U.G.B.

NOTE: The locations shown on this map are generalized. More specific information can be gained from the official land use map on file in City Hall.



Canby Comprehensive Plan

Land Use Map


Area "F"
Area "I"
NE TERRITORIAL RD
Area "L"
Area "J"
Area "G"
Area "E"
Area "E"
1 ST
AV
BRIDGE RD
Area "D"
Area "H"
Area "H"
Area "B"
Area "C"
S MULINO RD
TOWNSHIP
SW
Area "A"
Area "K"
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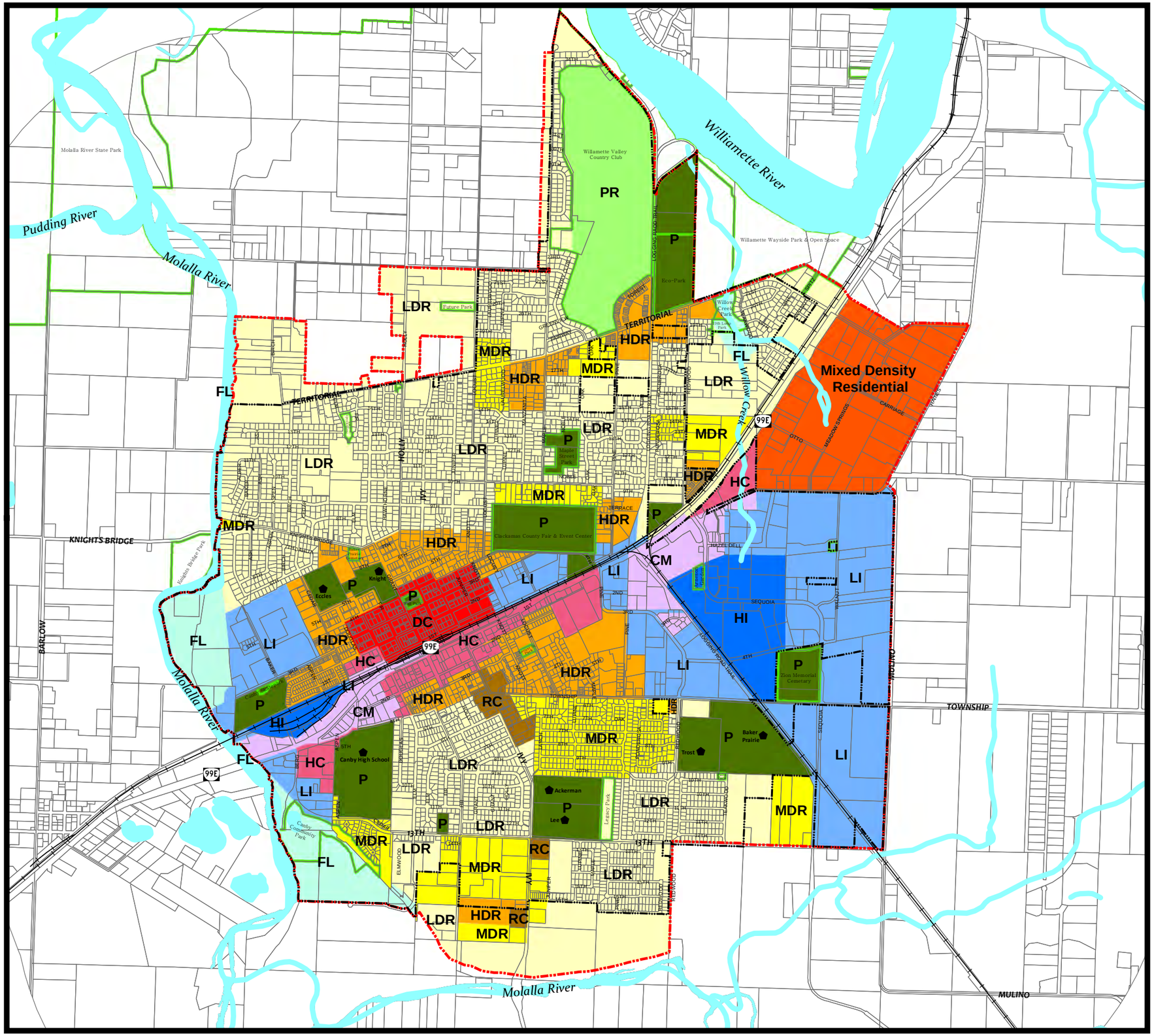
City of Canby
Areas of Special Concern

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

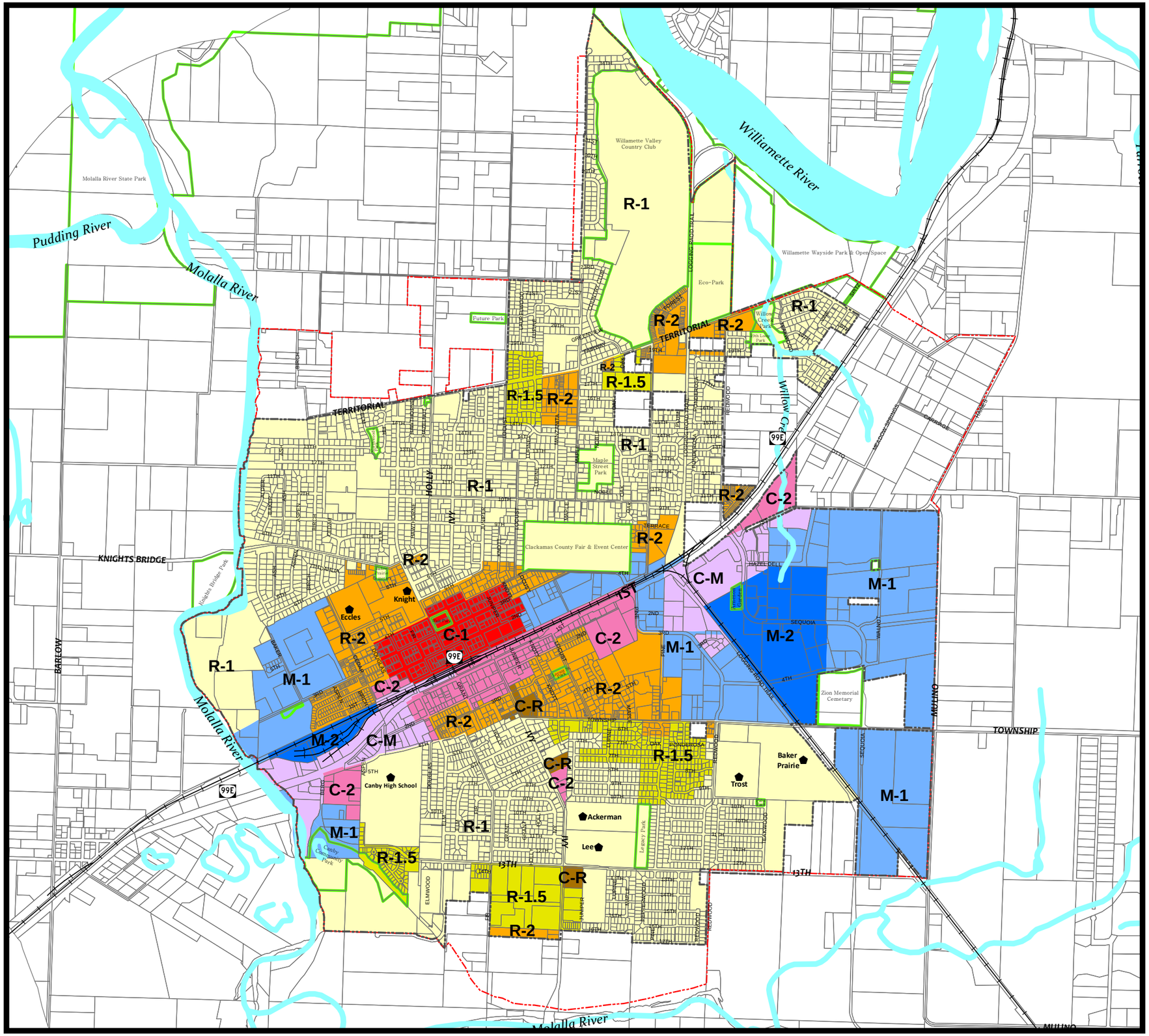
N

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

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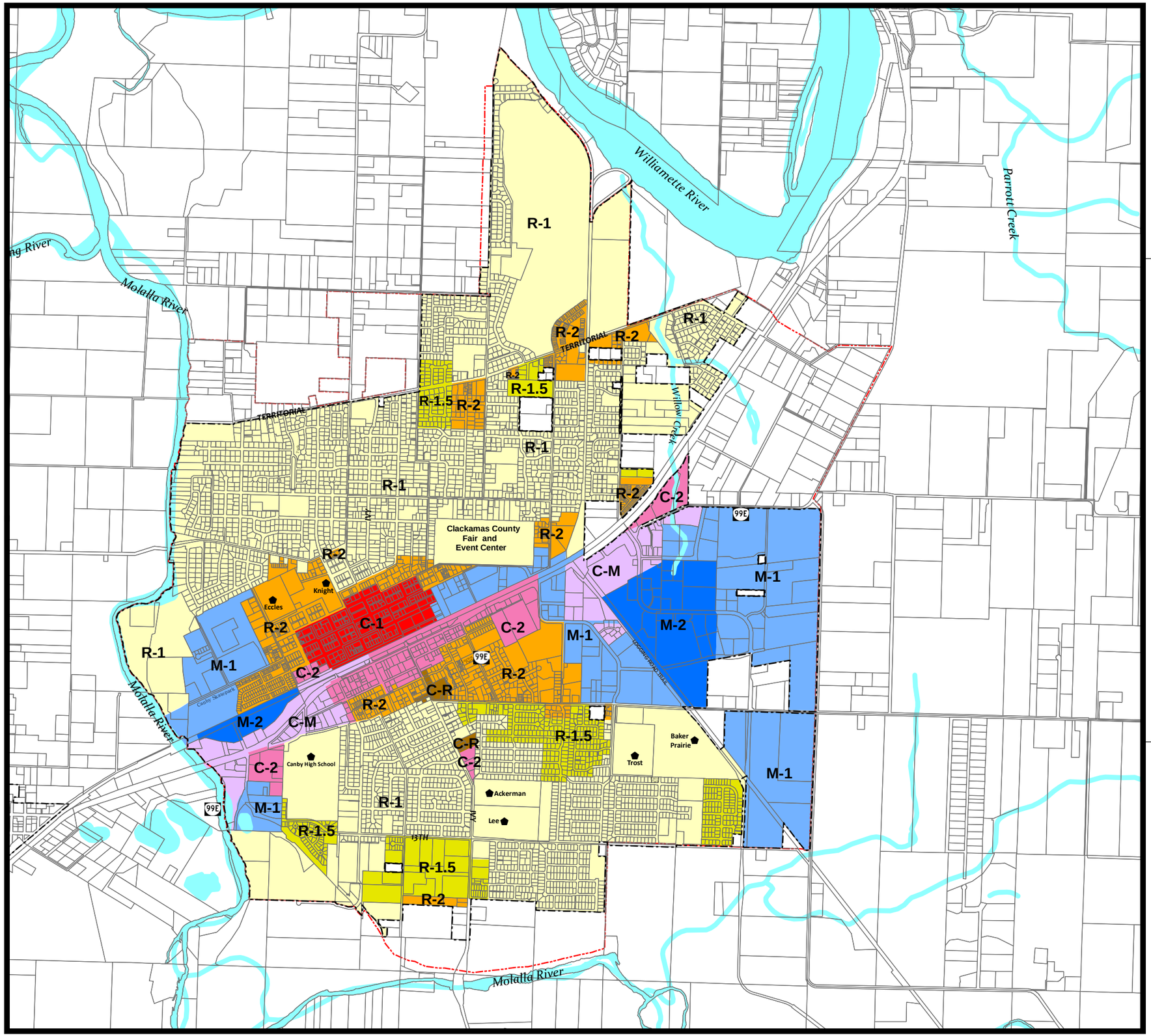
City of Canby

Zoning Map



- City Limits
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- 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 0.275 0.55 1.1 Miles

September 2018

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.

N

Laney Fouse

From: Craig-Barb Carpenter <craigbarb.carpenter@yahoo.com>
Sent: Wednesday, August 29, 2018 2:45 PM
To: PublicComments
Subject: City File # ZC 18-04, ZONE CHANGE, 1300 S Ivy St: Comments & Concerns

We oppose the zone change from R-1 to C-R, for the following concerns:

1) The "SALE" should never have been listed as C-R, when the zone is, and was at the time of listing, R-1. The existing R-1 Low Density zone designation should remain to be consistent with the surrounding area.
2) A C-R zone change would result in an abundance of increased traffic on 13th and inadequate parking for a
C-R build of 30-38 units.
3) Increased traffic is a safety concern for school children at both Ackerman and Philander Lee
4) Overflow parking for a C-R build would potentially be on Larch, 13th Place and the Canby Adult Center lot
5) Emergency responders would not have adequate access to enter / turn around / exit
6) A high density C-R build would effect the current available water supply, which is dependent on the level of the Molalla river.
7) The proposed C-R build is essentially a series of 3 story structures, at approx 38' high, which would infringe on the privacy of residence on Larch.

Thank you for your consideration.

Regards,
Craig & Barb Carpenter
craigbarb.carpenter@yahoo.com
325 SE 13th Place
8/29/18

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 August 31, 2018.
Written comments to be included in City Council packet are due by September 21, 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: Zone Change 1300 S Ivy St (ZC 18-04)

COMMENTS:

It is important that this land parcel remain RI and NOT BE changed. The entire properties ajoining this land is NOT designed for commercial uses. Additional traffic for a commercial development "Canby Town houses" would greatly effect NOT only the existing neighborhoods but the schools and Senior Center and Swimming pool traffic. Please do NOT allow this Zone Change.

CITIZEN NAME: Rick Brown
EMAIL: brown001@frontier.com
ORGANIZATION/BUSINESS/AGENCY:
ADDRESS: 1395 S. March ST Canby OR 97013
PHONE # (optional):
DATE: 8/22/18

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:
AGENCY:
DATE:

Thank you!

City of Canby, Canby Planning Department, 222 NE 2nd Ave, Canby 97013, 503-266-7001

CITY OF CANBY –COMMENT FORM

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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: Zone Change 1300 S Ivy St (ZC 18-04)

COMMENTS:

This is not the appropriate time, if ever, to try and change the zoning of this property. At one time maybe, before the higher scale homes were built on what would be the next block east of the proposed town homes that would look down into our windows and back yards. And certainly not expected in the neighborhood.

However, the Willamette Capital Investment applicant wants the zone change to stuff high density residential/commercial with 38 town units and their own private service entrance which is not a standard size street. They must have an off street two car garage for each unit and will become storage areas with no place to park on street. Therefore will seek parking elsewhere which would fill up our already full neighborhoods. They do not have two service entrances which would be needed. Their other entrance has no outlet as it is to be provided for emergency services only.

This greediness jeopardizes all of us living here. Please say no to a zone change.

CITIZEN NAME: Micki A Paul
EMAIL: micmac@canby.com
ORGANIZATION/BUSINESS/AGENCY: HOA Lot 63
ADDRESS: 1315 S Larch St, Canby, Or
PHONE # (optional): 503 266 4699
DATE: 8/23/18

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

RECEIVED
AUG 23 REC'D
By

NAME: _____
AGENCY: _____
DATE: _____

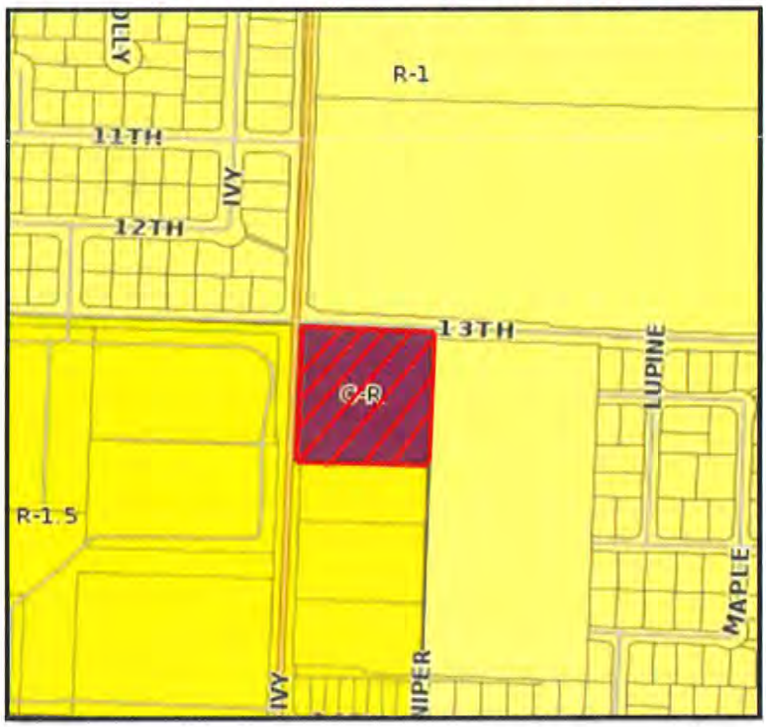
Thank you!

City of Canby, Canby Planning Department, 222 NE 2nd Ave, Canby 97013, 503-266-7001

City of Canby

PUBLIC HEARING NOTICE &
REQUEST FOR COMMENTS FORM
City File No.: ZC 18-04
Project Name: ZONE CHANGE, 1300 S Ivy St
PUBLIC HEARING DATES: PC—September 10, 2018.
CC – October 3, 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 a Zone Map Amendment (ZC 18-04). Applicant proposes to re-zone 2.59 acres at 1300 S Ivy St from R-1 Low Density Residential to C-R Residential Commercial in accordance with the Canby Comprehensive Plan. Both Public Hearings will be held in the Council Chambers, at 222 NE 2nd Ave, Canby, OR 97013. ***The Planning Commission will meet Monday, September 10, 2018, 7 pm. The City Council will meet Wednesday, October 3, 2018, 7 pm.***



Location: 1300 S Ivy St (See property hatched in red on map on left.)
Tax Lots: 41E04DA04800.
Lot Size & Zoning: 2.59 acres, R-1 Low Density Residential
Proposed Zoning: C-R Residential-Commercial
Property Owners: Willamette Capital Investment
Applicant: Butch Busse
Application Type: Zone Map Amendment (Type IV)
City File Number: ZC 18-04
Contact: Bryan Brown, 503-266-0702, brownb@canbyoregon.gov
Comments Due – If you would like your comments to be incorporated into the Staff Report, please return the Comment Form by Wednesday, August 29, 2018 for the Planning Commission meeting and by Friday, September 21, 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 Zoning Map Amendment application and will forward a recommendation to the City Council. The City Council will then consider the Zoning Map Amendment application and make a final decision.
Where can I send my comments? Written 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 Planning staff report will be available Friday, August 31, 2018. The Council Staff Memo will be available Tuesday, September 25, 2018. Both 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:

- 16.08.020 & .030 Zoning Map & Boundaries
- 16.16 R-1 Low Density Residential Zone
- 16.24 CR Residential/Commercial Zone
- 16.54 Amendments to Zoning Map
- 16.89 Application & Review Procedures
- Canby Comprehensive Plan (Policy No. 6 Implementation Measure B.11, Areas of Special Concern Map

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

SITE AND DESIGN REVIEW STAFF REPORT
FILE #: DR 18-03/CUP 18-03/PUD 18-01/SUB 18-02
Canby Townhomes
Prepared for the September 10, 2018 Planning Commission Hearing

LOCATION: 1300 S. Ivy Street
TAX LOT: 41E04DA04800 (Bordered in map below)
LOT SIZE: 2.59 acres
ZONING: C-R Residential/Commercial Zone
OWNER: Willamette Capital Investments, LLC

APPLICANT: Butch Busse
APPLICATION TYPE: Site & Design Review/Conditional Use Permit/Planned Unit Development/Subdivision (Type III)
CITY FILE NUMBER: DR 18-03/CUP 18-03/PUD 18-01/SUB 18-02

APPLICANT'S REQUEST:

The subject parcel is located at the southeast corner of SE 13th Avenue and S. Ivy Street. The applicant is seeking site and design approval to construct 38 common wall (Townhomes) dwellings each on a separate lot on a 2.59 acre parcel in the C-R Zone with a single street access. The applicant originally proposed 38 units with two access roadways, one on S. Ivy and the other onto SE 13th Avenue. However, S. Ivy Street is under Clackamas County jurisdiction and the City was notified by Clackamas County that no additional access will be allowed onto S. Ivy Street. Subsequently, the development is limited to one full service access onto SE 13th Avenue. **Under Section 16.46.010(A)(2) CMC, a single access limits the number of units to 30 units.** The property is located within the C-R zone and common wall (townhomes) are only permitted in the zone under a conditional use approval and must conform to the development standards listed in the R-2 zone. The applicant filed a request for a conditional use permit under this application. Additionally, the applicant filed a Planned Unit Development Application in order to create an opportunity for the Planning Commission to have the flexibility, under the PUD criteria, to reduce the required 20 foot rear yard setbacks for two-story buildings to 15 feet and provide the flexibility to create private streets. **However, the applicant revised the request and will implement the required standard 20 foot setback.** The PUD process allows for private streets, and the applicant intends 38 lots and 20 foot wide streets. The narrow streets will not allow for guest parking within the subdivision, and this creates a potential problem. Staff suggests that the applicant revise their application to reduce the number of lots and include separate areas for guest parking lots. This application also includes a subdivision to divide a 2.59 acre parcel into 38 separate lots which by ordinance as previously mentioned limits the number of units to 30. CMC 16.46.010.C allows the Planning Commission to increase the 30 unit limit with only one means of access based upon finding that no unwarranted problems for the public street system or emergency service provision will result. The Conditional Use Permit is needed to allow proposed single-family dwellings having common wall construction and the C-R zone requires such development to meet the R-2 development standards which include providing density at a minimum of 14 units per acre. **This places two ordinance provisions in direct conflict in terms of limiting a development with only one full service means of access to no more than 30 units versus complying with the minimum of 14 units per acre (36 units). The private streets within the development are proposed at 20 feet wide. The width does not provide for guest parking and will cause health and safety issues such as restriction the movements of emergency vehicles. Additionally, Section 16.20.030(D)(4), of the R-2 development, standards states that, "Maximum building length shall be 120 feet." According to the applicant's site plan, it appears that the proposed buildings do not meet this standard. The Section also requires a maximum of 70% impervious surface of the lot area for each dwelling unit, and staff cannot determine if the lots meet that provision. Staff cannot recommend approval of the project unless the applicant provides a revised site plan that delineates no more than a 30 lot subdivision with guest parking areas or spaces shown of the plan, and information proving that the project meets building length and impervious surface standards.**

SECTION I APPLICABLE REVIEW CRITERIA:

City of Canby Land Development and Planning Ordinance Chapters:

16.08 General Provisions

16.10 Off-Street Parking and Loading

16.24 C-R Residential/Commercial Zone

16.20 R-2 High Density Residential Zone

16.36 Planned Unit Development Overlay Zone (PUD)

16.43 Outdoor Lighting Standards

16.46 Access Limitations on Project Density

16.49 Site and Design Review

16.50 Conditional Uses

16.62 Subdivisions - Applications

16.64 Subdivisions – Design Standards

16.86 Street Alignments

16.70-76 Planned Unit Development

16.88 General Standards and Procedures

16.89 Application and Review Procedures

16.120 Parks, Open Space, and Recreational Land

SECTION II REVIEW FOR CONFORMANCE WITH APPLICABLE APPROVAL CRITERIA:

16.08 General Provisions:

16.08.070 Illegally Created Lots

In no case shall a lot which has been created in violation of state statute or city ordinance be considered as a lot of record for development purposes, until such violation has been legally remedied. (Ord. 740 section 10.3.05(G), 1984)

Findings: **Based on available information, it appears that the property was created in its current configuration by survey filed with the Clackamas County Surveyor in 1960. The survey was filed prior to 1976 when Oregon State Statues (ORS) required that land could only be divided through land use action. The subject property can be considered a separate legal lot for land use purposes.**

16.08.090 Sidewalks Requirements

A. In all commercially zoned areas, the construction of sidewalks and curbs (with appropriate ramps for the handicapped on each corner lot) shall be required as a condition of the issuance of a building permit for new construction or substantial remodeling, where such work is estimated to exceed a valuation of twenty thousand dollars, as determined by the building code. Where multiple permits are issued for construction on the same site, this requirement shall be imposed when the total valuation exceeds twenty thousand dollars in any calendar year.

B. The Planning Commission may impose appropriate sidewalk and curbing requirements as a condition of approving any discretionary application it reviews. (Ord. 740 section 10.3.05(I), 1984)

Findings: The project is a development of a vacant lot. Sidewalks and curbs on the street frontage along SE 13th Avenue shall be improved to Canby Public Works standards if required by the City Engineer. Clackamas County has jurisdiction of S. Ivy Street and the applicant shall meet conditions proposed by the County in their memo dated: December 13, 2017. The sidewalks must match existing. All sidewalks within the development area must meet required development standards.

16.08.150 Traffic Impact Study (TIS)

A. Purpose. The purpose of this section of the code is to implement Section 660-012-0045(2)(b) of the State Transportation Planning Rule, which requires the city to adopt a process to apply conditions to development proposals in order to minimize adverse impacts to and protect transportation facilities. This section establishes the standards to determine when a proposal must be reviewed for potential traffic impacts; when a Traffic Impact Study must be submitted with a development application in order to determine whether conditions are needed to minimize impacts to and protect transportation facilities: what information must be included in a Traffic Impact Study; and who is qualified to prepare the Study.

B. Initial Scoping. During the pre-application conference, the city will review existing transportation data to determine whether a proposed development will have impacts on the transportation system. It is the responsibility of the applicant to provide enough detailed information for the city to make a determination. If the city cannot properly evaluate a proposed development's impacts without a more detailed study, a transportation impact study (TIS) will be required to evaluate the adequacy of the transportation system to serve the proposed development and determine proportionate mitigation of impacts. If a TIS is required, the city will provide the applicant with a "scoping checklist" to be used when preparing the TIS.

C. 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: **Based on criteria listed in *16.08.150 (C)* above, staff determined that a TIS is required for this particular proposal. Subsequently, a TIS was completed by ATEP, Inc. The study was to evaluate possible transportation impacts from the proposed development. The study reviewed by DKS, Associates and the review stated that, with recommended modifications, the study provides adequate information to comply with the required items identified in the Transportation Impact Study Scope.**

16.10 Off Street Parking

16.10.030 General requirements

A. Should the owner or occupant of a structure change the use to which the building is put, thereby increasing parking or loading requirements, the increased parking/loading area shall be provided prior to commencement of the new use.

C. In the event several uses occupy a single structure, the total requirements for off-street parking shall be the sum of the requirements of the several uses computed separately. If the applicant can demonstrate that the uses do not have overlapping parking needs (based on days and hours of operation) and can share parking, the total requirement for combined uses may be reduced by up to 60 percent.

16.10.050 Parking standards designated

Findings: **Parking for the proposed building can be calculated with the standard for single-family dwellings listed in *Table 16.10.050*. This standard states the following:**

2.00 spaces per dwelling unit for new construction…

In this particular case, the applicant will build on the vacant parcel. All uses proposed on the parcel must be consistent with uses permitted in the C-R zone and meet appropriate development standards of the R-2 zone as required under Section 16.24.020 of the C-R zone. The parking calculations table 16.10.050 lists two parking spaces for each single-family residence, and it appears that the proposal can meet these standards.

16.10.070 Parking lots and access
16.10.100 Bicycle Parking

Findings: **Bicycle parking is not required for single-family residential use.**

16.24 C-R (Residential/Commercial Zone)
16.20 R-2 (High Density Residential Zone)

Findings: **The underlying zoning of the property is C-R (16.24). Section 16.24.020(B) lists conditional uses allowed in the zone as follows: "Uses listed as permitted outright in R-2 zones, and not listed as permitted in section 16.24.010. Such uses shall conform to the development standards of the R-2 zone." Single-family dwellings having common wall construction are listed as uses permitted outright in the R-2 zone under section 16.20.010. Subsequently, the R-2 development standards under 16.20.030 will apply and be discussed in the conditional use section of this report.**

16.42.040 Signs

Findings: **The applicant is not proposing a new sign at this time. Any future signs will be reviewed with submittal of a Sign Permit Application at the time of construction and must be placed outside any vison clearance area.**

16.43 Outdoor Lighting Standards

Findings: **Generally, for residential subdivision development, only streetlights are required and installed to public works standards. The internal streets are private, and it is not clear if street lights are planned for the development.**

16.46 Access Limitations on Project Density

Findings: **As previously mentioned, ingress and egress for the project must be from SE 13th Avenue. Clackamas County has jurisdiction of S. Ivy Street and access is not permitted onto that street. Based on available information, the proposed roadway access and driveway will meet separation and width standards listed in the section and reviewed in the submitted TIS. A gated emergency only access exit is proposed onto S. Ivy Street, and the access appears acceptable to the County with this restriction. The access does not conform to the County's separation standard from the street intersection.**

16.49.040 Site and Design Review - Criteria and Standards

B. In review of a Type III Site and Design Review Application, the Board shall, in exercising or performing its powers, duties or functions, determine whether there is compliance with the following:

1. The proposed site development, including the site plan, architecture, landscaping and graphic design, is in conformance with the standards of this and other applicable city ordinances insofar as the location, height and appearance of the proposed development are involved; and

2. The proposed design of the development is compatible with the design of other developments in the same general vicinity; and

3. The location, design, size, color and materials of the exterior of all structures and signs are compatible with the proposed development and appropriate to the design character of other structures in the same vicinity.

4. The proposed development incorporates the use of LID best management practices whenever feasible based on site and soil conditions. LID best management practices include, but are not limited to, minimizing impervious surfaces, designing on-site LID storm water management facilities, and retaining native vegetation.

5. The Board shall, in making its determination of compliance with this Ordinances, shall use the matrix in Table 16.49.040 to determine compatibility unless this matrix is superseded by another matrix applicable to a specific zone or zones under this title. An application is considered to be compatible with the standards of Table 16.49.040 if the following conditions are met:

a. The development accumulates a minimum of 60 percent of the total possible number of points from the list of design criteria in Table 16.49.040; and

b. At least 10 percent of the points used to comply with (a) above must be from the list of LID Elements in Table 16.49.040. (Ord. 1338, 2010).

D. In review of a Type III Site and Design Review Application, the Board shall, in exercising or performing its powers, duties or functions, determine whether there is compliance with the INTENT of the design review standards set forth in this ordinance.

Findings: **The applicant filed a Type III application, and provided a detailed response to Table 16.49.040 to demonstrate compliance with the total point menu and meets criterion in "B" above. <u>However, the applicant did not submit elevations or details concerning the criteria listed above or development details for the private park area.</u> Staff cannot determine if the proposal meets this criteria. As a condition of approval, the applicant must submit detailed elevations of the project that reveals how the proposal meets the design standards listed in Section 16.49.040.**

16.49.065 Bicycle and pedestrian facilities

Developments coming under design review shall meet standards listed in this section.

Findings: **Construction of proper sidewalks is expected on private streets as well as public streets. The quality of a PUD/CUP site plan is deemed important to assure compatibility with**

the neighborhood. Internal curb-tight sidewalks are required in the subdivision. Staff concludes that it appears this criterion is met.

16.49.070 Landscaping provisions, Authority and intent

The purpose of this section is to establish standards for landscaping within the City of Canby in order to enhance the environmental and aesthetic quality of the city

16.49.080 General provisions for landscaping

Findings: The applicant provided scaled landscape plans and comments to address planting and landscape provisions listed in this section. The information contained specifics on LID storm water management, controls during construction, specification of tree and plant materials and other information required in this section and contained in the landscape calculation form provided with the application. After a review of all information provided, staff concluded that the project meets these standards.

CONDITIONIAL USE

16.50 Conditional Uses:

16.50.010 Authorization to grant or deny conditional uses.

A conditional use listed in this title shall be permitted, altered, or denied in accordance with the standards and procedures of this chapter. In the case of a use existing prior to the effective date of the ordinance codified in this title as a conditional use, a change in the use, or reduction in lot area, or an alteration of the structure, shall require the prior issuance of a conditional use permit. In judging whether or not a conditional use permit shall be approved or denied, the Planning Commission shall weigh the proposal's positive and negative features that would result from authorizing the particular development at the location proposed and to approve such use, shall find that the following criteria are either met, can be met by observance of conditions, or are not applicable.

A**.** The proposal will be consistent with the policies of the Comprehensive Plan and the requirements of this title and other applicable policies of the city;

B. The characteristics of the site are suitable for the proposed use considering size, shape, design, location, topography, existence of improvements and natural features;

C. All required public facilities and services exist to adequately meet the needs of the proposed development;

D. The proposed use will not alter the character of the surrounding areas in a manner which substantially limits, or precludes the use of surrounding properties for the uses listed as permitted in the zone. (Ord. 740 section 10.3.75 (A), 1984)

Findings: **The applicant filed a Conditional Use Application as required under Section 16.24.020(B) of the C-R zone for single-family common wall dwellings. The above criteria must be addressed to assure consistency of the use within the zone based on these provisions. Staff has reviewed the proposed use and the above criteria. Staff determined that:**

There are no policies in the Canby Comprehensive Plan or other policies that would be inconsistent with the applicant's proposed use.

The site is suitable for the proposed use which will offer medium density residential use in a zone that allows for that type of development. However, the development is limited to a total of 30 residential units under criteria listed in Section 16.46.010(A), because the property is allowed only one access onto SE 13th Avenue. An additional emergency only access will be permitted onto S. Ivy Street and must be gaited and constructed to meet the City Engineers stated guidelines. It appears that the proposal will provide residential housing at a needed higher density in the City which will further enhance the economic and residential benefits to Canby. Subdivision developments are in place in to the east and west with residential lots to the south. Canby adult center and swim center is situated to the north. There is no evidence that the residential use proposed significantly conflicts with future or current land uses in the area.

Based on comments from City agencies at the Pre-Application Conference, all public utilities are available and adequate to serve this proposed use on this site.

PLANNED UNIT DEVELOPMENT (PUD)

16.36 Planned Unit Development Overlay Zone (PUD)

16.36.010 Purpose.
The Planned Unit Development Overlay Zone is intended to be used in conjunction with any of the city's underlying base zones (example: R-1/PUD, M-1/PUD, etc.) to assure that the ultimate development of the site will meet the requirements of a planned unit development. The Planned Unit Development Overlay Zone is intended to be applied only to those specific properties which, because of unique characteristics such as size, shape and location of the parcel, are most suitable for development as planned unit developments. (Ord. 740 section 10.3.35 (A), 1984)

Findings: **A master planned residential community commonly utilizes a PUD process. Planned unit development, as applied to this request involves certain aspects of the development that require flexibility to the code which the Planning Commission can invoke in order for the proposal to go forward as requested by the applicant. In this particular case, two provisions in the code require the attention of the Planning**

Commission. According to the submitted site plan, the applicant intends to reduce the 20 foot rear yard setbacks, required for two-story dwellings, to 15 feet for interior yards along the property boundaries that border surrounding properties while maintaining a 20 foot rear yard setback on the arterial roadway frontage. However, the applicant revised the request to include the required 20 foot rear yard setbacks. Additionally, the proposal does not meet the density criteria of 14 units per acre required in the R-2 zone, which is required of common wall (townhome) construction within the C-R zone. The townhomes are permitted only under a conditional use approval.

16.74 **A.** Residential units, either detached or in multiple type dwellings, but at no greater density than is allowed for the zoning district as set forth in Division III, except as may be modified for a density bonus as provided in section 16.76.010 or Chapter 16.80.

Findings: **The parcel is 2.59 acres, and the proposal originally included 38 lots which met the required density standard of 14 units per acre: 38 units divided by 2.59 acres = 14.67. However, as previously mention, access is not permitted onto S. Ivy Street, and the property, therefore is limited to 30 units per Section 16.46.010(A): 30 units divided by 2.59 acres = 11.58 units. Because the reduction in the number of dwelling units is due to a traffic safety issue, in this particular case, staff is willing to support approval of a lower density stated above in order for the project to move forward. The safety factor can override the reduction in density of 14 units per acre in this case. The proposal cannot meet the conflicting standards without eliminating the common wall dwellings otherwise allowed in the C-R zone.**

16.76 **16.76.010 Minimum requirements.**

The minimum requirements for a residential planned unit development shall include the following two items:

A. A minimum of fifteen percent of the gross area of the development shall be devoted to open space, and shall be located in a common area or dedicated to the public, except in the case of conversions of existing rentals to unit ownership, where the Planning Commission may permit a lesser requirement if it is found that adequate recreation facilities exist for the units.

B. The average area per dwelling unit shall not be less than that allowed within the zoning district in which the subdivision is located, unless alternative lot layout is used pursuant to 16.04.040(B). The average area shall be calculated by dividing the number of dwelling units into the gross area of the total land development, minus that area occupied by streets. The commission may grant a density bonus of not more than fifteen percent to planned unit developments where it is found that unique, beneficial design features (such as solar efficiency, recreation facilities, or other community assets) warrant such a bonus.

The commission shall clearly state its findings in support of granting or denying a requested density bonus. (Ord. 740 section 10.5.50, 1984; Ord. 1338, 2010)

16.76.040 Exceptions.

A. In considering a proposed planned unit development project, the approval thereof may involve modifications in the regulations, requirements and standards of the zoning district in which the project is located so as to appropriately apply such regulations, requirements and standards to the development. Modification of the lot size, lot width, and yard setback requirements may be approved by the commission at the time of the approval of the tentative subdivision plat or conditional use permit.

B. Building height shall conform to the zoning district in which the development is located.

C. Off-street parking and off-street loading requirement shall be pursuant to Division III. (Ord. 740 section 10.5.60(C), 1984)

Findings: Based on the applicant's information, the request meets the 15% open space requirement. However, the Planning Commission must determine if the safety factor, that limits the development to one access and 30 dwelling units, justifies the importance of not meeting the minimum density provisions. The applicant proposed a reduction in the rear yard setback to 15 feet from adjacent dwellings but revised the site plan to show the required 20 foot rear yard setback.

SUBDIVISION

Findings: The subject property is currently a single parcel that contains a single-family dwelling that will be removed from the parcel. The applicant intends to divide the existing 2.59 acres into a 38 lot subdivision that will include 38 common wall (Townhome) single-family dwellings each on a single lot. Staff determined that a Traffic Impact Study (TIS) was required and a DKS Engineering memo, dated May 11, 2018, described the scope of work. A revised TIS prepared by ATEP was issued on June 15, 2018 with mitigation, parking, and spacing conclusions. The report was reviewed by DKS Engineering that issued a memo dated June 20, 2018 which stated the TIS provided adequate information to comply with the required items listed in the Scope of Services. Based on information included in the file, staff concurs with the DKS findings.

Public utilities are currently located at SE 13th Avenue and at S. Ivy Street and can be extended as development occurs. Although the applicant briefly discussed storm drainage associated with the subdivision, a storm drainage plan was not submitted with the subdivision application. As a condition of approval, the applicant shall submit a Storm Drainage Plan associated with the subdivision which intends to install drywells. Interior private streets and sidewalks must meet design standards. Based on the applicant's submitted information, driveways will meet width and length

requirements, and the correct number of spaces will be provided for each residences. The C-R or R-2 zones do not require a minimum lot sizes, and the applicant states that lot sizes range from 1,661 square feet to 3,544 square feet. Lot width of 20 feet will be met, and lot averaging is not necessary.

A revised tentative subdivision plan has been submitted which delineates 38 lots within the subdivision. As previously mentioned, S. Ivy Street is under Clackamas County jurisdiction, and comments from the County stated that access to S. Ivy Street is not permitted because access must be within 400 feet of the intersection, and the parcel frontage extends only 342 feet along the roadway frontage. Minimum access requirements are intended to protect the public health, safety and general welfare and provide for both vehicular and pedestrian needs. Subsequently, the proposed subdivision is allowed only one access onto SE 13th Avenue as discussed above. As a condition of approval, the applicant shall submit a revised tentative plat that delineates a total of 30 lots within the subdivision and designs a single access onto SE 13th Avenue and one gated, "grasscrete" surfaced emergency exist onto S. Ivy Street with a mountable curb and driveway drop as noted in the City Engineer's email dated April 30, 2018.

The applicant must construct street improvements as required by Clackamas County for S. Ivy Street and to Canby Public Works standards along SE 13th Avenue, as stated in comments that are listed as conditions of approval.

The applicant shall construct DEQ approved drywells if required within the subdivision.

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

Park SDC fees will be required for future lots developed on the property.

The applicant shall pay 2.0% of the contract cost of all public improvements at the time of construction plan approval before site improvements begin. In addition, a Site Plan Development Engineering Plan review fee in accordance with the City fee schedule is due prior to obtaining a release letter for issuance of building permits.

Staff has reviewed the applicant's narrative and submitted material and finds that this subdivision application conforms to the applicable review criteria and standards, subject to the conditions of approval noted in *Section IV* of the staff report.

16.89 Application and Review Procedures

16.89.020 Description and Summary of Processes

All land use and development applications shall be decided by using the procedures contained in this Chapter. Specific procedures for each type of permit are contained in

Sections 16.89.030 through 16.89.060. The procedure type assigned to each permit governs the decision-making process for that permit. Additional requirements may be found in the individual chapters governing each permit type. The four types of procedure are described below. Table 16.89.020 lists the City's land use and development applications and their required procedures.

C. Type III Procedure (Quasi-Judicial/Legislative). Type III decisions are made by the Planning Commission after a public hearing, with appeals reviewed by the City Council. Type III procedures generally use discretionary approval criteria.

Finding: **The proposed project is subject to a Type III Site and Design Review procedure along with a Conditional Use Permit to approve common wall dwellings in the C-R zone, and a Planned Unit Development to reduce the rear yard setback and reduce the minimum density standard, and a subdivision to create 38 lots on 2.59 acres. The required land use application process has been followed. A pre-application meeting was held prior to the formal hearing, and the neighborhood meeting was conducted by the applicant. Meeting notes for the meetings are included with the applicant submittal. The proposed project is subject to a Type III Site and Design Review procedure as set forth in Chapter 16.89 and subject to criteria and standards in the appropriate Sections of the CMC. Therefore, this proposal is subject to Planning Commission review and decision.**

16.89.050 Type III Decision

Findings: **Requirements under this section are included in the application materials. The Pre-application was held on December 13, 2017. The neighborhood meeting was held on May 15, 2018.**

16.120 Parks, Open Space, and Recreation Land

Findings: **The applicant should be aware of the application of a parks SDC fee prior to issuance of a building permit in lieu of public park land dedication with this development project. The applicant set aside a 6,156 square foot area for a private park. However, the area is too small to receive any park credit for SDC fees. Section 16.120.060(6) states that parkland must be a minimum of two acres in order to receive credit for park fees. The common open space/private park should be designated as a common tract to be maintained by the HOA. Details of the planned open areas shall be submitted either for Planning Commission review or at the time of final construction plan approval.**

Public Comments:

Public comments were received from nearby property owners and are included in the file for Planning Commission review. Comments received:

Hazel McGuire, Rick Brown, Patricia Swanson

Agency Comments:

Comments concerning the proposal were received from Curran-McLeod, Inc., the City Engineer, Clackamas County Engineering, and DirectLink. The City Engineer and Clackamas Engineering comments are listed as conditions of approval.

SECTION III STAFF CONCLUSION/RECOMMENDATION:

Staff concludes that the use is in conformance with the City's Comprehensive Plan and the Zoning Ordinance. Additionally, the relevant site and design standards and minimum acceptable compatibility scores are met, and the site can accommodate the proposed use. The public service and utility provision to the site is available or can be made available through future improvements. Staff recommends that the Planning Commission continue DR 18-03/CUP 18-03/PUD 18-01/SUB 18-02 to the next scheduled Planning Commission meeting in order for the applicant to provide **a revised site plan that delineates no more than 30 lots in the subdivision, instead of 38 lots, and separate parking spaces or areas reserved for guest parking as well as address imperious and building length criteria.**

Approval of this application is based on submitted application materials. Approval is strictly limited to the submitted proposal and is not extended to any other development of the property. Any modification of development plans not in conformance with the approval of application DR 18-03/CUP 18-03/PUD 18-01/SUB 18-02, including all conditions of approval, shall first require an approved modification in conformance with the relevant sections of the Canby Municipal Code.

SECTION IV CONDITIONS OF APPROVAL:

Conditions Unique to this Proposal

1. **Approval is conditional upon approval of Zone Change 18-03 (ZC 18-03) which changes the property from R-1 to C-R Zone.**

2. **The applicant shall submit a revised tentative plat that delineates a total of 30 lots within the subdivision and establishes a single access onto SE 13th Avenue and one gated, "grasscrete" surfaced emergency exist onto S. Ivy Street with a mountable curb and driveway drop as noted in the City Engineer's email dated April 30, 2018.**

3. The project must be in conformance with the applicable findings and suggestions outlined by the City Engineer in his memorandum dated June 25, 2018 unless otherwise specified by the Planning Commission.

4. The project must be in conformance with the applicable findings and suggestions outlined by Clackamas County Engineering in the memorandum dated December 13, 2017 unless otherwise specified by the Planning Commission. The conditions are as follows:

"1. The proposed 39-unit multi-family development is located on a property located at the southeast comer of SE 13th Street and S Ivy Street. SE 13th Street is under the jurisdiction of the City of Canby. S Ivy Street is under the jurisdiction of Clackamas County and is classified as a major arterial roadway. It appears the city has a single arterial roadway classification, indicating both SE 13th Street and S Ivy Street as arterial roads. However, Clackamas County designates S Ivy Street a major arterial. Access spacing standards on a major arterial restrict access within 400 feet of a signalized intersection. The project frontage is approximately 342 feet in length. Access on the S Ivy street frontage will not be permitted for the proposed development. If required by the fire department, a gated emergency vehicle access is acceptable on S Ivy Street.

2. The minimum improvement on the S Ivy Street frontage includes right-of-way and paved width for a 3-lane arterial street section.

3. The applicant shall dedicate approximately 10 feet of right-of-way along the entire site frontage on S Ivy Street and verify by a professional survey that a 40-foot wide, one-half right-of-way width exists.

4. The applicant shall grant an 8-foot wide public easement for sign, slope and public utilities along the entire frontage of S Ivy Street.

5. The applicant shall design and construct improvements along the entire site frontage of S Ivy Street to arterial roadway standards, per Clackamas County Roadway Standards, Standard Drawing C140. These improvements shall consist of:

a. A one half-street improvement with a minimum paved with of 25 feet from the centerline of the right-of-way. The structural section shall be designed and constructed per Standard Drawing ClOO for an arterial roadway.

b. Inbound and outbound tapers shall be provided per Section 250.6.4 of the Clackamas County Roadway Standards.

c. Standard curb, or curb and gutter if curbline slope is less than one percent, with the curb face located 18 feet from the centerline of the right-of-way.

d. A 5-foot wide sidewalk behind a 5-foot wide landscape strip, including street trees shall be constructed along the entire site frontage. Where the sidewalk does not connect to sidewalk on adjacent property, the end of the sidewalk requires a concrete ADA compliant curb ramp, providing a transition from the new sidewalk to the edge of pavement.

e. Dual curb ramps shall be provide at the SE 13th Street and S Ivy Street intersection, constructed per Standard Drawing S910. The designer shall complete the county ADA Assessment Checklist and provide a copy with

the improvement plans. The county has adopted the following curb ramp design and construction standards:

Feature	Design Standard	Construction Standard
Ramp Slope	7.5%	8.33%
Ramp Cross Slope	1.5%	2.0%
Landing (turning space) Cross Slope	1.5%	2.0%

f. Storm drainage facilities in conformance with City of Canby Standards and *Clackamas County Roadway Standards* Chapter 4. Any surface water runoff from the site to the S Ivy Street right-of-way shall be detained outside of the right-of-way in conformance with *Clackamas Roadway Standards."*

5. A Demolition Permit from Clackamas County is required along with a Site Plan Review Application (Type I) from the City of Canby prior to demolition of the existing structure on the property.

6. The applicant must submit detailed elevations of the project that reveals how the proposal meets the design standards listed in Section 16.49.040.

Fees/Assurances:

7. All public improvements are normally installed prior to the recordation of the final plat. If the applicant wishes to forgo construction of any portion of the public improvements until after the recordation of the final plat, then the applicant shall provide the City with appropriate performance security (subdivision performance bond or cash escrow) in the amount of 110% of the cost of the remaining public improvements to be installed.

8. If the applicant chooses to provide a subdivision performance bond for some or all of the required public improvements, the applicant shall obtain a certificate from the city engineer that states:

a. The applicant has complied with the requirements for bonding or otherwise assured completion of required public improvements.
b. The total cost or estimate of the total cost for the development of the subdivision. This is to be accompanied by a final bid estimate of the subdivider's contractor, if there is a contractor engaged to perform the work, and the certificate of the total cost estimate must be approved by the city engineer. The applicant must guarantee or warranty all public improvement work with a 1 year subdivision maintenance bond in accordance with 16.64.070(P).

9. The applicant must pay the city Master Fee authorized Site Plan Engineering plan review fee and Public Improvement Engineering Plan review fee prior to beginning the construction of site improvements.

Streets, Signage & Striping:

10. The street improvement plans for SE 13th Avenue and S. Ivy Street frontage and the interior street shall conform to the TSP and Public Works standards as indicated by the city engineer and Clackamas County.

11. A roadway striping plan shall be submitted by the applicant and shall be approved by city engineer and by the Public Works street department prior to the construction of public improvements.

12. A roadway signage plan shall be submitted by the applicant and shall be approved by the city engineer and by the Public Works street department prior to the construction of public improvements.

13. The applicant shall be responsible for installing all required street signage and striping at the time of construction of public improvements, unless other arrangements are agreed to by the City.

14. The private streets shall be designated as a common tract for street and sidewalk provision to be cared for and maintained by the HOA.

Sewer:

15. The applicant shall submit documentation of DEQ approval of the sewer plans to the City Engineer prior to the construction of this public improvement.

Stormwater:

16. The applicant shall submit a Storm Drainage Plan associated with the subdivision. Stormwater systems shall be designed in compliance with the Canby Public Works Design Standards as determined by the City Engineer.

Grading/Erosion Control:

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

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

Final plat conditions:

General Final Plat Conditions:

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

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

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

22. All "as-builts" of public improvements, including: curbing and sidewalks; planter strips; streets; street lighting; street signage; street striping; storm; sewer; electric; water/fire hydrants; cable; underground telephone lines; CATV lines; and natural gas lines, shall be filed at the Canby Public Works and the Canby Planning Department within sixty days of the completion of improvements and prior to the recordation of the final plat.

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

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

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

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

Dedications

27. The applicant shall show on the final plat any appropriate R.O.W. width dedications required on SE 13th Avenue and S. Ivy Street for the full length of the subject property.

Easements

28. A 12 foot utility easement along all of the lot's street frontages shall be noted on the final plat. This easement may be combined with other easements and shall be measured from the property boundary.

29. Sidewalk easements are required along the frontage of the newly created private lots.

Street Trees

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

internal streets and the adjacent side of external streets or as otherwise designated on an approved Street Tree Plan. A twelve foot temporary street tree easement along all lot street frontages shall be noted on the final plat.

Monumentation/Survey Accuracy Conditions

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

Residential Building Permits Conditions:

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

33. The homebuilder shall apply for a City of Canby Site Plan Permit and County Building Permit for each home.

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

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

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

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

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

39. Sidewalks and planter strips shall be constructed by the homebuilder as shown on the approved tentative plat.

40. All usual system development fees shall be collected with each home within this development.

Procedural Conditions

Prior to Issuance of a Building Permit the following must be completed:

41. The design engineer shall submit to the City of Canby for review and approval at the time of final construction plan approval a storm drainage analysis and report applicable to the defined development area detailing how storm water disposal from

both the building and the parking areas is being handled. Any drainage plan shall conform to an acceptable methodology for meeting adopted storm drainage design standards as indicated in the Public Works design standards.

42. A Sediment and Erosion Control Permit will be required from the City prior to commencing site work.

43. Prior to the issuance of a building permit, the installation of public or private utilities, or any other site work other than rough site grading, construction plans must be approved and signed by the City and all other utility/service providers. A Pre-Construction Conference with sign-off on all final construction plans is required. The design, location, and planned installation of all roadway improvements and utilities including but not limited to water, electric, sanitary sewer, natural gas, telephone, storm water, cable television, and emergency service provisions is subject to approval by the appropriate utility/service provider. The City of Canby's preconstruction process procedures shall be followed.

44. Construction plans shall be designed and stamped by a Professional Engineer registered in the State of Oregon.

45. Clackamas County will provide structural, mechanical, grading, and review of Fire & Life Safety, Plumbing, and Electrical permits for this project.

46. The applicant shall confirm conformance with the light trespass provision of Figure 16.43.1 by including a detail of the bollard pathway lighting height, and that lighting lumen output of all fixtures meets the lighting standard of Table 16.43.070.

Prior to Occupancy of the Facility:

47. Prior to occupancy of the facility, all landscaping plant material indicated on the submitted landscape plan shall either be installed and irrigated with a fully automatic design/build irrigation system as proposed, or with sufficient security (bonding, escrow, etc.) pursuant to the provisions of CMC 16.49.100 (B).

Section V Attachments/Exhibits:

1. Application
2. Applicant narrative
3. Proposed Site Plan
4. Combined Plan Set
5. Pre-application Conference Summary
6. Traffic Impact Analysis/DKS review of TIA
7. Comments

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

LAND USE APPLICATION

Conditional Use Process Type III

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

☐ Applicant Name: Butch Busse — Phone: 503 572-6442
Address: P.O. Box 2375 — Email: butchb@hrhomes.net
City/State: Clackamas, OR — Zip: 97015

☐ Representative Name: MultiTech-Brian Grenz — Phone: 503-363-9227
Address: 1155 13th St — Email: bgrenz@mtengineering.net
City/State: Salem, OR — Zip: 97302

☐ Property Owner Name: Willamette Capital Investments, LLC — Phone: 503-407-8957
Signature: Pat Hanlin - Pat Hanlin, Member
Address: 576 Crabtree Circle — Email: phanlin@msn.com
City/State: Woodburn, Oregon — Zip: 97070

☐ Property Owner Name: Willamette Capital Investments, LLC — Phone: (503) 329-1713
Signature: Tim Tofte - Tim Tofte, Member
Address: PO Box [illegible] — Email: ttofte@vmgusa.com
City/State: Aurora, Oregon — Zip: 97002

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

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

PROPERTY& PROJECT INFORMATION:

1300 S. Ivy St, Canby, OR	2.59 Ac	01002480
Street Address or Location of Subject Property	Total Size of Property	Assessor Tax Lot Numbers
Existing Use, Structures, Other Improvements on Site	Zoning	Comp Plan Designation

Describe the Proposed Development or Use of Subject Property

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

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

LAND USE APPLICATION

SITE AND DESIGN REVIEW
General Type III

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

☐ Applicant Name: Butch Busse Phone: 503-572-6442
Address: P.O. Box 2375 Email: butchb@hrhomes.net
City/State: Clackamas, OR Zip: 97015

☐ Representative Name: MultiTech - Brian Grenz Phone: 503-363-9227
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SITE AND DESIGN REVIEW APPLICATION – TYPE III–INSTRUCTIONS

All required application submittals detailed below must also be submitted in electronic format on a CD, flash drive or via email. Required application submittals include the following:

Applicant Check	City Check	
☑	☐	One (1) copy of this application packet. The City may request further information at any time before deeming the application complete.
☑	☐	Payment of appropriate fees – cash or check only. Refer to the city's Master Fee Schedule for current fees. Checks should be made out to the *City of Canby*.
☑	☐	**Please submit one (1) electronic copy of mailing addresses in either an EXCEL SPREADSHEET or WORD DOCUMENT** for all property owners and all residents within 500 feet of the subject property. **If the address of a property owner is different from the address of a site, an address for each unit on the site must also be included and addressed to "Occupant."** A list of property owners may be obtained from a title insurance company or from the County Assessor's office.
☑	☐	One (1) copy of a written, narrative statement describing the proposed development and detailing how it conforms with the Municipal Code and to the approval criteria, including the applicable Design Review Matrix, and availability and adequacy of public facilities and services. ***Ask staff for applicable Municipal Code chapters and approval criteria.*** Applicable Code Criteria for this application includes: See Attached
☐	☐	Three (3) copies of a Traffic Impact Study (TIS), conducted or reviewed by a traffic engineer that is contracted by the City and paid for by the applicant (payment must be received by the City *before the traffic engineer will conduct or review a traffic impact study.* Ask staff to determine if a TIS is required.
☐	☐	One (1) copy in written format of the minutes of the neighborhood meeting as required by Municipal Code 16.89.020 and 16.89.070. The minutes shall include the date of the meeting and a list of attendees.
☑	☐	One (1) copy in written format of the minutes of the pre-application meeting
☑	☐	One copy of either the recorded plat or the recorded deeds or land sales contracts that demonstrates how and when legal property lines were established and where the boundaries of the legal lot(s) of record are located. If the property is a lot or parcel created by plat, a copy of the recorded plat may be obtained from the Clackamas County Surveyor's office. If the property is a legal lot of record created by recorded deed or land sales contract at a time when it was legal to configure property lines by deed or contract, then those recorded deeds may be obtained from the Clackamas County Office of the Clerk, or a Title Company can also assist you in researching and obtaining deeds.
☒	☐	If the development is located in a Hazard ("H") Overlay Zone, submit one (1) copy of an affidavit signed by a licensed professional engineer that the proposed development will not result in

significant impacts to fish, wildlife and open space resources of the community. If major site grading is proposed, or removal of any trees having trunks greater than six inches in diameter is proposed, then submit one (1) copy of a grading plan and/or tree-cutting plan.

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

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

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

- ☐ Sign Plan.
  - ☐ Location and profile drawings of all proposed exterior signage.
- ☐ Color and Materials Plan.
  - ☐ Colors and materials proposed for all buildings and other significant structures.

☑ ☐ One (1) copy of a completed landscaping calculation form (see page 5)

☑ ☐ One (1) copy of a completed Design Review Matrix (see page 6)

SITE AND DESIGN REVIEW APPLICATION: LANDSCAPING CALCULATION FORM

Site Areas

1. Building area	37,013 sq. ft	***- Square footage of building footprints***
2. Parking/hardscape	41,594 sq. ft	***- Square footage of all sidewalks, parking, & maneuvering areas***
3. Landscaped area	33,390 sq. ft	***- Square footage of all landscaped areas***
4. Total developed area	111,997 sq. ft	***- Add lines 1, 2 and 3***
5. Undeveloped area	0	***- Square footage of any part of the site to be left undeveloped.***
6. Total site area	111,997 sq. ft	***- Total square footage of site***

Required Site Landscaping (Code 16.49.080)

7. Percent of landscaping required in Zoning District	15 - 30%	***- Fill in the Appropriate Percentage:*** *R-1, R-1.5, R-2 Zones: 30%; C-2, C-M, C-R, M-1, M-2 Zones: 15%; C-1 Zone: 7.5%*
8. Required minimum square footage of landscaping	16,800 sq. ft to 33,600 sq ft	***- Multiply line 4 and line 7***
9. Proposed square footage of landscaping	33,390 sq. ft	***- Fill in value from line 3***

Required Landscaping within a Parking Lot (Code 16.49.120(4))

Note: This section and the next apply only to projects with more than 10 parking spaces or 3,500 square feet of parking area

NA

10. Zone		***- Fill in the Appropriate Zone and Percentage:*** *C-1 Zone: 5%; Core Commercial sub-area of the Downtown Canby Overlay: 10%, except for parking lots with 10 or more spaces and two or more drive aisles: 50 square feet per parking space; All other zones: 15%.*
11. Percent of required landscaping		
12. Area of parking lot & hardscape		*- Fill in area of parking and maneuvering areas plus all paved surface within ten (10) feet of those areas.*
13. Number of vehicle parking spaces		*- For Core Commercial sub-area in the Downtown Canby Overlay only, fill in the total # of parking spaces on-site.*
14. Required square footage of landscaping within 10 feet of parking lot		*- Multiply area of parking lot (line 12) by percent of required landscaping (line 11) -OR- for the CC sub-area in the Downtown Canby Overlay multiply line 13 by 50 square feet.*
15. Proposed square footage of Landscaping within 10 feet of parking lot		*- Calculate the amount of landscaping proposed within 10 feet of all parking and maneuvering areas.*

SITE AND DESIGN REVIEW APPLICATION: DESIGN REVIEW MATRIX

Applicants: Please circle the applicable point column to your project and compute the total and percentages at the end of the table.

Table 16.49.040 Site Design Review Menu

As part of Site and Design Review, the following menu shall be used as part of the review. In order to "pass" this table 60% of total possible points shall be earned, 10% of the total possible points must be from LID elements

Design Criteria	Possible Points				
Parking	**0**	**1**	**2**	**3**	**4**
Screening of parking and/or loading facilities from public right-of-way	Not screened	Partially screened	Fully screened	-	-
Parking lot lighting provided	No	Yes	-	-	-
Parking location (behind building is best)	Front	Side	Behind	-	-
Number of parking spaces provided (% of minimum required)	>120%	101-120%	100%	-	-
Screening of Storage Areas and Utility Boxes	**0**	**1**	**2**	**3**	**4**
Trash storage is screened from view by solid wood fence, masonry wall or landscaping.	No	Yes	-	-	-
Trash storage is located away from adjacent property lines.	0 - 10 feet from adjacent property	11 - 25 feet from adjacent property	>25 feet from adjacent property	-	-
Utility equipment, including rooftop equipment, is screened from view.	Not screened	Partially screened	Fully screened	-	-
Access	**0**	**1**	**2**	**3**	**4**
Distance of access to nearest intersection.	≤70 feet	71 - 100 feet	>100 feet	-	-
Pedestrian walkways from public street/sidewalks to building entrances.	One entrance connected.	-	Walkways connecting all public streets/ sidewalks to building entrances.	-	-
Pedestrian walkways from parking lot to building entrance.	No walkways	Walkway next to building only	Walkways connecting all parking areas to building entrances		-

Tree Retention	0	1	2	3	4
Design Criteria	**Possible Points**				
Percentage of trees retained	<10%	10-50%	51-75%	>75%	-
Replacement of trees removed	<50%	≥50%	-	-	-
Signs	**0**	**1**	**2**	**3**	**4**
Dimensional size of sign (% of maximum permitted)	>75%	50-75%	<50%	-	-
Similarity of sign color to building color	Not similar	Somewhat similar	Similar	-	-
Pole sign used	Yes	No	-	-	-
Building Appearance	**0**	**1**	**2**	**3**	**4**
Style (similar to surroundings)	Not similar	Somewhat similar (1 or 2 points possible depending on level of similarity)		-	-
Color (subdued and similar to surroundings is better)	Neither	Similar or subdued	Both	-	-
Material (concrete, wood and brick are best)	Either 1 or 2 points may assigned at the discretion of the Site and Design Review Board				
Size of building (smaller is better)	>20,000 square feet	≤20,000 square feet	-	-	-
Provision of public art (i.e. murals, statues, fountains, decorative bike racks, etc.)	No	-	-	-	Yes
Landscaping	**0**	**1**	**2**	**3**	**4**
Number of non-required trees provided	-	At least one tree per 500 square feet of landscaping.	-	-	-
Amount of grass (less grass is better) (% of total landscaped area)	>50%	25-50%	<25%	-	-
Low Impact Development (LID)	**0**	**1**	**2**	**3**	**4**
Use of pervious paving materials (% of total paved area)	<10%	-	10-50%	51-75%	>75%
Provision of park or open space area	None	-	Open space (Generally not for public use)	-	Park (public or privately owned for public use)

Design Criteria	Possible Points				
Use of drought tolerant species in landscaping (% of total plants)	<25% drought tolerant	-	25-50% drought tolerant	51-75% drought tolerant	>75% drought tolerant
Provision of additional interior parking lot landscaping (% of minimum required)	100%	101-110%	111-120%	>120%	-
Provision of an eco-roof or rooftop garden (% of total roof area)	<10%	-	-	10-50%	>50%
Parking integrated within building footprint (below-grade, structured parking, or tuck-under parking) (% of total on-site parking)	<10%	-	-	10-50%	>50%
Disconnecting downspouts from city stormwater facilities	None	Some downspouts disconnected	All downspouts disconnected	-	-
Shared parking with adjacent uses or public parking structure (% of total required parking spaces)	None	<50%	≥50%	-	-
Provision of rain gardens/bioretention areas for stormwater runoff (% of total landscaped area)	None	-	10-50%	51-75%	>75%
	Total Possible Points = 71, 60%=42.6 points, 10%=7.1 points				

Total Points Earned: 26 to 28 (42.6 points required for 60%)

Total LID Points Earned: 10 (7.1 required for 10%)

Parking Lot Tree Calculation

16. Number of parking spaces		*- Total number of vehicle parking spaces*
17. Area of parking lot & hardscape		*- Area from line 12*
18. Number of parking spaces (line 16) divided by 8		*- Round **up** to the nearest whole number*
19. Area of parking lot area (line 17) divided by 2,800		*- Round **up** to the nearest whole number*
20. Number of required trees in parking lot		*- Fill in the **larger** of row 18 and row 19*
21. Number of trees provided within 10 feet of parking lot		*- Fill in the number of proposed trees within 10 feet of parking and maneuvering areas.*

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

LAND USE APPLICATION

SUBDIVISION
Process Type III

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

☐ Applicant Name: Butch Busse Phone: 503-572-6442
Address: P.O. Box 2375 Email: butchb@hrhomes.net
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STAFF USE ONLY				
DR18-03/ PUD 18-01 SUB 18-02 CUP 18-03				
FILE #	DATE RECEIVED	RECEIVED BY	RECEIPT #	DATE APP COMPLETE

Canby Townhomes

Site and Design Review

Site:

The subject property is located at 1300 S Ivy Street (41E04DA/Tax Lot 4800). The subject property is about 2.59 acres in size and are zoned C-R. The applicant is proposing to develop the site with 38 townhomes. Townhomes (single family dwellings having common wall construction) are permitted with Conditional Use approval under 16.24.020(B) in the C-R zone.

Vicinity Information:

There is an existing single-family dwelling and shed on the time that will be removed prior to development. The surrounding properties are fully developed.

North: Across 13th Avenue, an existing adult center
East: Existing single-family dwellings
South: Existing single-family dwellings
West: Across Ivy Street, existing attached single-family dwellings

Proposal:

The applicant is proposing to develop 38 townhomes on the subject property.

Canby 16.49-Site and Design Review Criteria

Site Plan Review approval will be granted if the review body finds that the application meets all of the following criteria that are applicable to the proposed development.

B. In review of a Type III Site and Design Review Application, the Board shall, in exercising or performing its powers, duties or functions, determine whether there is compliance with the following:

1. ***The proposed site development, including the site plan, architecture, landscaping and graphic design, is in conformance with the standards of this and other applicable city ordinances insofar as the location, height and appearance of the proposed development are involved; and***

Findings:

Minimum Density: The minimum density within the R-2 zone is 14 units per acre. The subject property is 2.59 acres in size, with lots ranging in size from 1,661 to 4,864 square feet (including access easement) in size. Therefore, all proposed lots require a minimum of 1 unit per lot. This criteria will be met with the development of a townhome on each lot. Therefore, this criteria has been met. See attached site plans.

Width and Frontage: Per 16.20.030B, the minimum width requirement is 20 feet. All lots have a minimum lot width of 22 to 28 feet. Therefore, this criteria has been met.

Yard Requirements:

Front yard setback:	20.5 to 23.71-foot setbacks
Side yard setback:	4.44 to 20-foot setbacks
Rear yard setback:	
East Property Line-	14.95 to 15-foot setbacks
South Property Line-	15 to 15.55-foot setbacks
West Property Line-	20-foot setbacks (adjacent Ivy Street)
North Property Line-	20-foot setbacks (adjacent 13th Street)

Therefore, this criteria has been met.

Building Height: The maximum building height allowed is 35 feet. All buildings are 32.1 feet in height.

Therefore, this criteria has been met.

Common Open Space/Recreational Space: The proposed development shall provide 15% of open space/recreation space. Therefore, 16,800 square feet of landscaped recreation space shall be provided on the site.

The applicant has provided landscape plans. All open space/common and private open space areas will be landscaped. Approximately 33,390 square feet of total common open space throughout the site is landscaped. The landscape plans identify street trees and landscaped areas. Therefore, 30% of the site is landscaped area. This does include yards within the individual lots.

Therefore, this criteria has been met.

2. The proposed design of the development is compatible with the design of other developments in the same general vicinity; and

Findings:

The proposal is for a 38-townhome subdivision/planned unit development development. Building height will comply with code.

Landscaping and screening will enhance the privacy of the development and provide a separation between the proposed development and existing surrounding uses. The site plan illustrates the amount of landscaping and hard-surfaced areas that are proposed. All common open space areas within the developed area will be landscaped. As indicated on the site plan, there will be 33,390 square feet of landscaped area throughout that portion of the site being developed. Therefore, 30% of the developed area will be landscaped.

There are existing attached and detached single-family dwellings surrounding the subject property. The following design standards shall be incorporated into the design of multiple family housing to create compatibility of nearby development.

Setbacks: All buildings on the site are 2-stories in height. All setbacks to property lines are met as shown on the tentative plan. Setbacks are shown on the tentative plan.

North: 20-foot setbacks; Across 13th Avenue, an existing adult center
East: 15-foot setbacks; Existing single-family dwellings
South: 15-foot setbacks; Existing single-family dwellings
West: 20-foot setbacks; Across Ivy Street, existing attached single-family dwellings

Therefore, this criterion has been met.

3. ***The location, design, size, color and materials of the exterior of all structures and signs are compatible with the proposed development and appropriate to the design character of other structures in the same vicinity.***

Findings:

These standards are intended to promote functional design and building details that contribute to a high-quality living environment for residents and enhance compatibility with the neighborhood.

The building design does not have long flat walls or roof lines. The buildings will have 4-foot off-sets that break up the front of the buildings and the roof lines. Balconies (decks) and dormers are incorporated in the building design to add some visual element to the buildings.
All external stairways are recessed into the building. Therefore, physically and visually incorporating them into the buildings architecture design.

Therefore, the design of the buildings and materials uses will contribute positively to a sense of neighborhood and to the overall streetscape by carefully relating building mass, materials, design, landscaping, entries and yards to public streets. Therefore, this criterion has been met.

4. ***The proposed development incorporates the use of LID best management practices whenever feasible based on site and soil conditions. LID best management practices include, but are not limited to, minimizing impervious surfaces, designing on-site LID storm water management facilities, and retaining native vegetation.***

Findings:

The City requires that all new development extend and connect to the public sewer and water when service is available. The applicant's improvement plans identifying the required and needed connections.

The City has adopted codes regulating installation, extension and development of public facilities for streets, water, sewer and storm drainage facilities, and public utility easements. The developer is responsible for the cost of the extension of improved facilities necessary to serve the site. Internal development of public or private facilities necessary to serve individual units will occur at the building permit stage. Compliance with building code requirements satisfies this criterion.

If storm water quality and quantity are required for this development. An LID (low impact development) Storm water technique will be used to mitigate the increase in pollutants contributed from development. This system may also be used to provide storage and water quantity control. The exact system will be determined at the time of design. Any proposed technique will meet City Storm Water Management standards in means and methods to provide all aspects of Storm water management.

In conclusion, the Tentative Plat layout and the property location allow the proposed subdivision to efficiently and conveniently connect to public utilities. The proposed public utilities facilities will conform to the requirements of the Development Code.

5. The Board shall, in making its determination of compliance with this Ordinances, shall use the matrix in Table 16.49.040 to determine compatibility unless this matrix is superseded by another matrix applicable to a specific zone or zones under this title. An application is considered to be compatible with the standards of Table 16.49.040 if the following conditions are met:

> ***a. The development accumulates a minimum of 60 percent of the total possible number of points from the list of design criteria in Table 16.49.040; and***
>
> ***b. At least 10 percent of the points used to comply with (a) above must be from the list of LID Elements in Table 16.49.040.***

Findings: The proposed development is for a 38-lot townhome development. Therefore, some of Design Review elements and LID elements do not apply.

Parking Total=5 Points
Screening of Storage=3 Points
(trash storage will be provided for each individual unit and storage away from the property lines either behind landscaping or a fence/any equipment will be screened from view)
Access=5 Points
Tree Retention=2 Points
(there are 4 trees located on the property with 2 proposed for removal/trees will be planted per the landscape plans)
Signs=4 Points
(all signs for the development will obtain building permit approval and will meet the size and color requirements per the Code)
Building Appearance=5 to 7 Points
(balconies (decks) and dormers are incorporated in the building design to add some visual element to the buildings. Varied materials and textures are being used on the building facade. The applicant has provided building elevations to show how this is being complied with. The materials used on the front, rear, and sides of the apartments are the same; shake siding, trim board, lap siding, and stone around the pillars)
Landscaping=2 Points
LID Elements=10 Points

Total=36 to 38 Points

Site and Design Review:

Public Utilities

Findings: The site plan indicates the location of public water; sewer and storm drain lines in the street. Natural gas, telephone and electrical services are located within the public right-of-way.

The extension of water facilities necessary to provide fire service is required for development. Building addressing is required to facilitate public safety access and addresses will be assigned by the City with building permit applications. Hard-surfaced access is proposed to comply with code that requires a clear and unobstructed access. Hydrants, hydrant location, fire sprinkler systems and type of construction will be reviewed by the Fire Department when building permit applications or construction plans are submitted to the City to determine the level of water service needed. The developer is responsible for the cost of development and installation to building and fire code specifications.

Private utilities will be provided with under grounding of electrical, gas, telephone and cable lines into the site.

The City has adopted codes regulating installation, extension and development of public facilities for streets, water, sewer and storm drainage facilities, and public utility easements. The developer is responsible for the cost of extension of improved facilities necessary to serve the site. Internal development of public or private facilities necessary to serve individual units will occur at the building permit stage. Compliance with building code requirements satisfies this criterion.

Transportation

Findings: The major transportation network is in place. The subject property has frontage on Ivy Street and 13th Street. The residential development proposed will have direct access onto both Ivy Street to the west and 13th Street to the north.

The development will have adequate access to and from the already existing street system that is in place due to an existing developed neighborhood. The internal street within the proposed development will be developed to private street standards.

The subject property is located in a developing area where improved streets and sidewalks continue as required by the City. Improved access is required by code. Approval does not adversely affect the safe and healthful development of any adjoining land or access thereto. The City's adopted facility plans and construction requirements are the basis for the provision of facilities and any conditions of approval imposed on the development. Review of required construction plans and construction according to the approval provides compliance with this

criterion. Thus, the transportation system can safely accommodate the proposed 132-unit apartment development.

Parking

Findings: The proposal is for 38-townhomes within a PUD/SUB. Attached single family dwellings are required to have 2 vehicle parking spaces per dwellings (2 vehicle parking spacing on each lot provided for each dwelling). Therefore, the applicant is required to provide 76 on-site parking spaces. The development provides 81 parking spaces on-site.

There are additional parking spaces provided. These parking spaces are centrally located within the development, as shown on the site plan.

Bicycle parking spaces are not required for this type of development.

This type of development does not require a loading area.

Pedestrian Circulation:

Findings: The internal pedestrian circulation system consists of hard 5-foot wide surfaced sidewalks that provide easily identifiable and safe connections between the residential dwellings, parking, and open space areas. The sidewalks are raised above the surface of the travel lanes. Pedestrian crossings will make use of drop curbs to facilitate handicap access. This provides a clear separation between vehicles and pedestrians. Any pedestrian pathways that cross the driveways will be marked and a minimum of five feet wide. The pedestrian pathways will be lighted.

The proposed development provides safe and convenient bicycle and pedestrian access from within the development to adjacent residential areas and to neighborhood activity centers. The improved and unobstructed driveway provides emergency service access. There are no steep grades involved in the development of the subject property that would negatively impact access.

Canby Townhomes
Conditional Use

SITE:

The subject property is located at 1300 S Ivy Street (41E04DA/Tax Lot 4800). The subject property is about 2.59 acres in size and are zoned C-R. The applicant is proposing to develop the site with 38 townhomes. Townhomes (single family dwellings having common wall construction) are permitted with Conditional Use approval under 16.24.020(B) in the C-R zone.

VICINITY INFORMATION:

There is an existing single-family dwelling and shed on the time that will be removed prior to development. The surrounding properties are fully developed.

North: Across 13th Avenue, an existing adult center
East: Existing single-family dwellings
South: Existing single-family dwellings
West: Across Ivy Street, existing attached single-family dwellings

PROPOSAL:

The applicant is proposing to develop 38 townhomes on the subject property.

CONDITIONAL USE CRITIERIA:

A. The proposed use is consistent with the policies of the comprehensive plan.

The proposed development is consistent with the policies of the comprehensive plan. The applicable Policies of the Comprehensive Plan are addressed as follows:

The intent of the comprehensive plan is to project the goal of the most desirable pattern of land use in the area taking into account various factors such as the transportation system, location of public facilities, and the needs of the people which are important to the creation and maintenance of a healthful and pleasing urban environment. To ensure that the anticipated urban land use needs are met, the Plan map demonstrates a commitment that land for a wide variety of uses will be available at appropriate locations as needed.

Citizen Involvement Policies 1 and 2:

The City's adopted Comprehensive Plan Goals and Policies, and its adopted zone code, implement the Statewide Citizen Involvement Goal. This application will be reviewed according to the public review process established by the City of Canby. The City's Plan is acknowledged to be in compliance with this Policy. Notice of the proposal will be provided to property owners and public agencies. The notice will identify the applicable criteria. A public hearing to consider the request will be held. Through the notification and public hearing process all interested parties are afforded the opportunity to review the application, comment on the proposal, attend the public hearing, and participate in the decision.

These procedures meet the requirements of the policies for citizen involvement in the land use planning process.

Land Use Element/Residential Land Policies 1, 2, 3, 5: The subject property will be developed with 38 townhomes. The subject property is surrounded by attached single family dwellings, detached single family dwellings, and an adult center. The proposed use is a compatible use with surrounding uses. The attached single-family dwellings help to maximum density on the site while minimize the need for urban sprawl, while also developing a site that has public facilities available. Therefore, meeting the goals and polices for Residential Land development.

Environmental Policies 1-R-B, 3-R, 4-R, 8-R:

The City's adopted Comprehensive Plan, Scenic and Historic Areas, Natural Resources and Hazards, Commercial, Industrial and Transportation Goals and Policies along with adopted facilities plans implement this Policy.

Development is required to meet applicable State and Federal requirements for air and water quality. The proposal to develop the site is reviewed by the City and any applicable outside agencies for impacts on environment and compliance to applicable standards and regulations. Development is required to meet applicable water, sewer, and storm drainage system requirements. Upon development, the City is responsible for assuring that wastewater discharges are treated to meet the applicable standards for environmental quality. Prior to development, the applicant will obtain all required State, Federal, and local permits.

The City has identified the process through which water; sewer and storm drainage will be supplied to the site as stated in previous meetings with the applicant.

The major impact to air quality in the vicinity is vehicle traffic along the boundary streets. The traffic generated from the site will be minor compared to the total volume of traffic in this area, and will not create a significant additional air quality impact. At this time, a Traffic Impact Analysis is not required for this level of development.

The proposed development will have no significant impact on the quality of the land. Considering the location of the site within the city, the availability of public facilities to provide water, sewage disposal and storm drainage services, and the surrounding transportation system, the proposal will have no significant impacts to the quality of the air, water or land. The City's adopted facility plans implement Goal 6.

The City's adopted Comprehensive Plan Open Space Policies implements the Statewide Recreation Needs Goal by encouraging conservation and identification of existing and needed park resources and funding mechanisms. The subject property will be developed as a PUD which will be required to provide on-site open space areas. These areas will provide recreational areas for the residents. At the time of development, the proposal will provide improved public pedestrian connections via hard-surfaced sidewalks the will connect to the existing pedestrian circulation.

Therefore, the proposal complies with these policies.

Transportation Policies 1, 2, 3, 4, 6:

The City's adopted Comprehensive Plan Transportation Goals and Policies implements the Statewide Transportation Goal by encouraging a safe, convenient and economic transportation system. The subject property is located along Ivy Street and 13th Street. The major streets are in place due to previous development. The County will be notified of the proposal and will provide comments regarding any county roads effected by this proposal.

The development of townhomes on this site is a safer and more convenient way to develop the site. The development will provide two driveways within and throughout the site. At this time, a Traffic Impact Analysis is not required for this level of development.

All improvements will be made as required by Code and any Conditions of Approval.

Therefore, these policies have been met.

Public Facilities Policies:

The City's adopted Comprehensive Plan, residential, Transportation Goal and Polices, and adopted Storm water and Water Master Plans implement the Statewide Public Facilities and Services Goal by requiring development to be served by public services. The proposal is for revitalized urban development in an area where future extensions of those services can be provided in the most feasible, efficient and economical manner. All necessary and appropriate public services and facilities essential for development will be provided to this property at levels that are adequate to serve the proposed use.

The City maintains an infrastructure of public services that includes sewer, water, and storm drainage facilities. The City will specify any needed changes to the existing service levels at the time building permits are requested.

In order to assure compliance and prior to building permits, the applicant will work with the Fire Department and all other required agencies.

Sidewalks are or will be provided throughout the site for pedestrian circulation. The location along a major transportation corridor facilitates vehicle access, bicycle and pedestrian access, provides significant opportunity to reduce vehicle miles traveled. The vehicle, bicycle, and pedestrian circulation systems will be designed to connect to the existing street and sidewalk systems.

The education district's master plan provides for growth in the district and has options to meet the demand. The education district reviews the population factors to determine planning, funding and locating new schools or providing additional facilities on the sites of existing schools.

Other private service providers supply garbage, telephone, television, postal and internet services as needed by the development. The required public services and facilities to serve new development will be determined by the City at the time development permits are requested. By providing adequate public facilities and services for the proposed use, the requirements of these policies are met.

Economic Policies:

The proposal will have a positive impact on the economy of the City of Canby. The Conditional Use will allow the underdeveloped property to be developed, which will create employment along with a housing type that is needed and will bring in tax money to the City.

The proposal will provide a location for residential uses. The subject property is currently underultized. The site will offer economic diversification because it will provide for the expansion of new residential. It will provide an opportunity to encourage hiring of local unemployed, skilled and unskilled local residents. The site is currently unproductive and returns little value to the City. Redevelopment contributes to the economic base of the urban area, which is consistent with the economic policies. Therefore, these policies have been met.

Housing Policies 2, 3:

This proposal will provide a needed housing type in this part of Canby. This will not be low income housing. These will be market value rental units.

The existing neighborhood consists of detached single-family housing and attached single-family dwellings. In order to provide an alternative housing pattern while being consistent with the neighborhood, the proposed development will provide a higher density of needed housing in this area. In order to maintain the character of the neighborhood, the site will be developed in compliance with required Design Standards and provide the required setbacks along property lines.

The City's adopted Comprehensive Plan, Residential, Transportation Goals and Policies and applicable adopted facilities plans implement the Statewide Housing Goal. Therefore, the Housing Policies have been met.

B. The characteristics of the site are suitable for the proposed use considering size, shape, design, location, topography, existence of improvements and natural features;

The proposed development benefits the public by permitting the site to be utilized in accordance with specific development standards that reflects the character of the existing neighborhood. The traffic impacts are minimal and the level of impacts for this development is so low it does not require a TIA (Traffic Impact Analysis) at this time. This proposal will also allow for the advantageous use of land that is currently serviced by public facilities. An 38-unit townhome development provides an excellent transition and a melding of the different types of housing in the area where there is existing well-established detached single family and attached single family housing.

The proposal will benefit the public by making use of vacant land for a low-impact development that will not affect the residential neighborhood. The proposed use will enhance an established neighborhood by developing buildings with compatible design.

The proposed buildings will only be 2-stories in height with more than adequate setbacks to provide a buffer from adjacent residential uses to the east and south. The building height and setbacks meet the standards set out in the Code. These standards are established in order to minimize impacts to adjacent uses. The building design, height, and setbacks will help minimize any impacts to the surrounding properties.

C. Public facilities and services are adequate to accommodate the proposed use.

The submitted plans show that the proposed buildings can be serviced by the infrastructure to support the development and will be designed to City standards.

Prior to construction of the site, the applicant will provide plans that identify all existing and proposed utilities. The plans will show how all required utilities will be connected to existing or relocated to provide services to the proposed development.

The applicant will obtain all required permits prior to construction.

D. The proposed use will not alter the character of the surrounding areas in a manner which substantially limits, or precludes the use of surrounding properties for the uses listed as permitted in the zone.

There is an existing single-family dwelling and shed on the time that will be removed prior to development. The surrounding properties are fully developed.

North: Across 13th Avenue, an existing adult center
East: Existing single-family dwellings
South: Existing single-family dwellings
West: Across Ivy Street, existing attached single-family dwellings

The townhomes (attached single family dwellings) will be compatible with the residential uses to the east, south, west and north. The townhomes will be required to go through Site Plan/Design Review, which requires open space and landscaping at a higher percent than what a detached single family development would be required to provide. Amenities like landscaped open space

will help with the visual appeal of this area and reduce impacts on the neighborhood. The design standards are in place to help ensure compatibly with adjacent uses.

The proposed development will provide a pedestrian circulation throughout the property and to the proposed and existing sidewalks. Therefore, increasing their livability as well.

<u>In Conclusion</u>: This proposed development takes an underutilized lot and will develop it with 38-townhomes that meet or exceed Code requirements. The development will create visually appealing buildings that add to the character of the neighborhood, while providing a needed housing type.

As shown above and on attached materials, the applicant's findings and site plan meet the Code requirements and therefore approval is warranted.

Canby Townhomes

Subdivision/Planned Unit Development

Site:

The subject property is located at 1300 S Ivy Street (41E04DA/Tax Lot 4800). The subject property is about 2.59 acres in size and are zoned C-R. The applicant is proposing to develop the site with 38 townhomes on 38-lots.

Vicinity Information:

There is an existing single-family dwelling and shed on the time that will be removed prior to development. The surrounding properties are fully developed.

North: Across 13th Avenue, R-1 zone; an existing adult center
East: R-1 zone; Existing single-family dwellings
South: R-1.5 zone; Existing single-family dwellings
West: R-1.5 zone; Across Ivy Street, existing attached single-family dwellings

Proposal:

The applicant is proposing to divide 2.59 acres into 38-lots for townhome development.

Chapter 16.20-R-2 Zone Review Criteria

Townhomes (single family dwellings having common wall construction) are permitted with Conditional Use approval under 16.24.020(B) in the C-R zone. Townhome development is subject to the development standards of the R-2 zone.

Development Standards

Minimum Density: The minimum density within the R-2 zone is 14 units per acre. The subject property is 2.59 acres in size, with lots ranging in size from 1,661 to 4,864 square feet (including access easement) in size. Therefore, all proposed lots require a minimum of 1 unit per lot. This criteria will be met with the development of a townhome on each lot. See attached site plans.

Width and Frontage: Per 16.20.030B, the minimum width requirement is 20 feet. All proposed lots are 22 to 28 feet in width. Therefore, meeting this requirement.

Yard Requirements:

Front yard setback: 20.5 to 23.71-foot setbacks
Side yard setback: 4.44 to 20-foot setbacks
Rear yard setback:
East Property Line- 14.95 to 15-foot setbacks
South Property Line- 15 to 15.55-foot setbacks
West Property Line- 20-foot setbacks (adjacent Ivy Street)
North Property Line- 20-foot setbacks (adjacent 13th Street)

Building Height: The maximum building height allowed is 35 feet. All buildings are 32.1 feet in height.

Therefore, this criteria has been met.

Common Open Space/Recreational Space: The proposed development shall provide 15% of open space/recreation space. Therefore, 16,800 square feet of landscaped recreation space shall be provided on the site.

The applicant has provided landscape plans. All open space/common and private open space areas will be landscaped. Approximately 33,390 square feet of total common open space throughout the site is landscaped. The landscape plans identify street trees and landscaped areas. Therefore, 30% of the site is landscaped area. This does include yards within the individual lots.

Chapter 16.64-Subdivsion Design Standards

All required materials have been submitted as part of our application packet showing utilities, streets, lots layout, circulation, and improvements:

Cover Sheet: Sheet-SDR1
Existing Conditions Plan: Sheet SDR2
Lot Layout Plan: Sheet SDR3
Site Plan/Preliminary Plan: SDR4
Grading Plans: Sheet-SDR5
Utility Plans: Sheet-SDR6
Landscape Plans: Sheets-L1.1, L1.2
Building Elevation/Floor Plans: Sheet A1.1

Streets:

All streets will be designed to and approved by the City to make sure they are in compliance with Code. All streets within the proposed PUD/SUB will be private streets that will access onto the public street system. See attached site plans.

Access:

The proposed subdivision/PUD will result in the creation of 38-lots. Vehicular access to the proposed lots will be taken from proposed internal streets onto 13th Street, along with access on Ivy Street. Private internal streets have been provided throughout the site. The internal streets will provide safe and efficient access to the lots and the existing street system, by providing direct access to the site and to existing public streets to the north and west.

Pedestrian and bicycle connections are provided by the existing network of sidewalks and streets. The design of pedestrian circulation systems shall provide clear and identifiable connections within the development and to adjacent uses and public streets/sidewalks.

The internal pedestrian circulation system consists of hard 5-foot wide surfaced sidewalks that provide easily identifiable and safe connections between the residential dwellings, parking, recreation areas, the existing sidewalk system. The pedestrian system connects the front entrances of the buildings to the proposed internal sidewalk system. The sidewalks are raised above the surface of the travel lanes. Pedestrian crossings will make use of drop curbs to facilitate handicap access. This provides a clear separation between vehicles and pedestrians. Any pedestrian pathways that cross the parking area or driveways will be raised and a minimum of five feet wide. The pedestrian pathways will be lighted.

Blocks:

Block lengths shall not exceed 400 feet in residential zones. There are no blocks with in the proposed development that exceed 400 feet in length. See attached site plans.

Easements:

There is an access easement located on Lot 13 that will provide access to the street system for Lots 11, 12, and 13. All easements including solar easements will be identified on the recorded subdivision plat and recorded property deeds.

Lots:

There are no minimum lot sizes in the R-2 zone. Lot requirements are determined by density as referenced in the Code:

> *"Minimum residential density: New development shall achieve a minimum density of 14 units per acre. Density is calculated by dividing the number of dwelling units by the property area in acres (minus area required for street right-of-way and public park/open space areas). Decimals are rounded to the nearest whole number. The Planning Commission may modify the density standard if it cannot be met due to existing lot dimensions, road patterns, or other site characteristics."*

The proposed lots range in size from 1,661 square feet to 3,544 (excluding the 1,320-square foot access easement) square feet in size. Therefore, all proposed lots require a minimum of 1 unit per lot.

The minimum lot width requirement is 20 feet in width. All proposed lots are 22 to 28 feet in width. Therefore, meeting this requirement.

This criteria will be met with the development of a townhome on each lot. See attached site plans.

Parks and Recreation:

As shown on the site plan, there is a 6,156-square foot open space area provided within the proposed SUB/PUD. The open space area will be landscaped and provide recreation area for the residents. See attached site plans.

Grading:

Grading plans have been provided as part of this packet.

Improvements:

Public Facilities-

Transportation: All internal streets within the PUD are private streets. These streets, as shown on the site plans, have been designed to City standards.

Circulation and connectivity our shown on the site plan. The internal streets provided circulation throughout the proposed development and to the existing street system.

The Public Works Department is responsible for review and approving public facility construction and installation. No under improved streets are proposed. Sidewalk installation is generally required when building permit applications are submitted to the City. Utilities are required to be underground. Engineered construction plans will be required for final plat approval.

Public Use Areas: The proposed development provides a recreation landscaped open space areas throughout the site. The recreation open space areas are in convenient and safe areas for the residents via proposed sidewalks. The proposed development provides approximately 6,156 square feet of total common open space throughout the site, along with a 1,562-square foot paved patio area for all residents. See the site plan.

All open space and recreation areas on the site will be maintained by an HOA.

Storm Drainage: The storm water system will be designed to meet the requirements of water quality and water quantity requirements.

Water quality facilities as required and will be incorporated within the catch basin/storm manhole infrastructure prior to discharge.

Design of the storm drains will include provisions to adequately control runoff from impervious and pervious areas within and upstream of the development without exceeding capacities of the available facilities. Underground storm detention systems will be constructed within the street rights-of-way.

Plans identity the existing and proposed utilities have been provided in our submittal packet. Plans showing storm drainage have been provided in our submittal packet.

Utilities: Utility plans have been provided as part of the submittal packet.

Grading: Grading plans have been provided as part of the submittal packet.

Parking:

The proposal is for 38-townhomes within a PUD/SUB. Attached single family dwellings are required to have 2 vehicle parking spaces per dwellings (2 vehicle parking spacing on each lot provided for each dwelling). Therefore, the applicant is required to provide 76 on-site parking spaces. The development provides 81 parking spaces on-site.

There are additional parking spaces provided. These parking spaces are centrally located within the development, as shown on the site plan.

Bicycle parking spaces are not required for this type of development.

This type of development does not require a loading area.

Lighting:

Since the development is not a multi-family development, a lighting plan has not been provided. Street lights will be provided along the internal street system and within parking areas.

Section 16.76 PUD Requirements:

The proposed subdivision has been designed to meet the requirements of the zone and Code. The PUD gives flexible to some of these standards.

Minimum Requirements A and B

A. Open Space:

The code requires that PUD developments provide a minimum of 15% open space.

The proposed development provides a 6,156 square foot landscaped common open space area located in the northwest corner of the site, a 1,562 square foot paved patio area centrally located, and 33,390 square feet of landscaped areas throughout the site (this includes common and private open space areas). All open space areas are in convenient and safe areas for the residents via proposed sidewalks. The proposed development provides approximately 33,390 square feet of total open space throughout the site. Therefore, 30% open space on the site. See the site plan.

B. Lot Size:

There are no minimum lot sizes in the R-2 zone. Lot requirements are determined by density as referenced in the Code:

> *"Minimum residential density: New development shall achieve a minimum density of 14 units per acre. Density is calculated by dividing the number of dwelling units by the*

property area in acres (minus area required for street right-of-way and public park/open space areas). Decimals are rounded to the nearest whole number. The Planning Commission may modify the density standard if it cannot be met due to existing lot dimensions, road patterns, or other site characteristics."

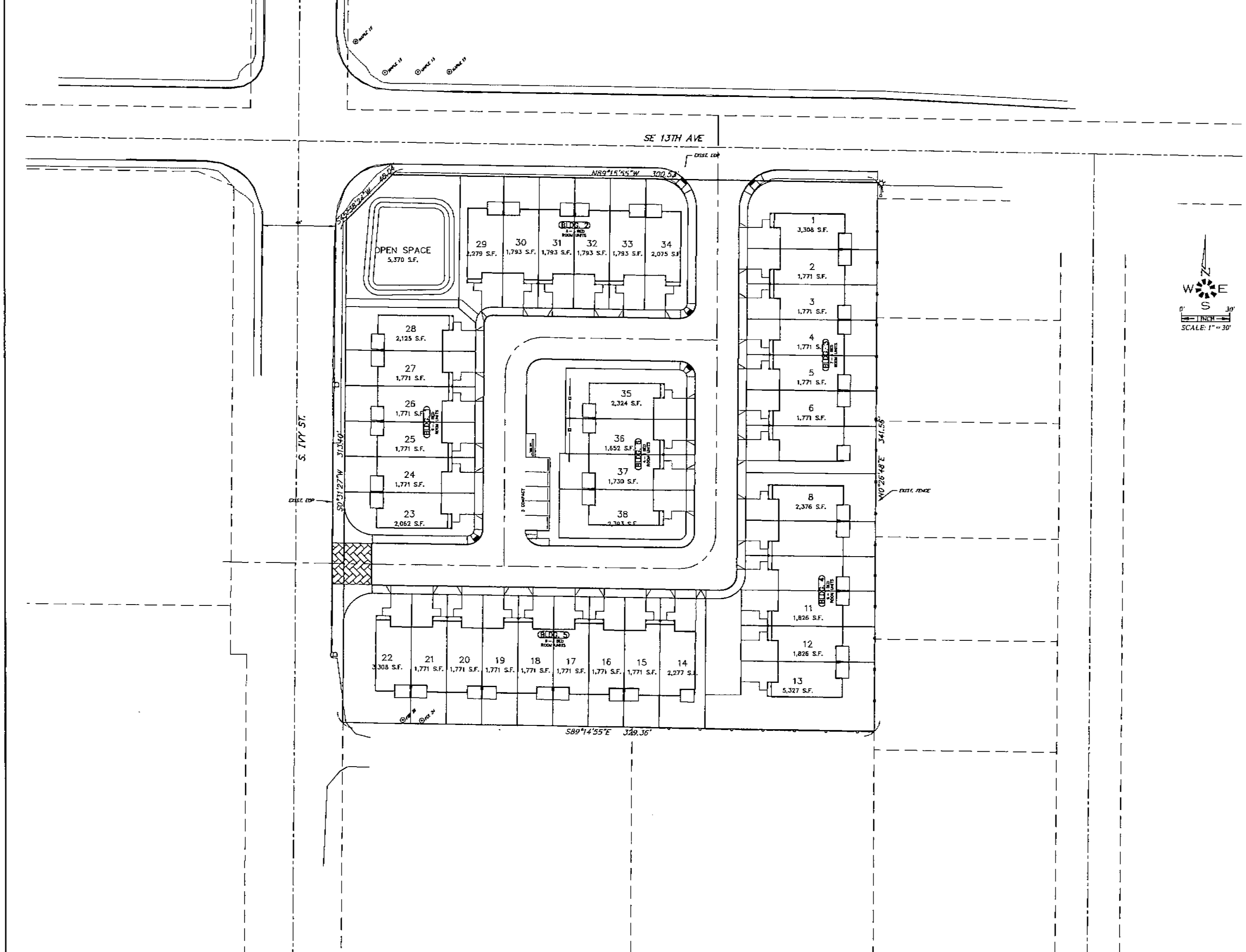
The proposed lots range in size from 1,661 square feet to 3,544 (excluding the 1,320-square foot access easement) square feet in size. Therefore, all proposed lots require a minimum of 1 unit per lot.

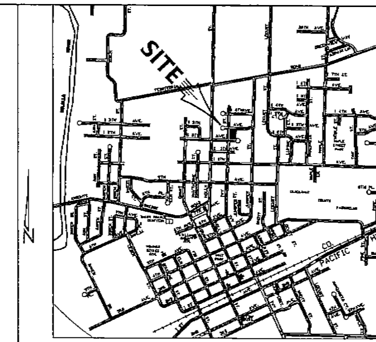
The minimum lot width requirement is 20 feet in width. All proposed lots are 22 to 28 feet in width. Therefore, meeting this requirement.

This criteria will be met with the development of a townhome on each lot. See attached site plans.

IVY STREET TOWNHOMES

SEC. 33, T. 3 S., R. 1 E., W.M.
CITY OF CANBY
CLACKAMAS COUNTY, OREGON





VICINITY MAP

Owner / Developer:

H&R PROPERTIES, LLC
PO BOX 2375
CLACKAMAS, OREGON 97015

SHEET INDEX

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A1.1	FLOOR PLANS AND ELEVATIONS
LS01	SCHEMATIC LANDSCAPE PLAN
LS02	SCHEMATIC LANDSCAPE PLAN

ABBREVIATIONS

A.C.	ASPHALTIC CONCRETE	L.P.	LIGHT POLE
ACMP	ALUMINIZED CMP	M	METER, MAIN
ASSY.	ASSEMBLY	M.H.	MANHOLE
B.O.	BLOW OFF	MTL.	METAL
B.F.V.	BUTTERFLY VALVE	O.H.	OVERHEAD
C & G	CURB & GUTTER	PC	POINT OF CURVE
CATV	CABLE TELEVISION	PCC	POINT OF CONTINUING CURVE
C.B.	CATCH BASIN	PED.	PEDESTAL
C.B.C.O.	CATCH BASIN CLEANOUT	PRC	POINT OF REVERSE CURVE
C.B.I.	CATCH BASIN INLET	PROP.	PROPOSED
C.L.	CENTERLINE	PT	POINT OF TANGENCY
CMP	CORRUGATED METAL PIPE	PUB.	PUBLIC
C.O.	CLEANOUT	PUE	PUBLIC UTILITY EASMT.
CONC.	CONCRETE	PVC	POLYVINYL CHLORIDE
CONST.	CONSTRUCT	PVT.	PRIVATE
D.I.	DUCTILE IRON	P.P.	POWER POLE
DIA.	DIAMETER	P.L.	PROPERTY LINE
DWG	DRAWING	R	RADIUS
EASMT.	EASEMENT	R-	RIM
E.G.	EXIST. GRADE / GROUND	RD	ROOF DRAIN
EOP, E.P.	EDGE OF PAVEMENT	R.O.W.	RIGHT-OF-WAY
ELEC.	ELECTRIC	SAN.S. or S.S.	SANITARY SEWER
ELEV. or EL.	ELEVATION	S	SLOPE
EX. or EXIST.	EXISTING	STA.	STATION
FT.	FEET	STD.	STANDARD
F.F.	FINISH FLOOR	STL.	STEEL
F.G.	FINISH GRADE	STM.DRN. or S.D.	STORM DRAIN
F.H.	FIRE HYDRANT	SVC.	SERVICE
F.M.	FORCE MAIN	SW	SIDEWALK
GUT. or GTR.	GUTTER	T.C.	TOP OF CURB
G.V.	GATE VALVE	TEL.	TELEPHONE
IMP.	IMPROVEMENT	TYP.	TYPICAL
INST.	INSERT	U.G.	UNDERGROUND
INV. or I-	INVERT	VLT.	VAULT
L	LENGTH, LINE	W.M.	WATER MAIN

SYMBOLS

EXIST. PROP.

- BLOW OFF ASSY.
- CATCH BASIN
- CATCH BASIN CLEANOUT
- CATCH BASIN INLET
- CATV PED. / BOX
- CLEANOUT
- ELEC. PED. / BOX
- FIRE HYDRANT
- GAS LOCATION MARKER
- GAS VALVE
- MAIL BOX

EXIST. PROP.

- MANHOLE SAN. SEWER
- MANHOLE STORM DRAIN
- 2" DIA. C.O. / M.H.
- MANHOLE TELEPHONE
- MANHOLE WATER
- REDUCER / INCREASER
- TEL. PED. / BOX
- TRAFFIC PED. / BOX
- UTILITY / POWER POLE
- WATER METER
- WATER VALVE

- CABLE TELEVISION
- CENTERLINE
- DITCH C.L.
- ELECTRICAL LINE
- GAS MAIN
- TELEPHONE LINE
- SANITARY SEWER EXIST.
- SANITARY SEWER PROP.
- STORM DRAIN EXIST.
- STORM DRAIN PROP.
- WATER MAIN EXIST.
- WATER MAIN PROP.

MULTI/TECH
ENGINEERING SERVICES, INC.

COVER SHEET

IVY STREET TOWNHOMES

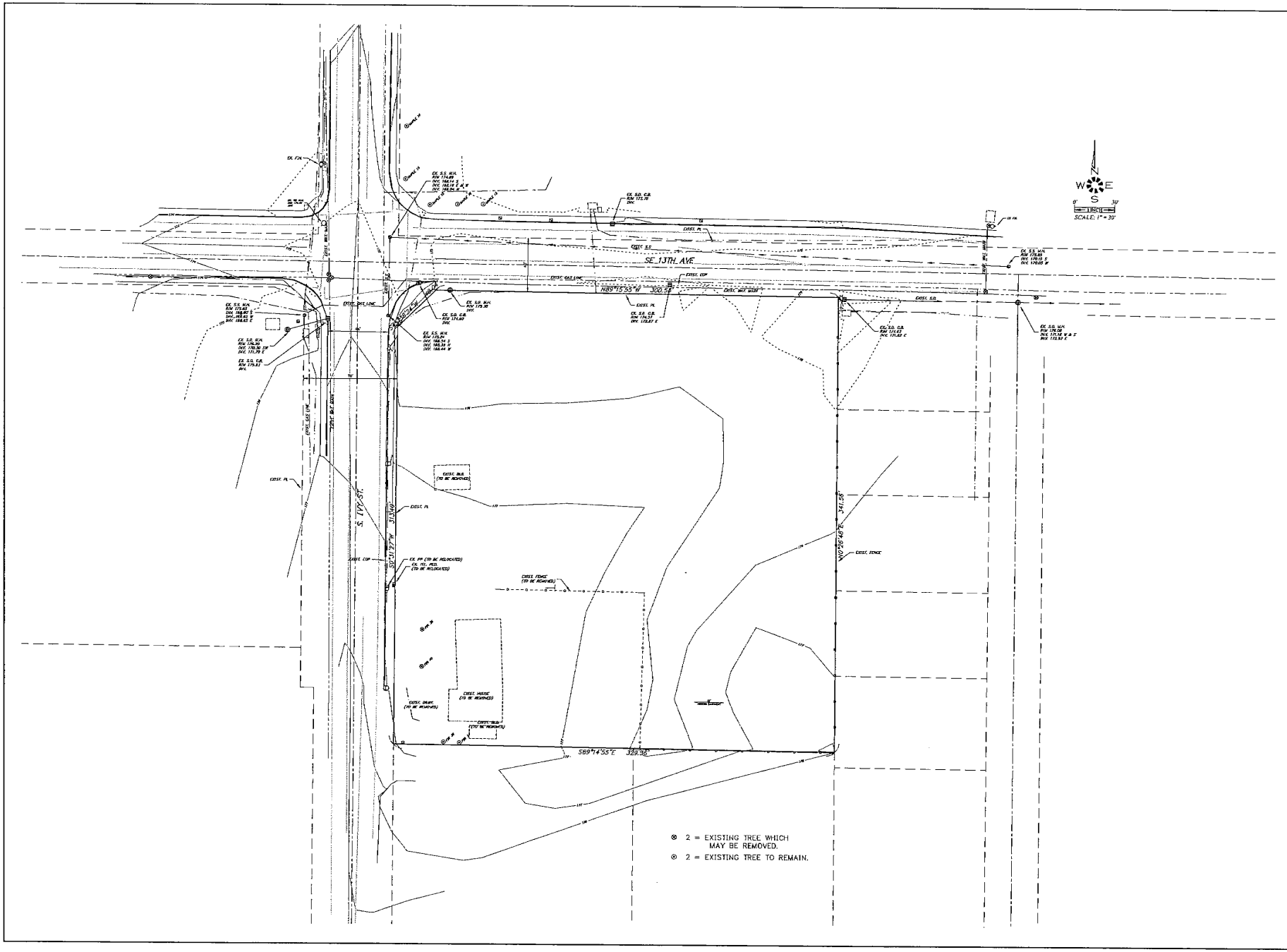
NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.
DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

Design: M.D.G.
Drawn: C.D.S.
Checked: B.M.G.
Date: MARCH 2018
Scale: AS SHOWN

REGISTERED PROFESSIONAL ENGINEER
OREGON
MARK D. GRENZ
EXPIRES: 06-30-2019

JOB # 6649

SDR1



MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13TH ST. S.E. SALEM, OR. 97302
PH. (503) 363-9227 FAX: (503) 364-1260
www.mtengineering.net office@mtengineering.net

EXISTING CONDITIONS PLAN

IVY STREET TOWNHOMES

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT PRIOR EXPRESS AUTHORIZATION FROM THE DESIGN ENGINEER.

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Date: MARCH 2019
Scale: AS SHOWN

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK B. SHELLEY
RENEWS: 06-30-2019

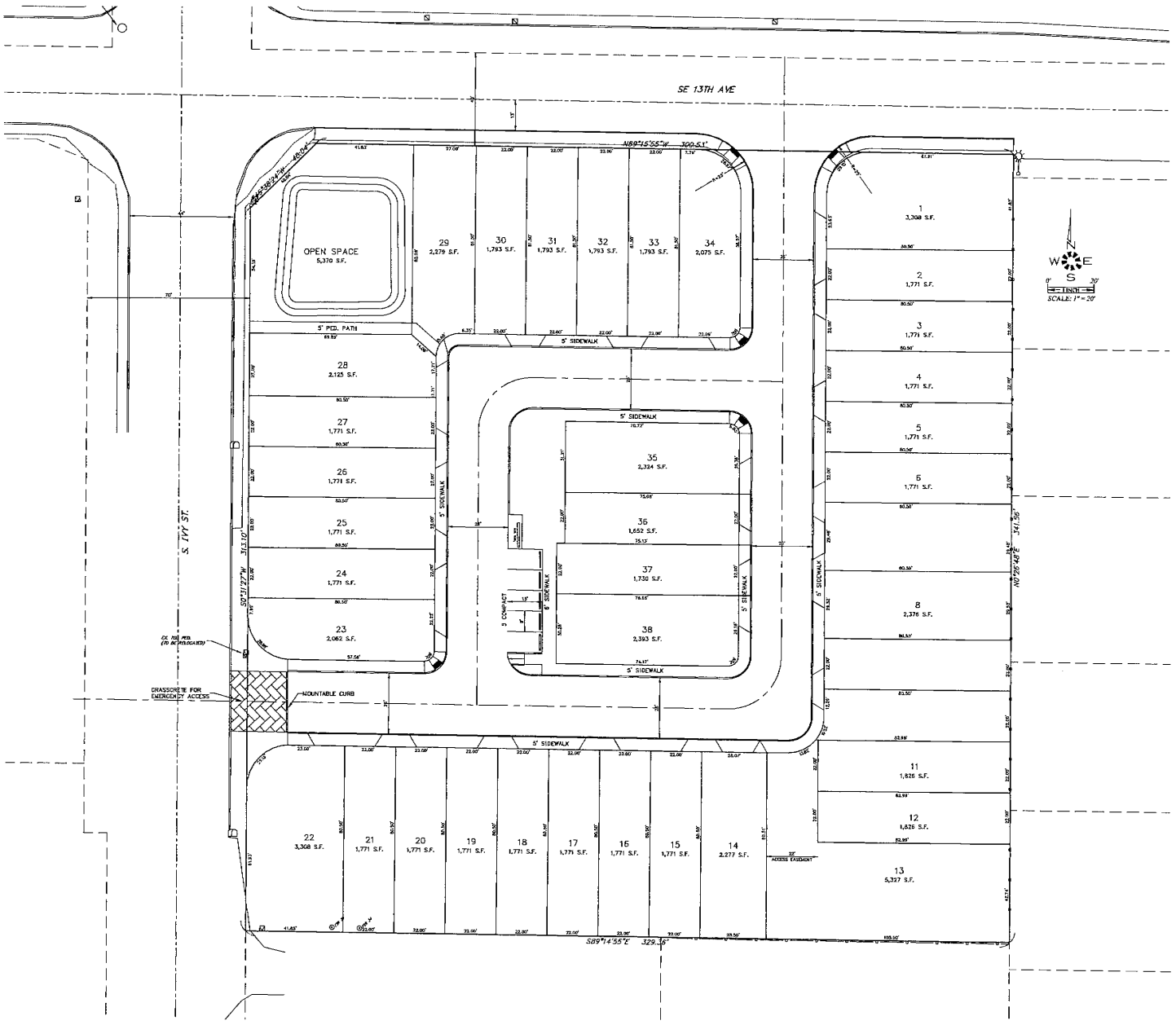
JOB # 6849

SDR2

PARCEL SIZE:
DEVELOPABLE AREA ____ 2.57 Ac.
NUMBER OF UNITS ____ 39
DENSITY ____ 15.18 UNITS/ACRE
LARGEST ____ 5,327 S.F.
SMALLEST ____ 1,652 S.F.
AVERAGE ____ 2,146 S.F.

EXISTING ZONE ____ Single Family Residential
COMPREHENSIVE DESG. _ Low Density Residential

UTILITIES:
CABLE ____ COMCAST CABLE SERVICES
POWER ____ P.G.E.
PHONE ____ CENTURY LINK
GAS ____ N.W. NATURAL
STORM DRAIN &
DOMESTIC WATER __ CITY OF CANBY
SANITARY SEWER __ CITY OF CANBY



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1155 13th CT. SE. SALEM, OR. 97302
PH. (503) 363-9227 FAX: (503) 364-1260
www.mtengineering.net (dfc@mtengineering.net)

PRELIMINARY LOT LAYOUT

IVY STREET TOWNHOMES

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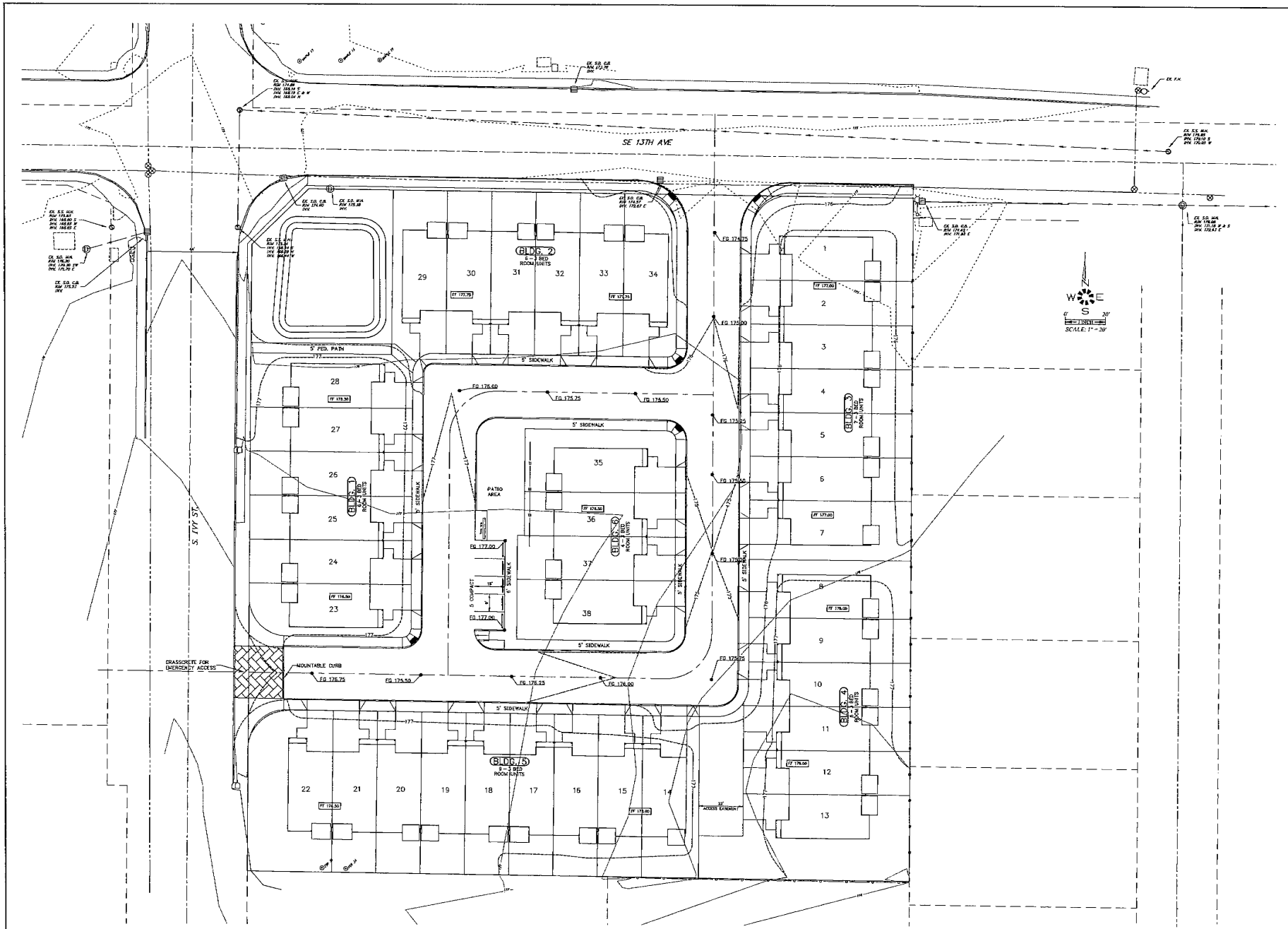
Drawn: C.D.S.
Checked: B.M.G.
Date: MARCH 2019
Scale: AS SHOWN

REGISTERED PROFESSIONAL ENGINEER
OREGON
JANUARY 19, 1988
MARK D. GRENZ
EXPIRES: 06-30-2019

JOB # 6649

SDR3



MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th AVENUE S.E.
SALEM, OREGON 97302
PH. (503) 363-9227 FAX (503) 364-1260
www.mtengineering.net email@mtengineering.net

PRELIMINARY GRADING & DRAINAGE PLAN

IVY STREET TOWNHOMES

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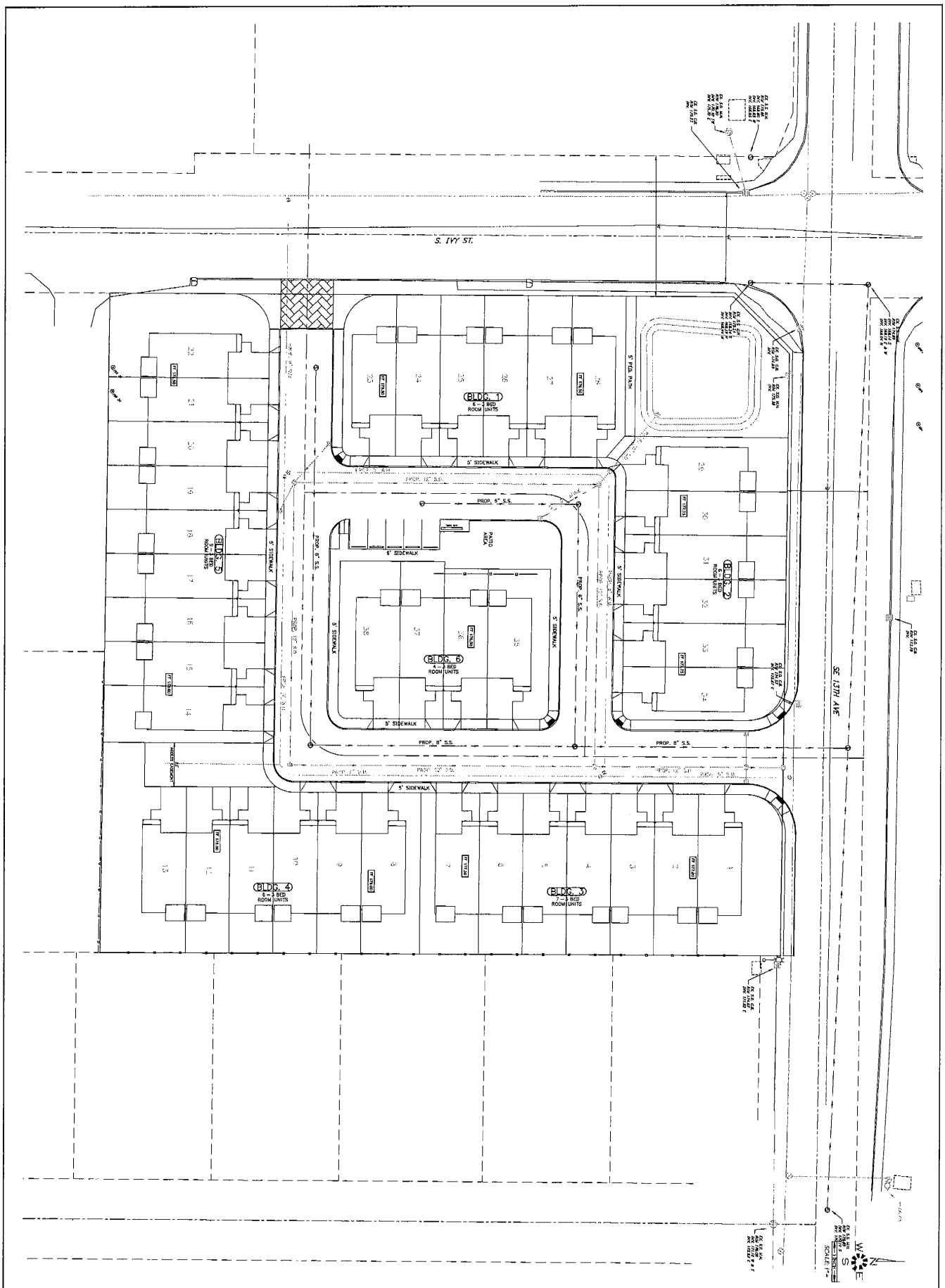
Design: M.D.G.
Drawn: C.D.S.
Checked: B.M.G.
Date: MARCH 2018
Scale: AS SHOWN

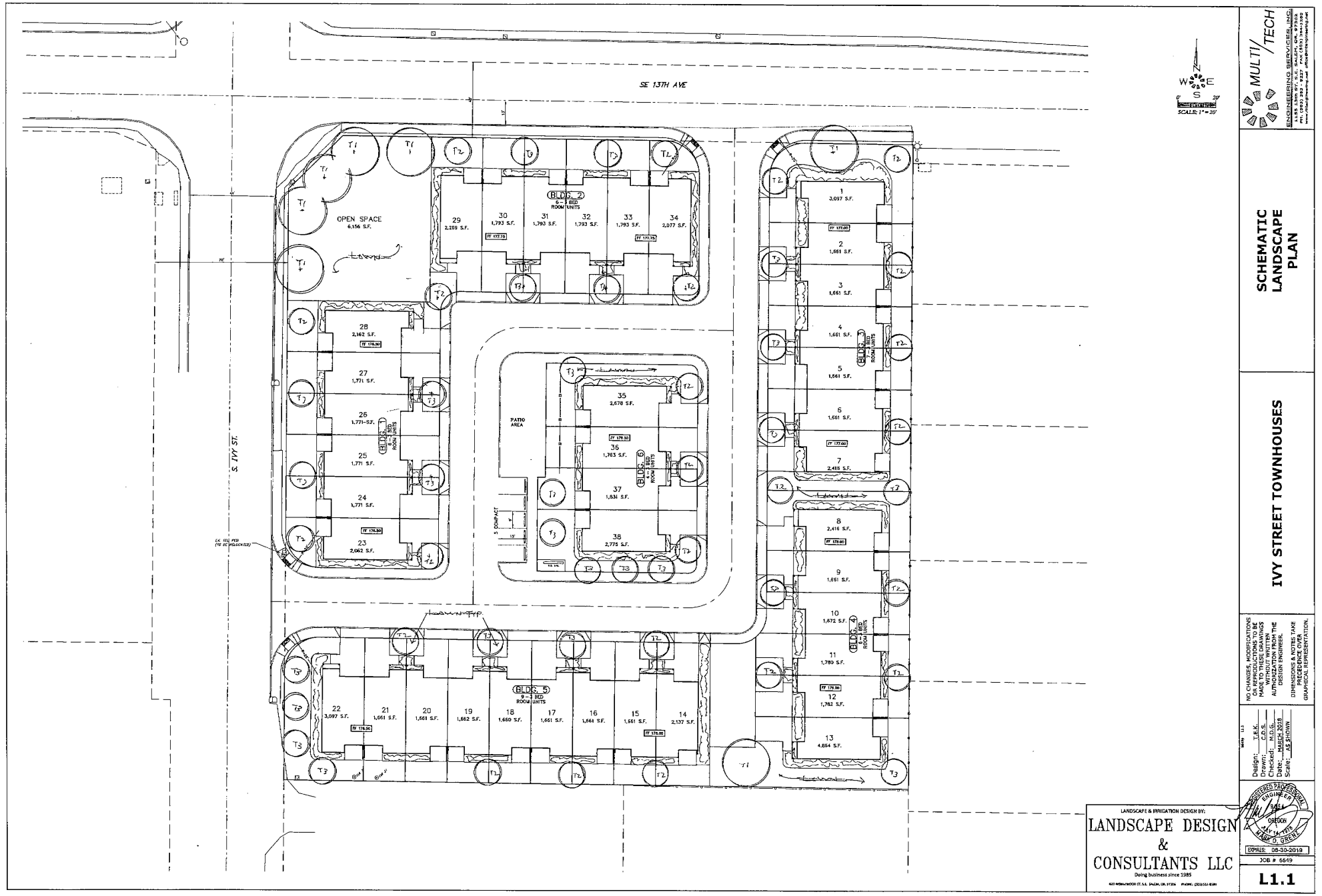
REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
BRIAN M. GRENZ
EXPIRES: 06-30-2019

JOB # 6649

SDR5



SDR6	Design: M.O.G. Drawn: C.D.S. Checked: B.M.G. Date: MARCH 2018 Scale: AS SHOWN	NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER. DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.	**IVY STREET TOWNHOMES**	**PRELIMINARY UTILITY PLAN**	MULTI/TECH ENGINEERING SERVICES, INC. 1155 13th ST. S.E. SALEM, OR. 97302 PH. (503) 363-9227 FAX (503) 364-1260 www.mtengineering.net office@mtengineering.net



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1155 13TH ST. S.E. SALEM, OR. 97302
PH. (503) 363-9227 FAX: (503) 364-1260
www.mtengineering.net office@mtengineering.net

SCHEMATIC LANDSCAPE PLAN

IVY STREET TOWNHOUSES

NO CHANGES, MODIFICATIONS OR ADDITIONS SHALL BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

Design: T.R.K.
Drawn: C.D.S.
Checked: M.D.S.
Date: MARCH 2018
Scale: AS SHOWN

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
MARK D. GRENZ
EXPIRES: 06-30-2019

JOB # 6649

L1.1

LANDSCAPE & IRRIGATION DESIGN BY:
LANDSCAPE DESIGN & CONSULTANTS LLC
Doing business since 1985

GENERAL LANDSCAPE NOTES:

General:

1. All local, municipal, state, and federal laws regarding uses, regulations, governing or relating to any portion of the work depicted on these plans are hereby incorporated into and made part of these specifications and their provision shall be carried out by the Contractor. The Contractor shall at all times protect the public throughout the construction process.
2. The Contractor shall carefully correlate construction activities with earthwork contractor and other site development.
3. The Contractor shall verify drawing dimensions with actual field conditions and inspect related work and adjacent surfaces. Contractor shall verify the accuracy of all finish grades within the work area. The Contractor shall report to the Landscape Design & Consultants LLC (LDC) or Owner all conditions which prevent proper execution of this work.
4. The exact location of all existing utilities structures and underground utilities, which may not be indicated on the drawings, shall be determined by the Contractor. The Contractor shall protect existing structures and utility services and is responsible for their replacement if damaged.
5. Disturbance and impacts to existing native trees/shrubs shall be minimized to the greatest extent practicable.
6. The Contractor shall keep the premises free from rubbish and debris at all times and shall arrange material storage to not to interfere with the operation of the project. All unused material, rubbish, and debris shall be removed from the site.
7. All plant material and planting supplies shall be warranted for a period of not less than one year from the completion date of installation. All replacement stock shall be subjected to the same warranty requirement as the original stock. Any damage due to replacement operations shall be repaired by the Contractor. At the end of the warranty period, inspections shall be made by LDC, Owner/General Contractor. All plant and lawn areas not in a healthy growing condition shall be removed and replaced with plants and turf cover of a like kind and size before the close of the next planting season.

Grading / Erosion Control:

1. The design and placement of the building on the site lends itself to minimal slope conditions with positive drainage being maintained around the entire building. In this case standard landscaping procedures of topsoil, lawn, and a two inch layer of bark mulch on all planting beds will be sufficient to control erosion. In the event site conditions change or there are Slopes / Bio Swale / Detention Ponds on the project with slopes greater than 30% Poly tight Jute Netting shall be installed with anchoring pins as per manufactures recommendations prior to planting. Recommend DeWitt PJN4216 Erosion Control Poly Jute Netting and DeWitt anchor pins or approved equal.
2. Seed recommendation is Pro Time 700 Low Profile or approved equal over the jute netting at a rate of 2 lbs. per 1000 sq. feet. The address of Pro Time is 1712 SE Ankeny, Portland OR 97214. Phone 503-239-7518. There email is info@protimelawnseed.com
3. The work limits shown on this plan shall clearly be marked in the field prior to construction. No disturbance beyond the work limits shall be permitted.
4. Grading shall be preformed during optimal weather conditions.
5. Erosion control measures shall be constructed in conjunction with all clearing and grading activities, and in such a manner as to ensure that sediment and sediment-laden water does not enter the drainage system or violate applicable water standards
6. Prior to the commencement of construction activities, Contractor shall place orange construction fencing around perimeters of construction impact areas, and sediment fencing at downhill portions of the site. Contractor is responsible for proper installation, maintenance, replacement, and upgrading of all erosion and sediment control measures, in accordance with local, state, and federal regulations.

Plant Material:

1. Contractor shall verify all plant & tree quantities with LDC or Owner prior to construction.
2. In the event of a discrepancy between plants materials listed on the drawings, the drawings shall govern the plant species and quantities required.
3. Plant material shall be first quality stock and shall conform to the code of standards set forth in the current edition of the American Standards for Nursery Stock sponsored by the American Association of Nurserymen, Inc. (AAN)
4. Species and variety as specified on the drawings and delivered to the site shall be certified true to there genus, species and variety and as defined within the current edition International Code of Nomenclature for Cultivated Plants.
5. Obtain freshly dug, healthy, vigorous plants nursery-grown under climatic conditions similar to those in the locality for the project for a minimum of two years. Plants shall have been lined out in rows, annually cultivated, sprayed, pruned, and fertilized in accordance with good horticultural practice. All container plants shall have been transplanted or root pruned at least once in the past three years. Balled-and burlapped (B&B) plants must come from soil which will hold a firm root ball. Heeled in plants and plants from cold storage are not acceptable.
6. Planting stock shall be well-branched and well-formed, sound, vigorous, healthy, free from disease, sun-scaled, windburn, abrasion, and harmful insects or insect eggs; and shall have healthy, normal, unbroken root systems. Deciduous trees and shrubs shall be symmetrically developed, uniform habit of growth, with straight trunks or stems, and free from objectionable disfigurements. Evergreen trees and shrubs shall have well-developed symmetrical tops with typical spread of branches for each particular species or variety. Only vines and ground cove plants well-established shall be used. Plants budding into leaf or having soft growth shall be sprayed with an anti-desiccant at the nursery before digging.
7. Contractor shall not make substitutions of plant materials. If required landscape material is not obtainable, submit proof of non-availability and proposal for use of equivalent material. When authorized, adjustments of contract amount (if any) will be made by change order.
8. Plant sizes and grading shall conform to the latest edition of American Standard for Nursery Stock as sponsored by the American Association of Nurserymen Inc. (AAN)
9. All vegetation shown on this plan shall be maintained in a healthy and vigorous growing condition throughout the duration of the proposed use. All vegetation not so maintained shall be replaced wit new vegetation at the beginning of the next growing season.

Planting:

1. Planting shall be installed between February 1st and March 30th or between October 1st and November 15th. If planting is installed outside these times frames, additional measures maybe needed to ensure survival and shall be pre-approved by the owner.
2. Plant material shall be transported to the sit in a timely manner to minimize on-site storage. Where storage is required, all plants shall be kept moist and shaded.
3. Plant stock shall be handled in a manner that will not break, scrape, or twist any portion of the plant. Protect plants at all times from conditions that can damage the plant (e.g., sun, wind, freezing conditions).
4. Provide the following clearance for planting of trees where applicable:

Maintain 30 feet vision triangles at all intersections and corners
5 feet from all street/parking lot light standards
10 feet from fire hydrants
5 feet from all utility vaults, meter boxes, etc.

5. No trees or shrubs shall be planted on existing or proposed utility lines.
6. All shrub beds shall receive a minimum 2" layer of bark mulch evenly applied immediately after panting is completed. All plant beds shall drain away from buildings.
7. Excavate plant pits for shrubs and trees as follows:

Container stock:	width = 2 times the container diameter, depth = container depth.
Bare root stock:	width = 2 times the widest diameter of the root, depth = of root system.
B & B:	width = 2 times ball diameter, depth = ball depth.

Scarify sides and bottom of plant pits to roughen surfaces.

8. Place plants plumb in the pit, Backfill with native soil or top soil mixture to the original plant soil line, and tap solidly around the ball and roots. Water plants immediately after planting if soil is not saturated to the surface.

Top Soil Mixture:

1. A 2" to 4" layer of garden care compost, mushroom compost or similar material sterilized at 105 degrees Fahrenheit shall be incorporated into the existing soil prior to planting and seeding/sod lawns.
Incorporate into existing soil prior to planting the following fertilizers at a rate specified per 1000 sq. ft. of planting area.
20 lbs. 10-6-4 50% Slow Release
30 lbs. 38-0-0 Nitroform
10 lbs. Iron Sulfate 21%
20 lbs. 0-18-0 Super Phosphate
25 lbs. Dolomite Lime
10 lbs. 13-0-11 Potassium Nitrate

Bark Mulch:

1. All shrub beds shall receive a minimum 2" layer of fine hemlock or fir bark mulch evenly applied immediately after panting is completed. All plant beds shall drain away from buildings.

Poly Jute Netting for Bio Swale/Detention Ponds/Vegetated Swale/Rain Gardens:

1. Tight net Poly Jute Netting shall be installed on Bio Swales/Detention Ponds/Vegetated Swale and Rain Gardens as a soil stabilizer and erosion control agent. Jute Netting shall be installed with anchoring pins as per manufactures recommendations prior to planting. Recommend DeWitt PJN4216 Erosion Control Poly Jute Netting and DeWitt anchor pins or approved equal.

Rain Gardens Bark Mulch:

1. After Poly Jute Netting and Plants are installed a 2" layer of bark mulch shall be installed in rain gardens.

Bio Swales/Detention Ponds/Vegetated Swales:

1. Bark Mulch shall not be applied to Bio Swales/Detention Ponds or Vegetated Swales.

Weed Control Agent:

1. Apply casaron as a weed control agent after planting as per manufactures specified recommendations around building or approved equal.

Non-Native Plant Species:

1. All non-native, invasive plant species shall be removed from the site.

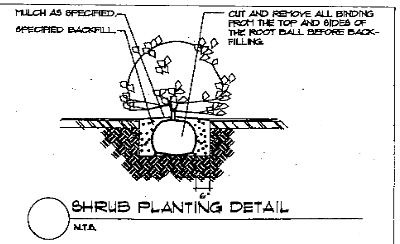
Growing Medium for Stormwater Bio Swales/Vegetated Swales/Rain Gardens Planter Boxes:

1. Furnish imported growing medium for vegetated stormwater facilities conforming to the following:
2. Standard Blend for Public and Private Facilities: Use this blend for all vegetated stormwater management facilities.
3. General Composition: The medium shall be a blend of loamy soil, sand, and compost that is 30 to 40 percent compost (by volume) and sterilized to 105 degrees Fahrenheit.
4. Analysis Requirements for the Blended Material:
   a. Particle Gradation: A particle gradation analysis of the blended material, including compost, shall be conducted in conformance with ASTM C117/C136 (AASHTO T11/T27). The analysis shall include the following sieve sizes: 1 inch, 3/8 inch, #4, #10, #20, #40, #60, #100, and #200. The gradation of the blend shall meet the following gradation criteria:

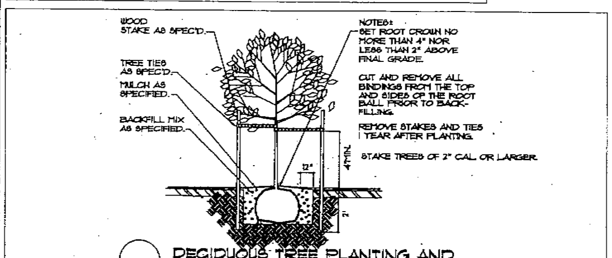
Sieve Size	Percent Passing
1 inch	100
# 4	60-100
# 10	40-100
# 40	15-50
# 100	5-25
# 200	3-5

   b. The blend shall have a Coefficient of Uniformity (D60/D10) equal to or greater than 6 to ensure that it is well graded (has a broad range of particle sizes). The coefficient is the ratio of two particle diameters on a grain-size distribution curve; it is the particle diameter at 60 percent passing divided by the particle diameter at 10 percent passing.
   c. Organic Matter Content: An analysis of soil organic matter content shall be conducted in conformance with ASTM D2974 (loss on ignition test). The soil organic matter content shall be a minimum of 10 percent, as reported by that test.
   d. pH: The blended material shall be tested and have a pH of 5.5 to 7.
   e. Depth of growing medium shall be 18 inches. Growing medium shall be placed in 4 inch lifts and lightly compacted.
   f. Once planting is completed Bark Mulch shall not be installed in Stormwater Bio Swales.
5. General Requirements for the Blended Material:
   a. The material shall be loose and friable.
   b. It shall be well mixed and homogenous.
   c. It shall be free of wood pieces, plastic, screened and free of stones 1 inch (25 mm) or larger in any dimension; free of roots, plants, sod, clods, clay lumps, pockets of coarse sand, paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, building debris, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, acid, and other extraneous materials harmful to plant growth; and free of weeds and invasive plants including but not limited to:
      1. Cirsium arvense (Canadian Thistle)
      2. *Convolvulus* spp. (Morning Glory)
      3. *Cytisus scoparius* (Scotch Broom)
      4. *Dipsacus sylvestris* (Common Teasel)
      5. *Festuca arundinaceae* (Tall Fescue)
      6. *Hedera helix* (English Ivy)
      7. *Holcus canatus* (Velvet Grass)
      8. *Lolium* spp. (Rye Grasses)
      9. *Lotus corniculatus* (Bird's Foot Trefoil)
      10. *Lythrum salicaria* (Purple Loose Strife)
      11. *Melilotus* spp. (Sweet Clover)
      12. *Myriophyllum spicatum* (Eurasian Milfoil)
      13. *Phalaris arundinacea* (Reed Canary Grass)
      14. *Rubus discolor* (Himalayan Blackberry)
      15. *Solanum* spp. (Nightshade)
      16. *Trifolium* spp. (Clovers)
      17. Not infested with nematodes, grubs, other pests, pest eggs, or other undesirable organisms and disease-causing plant pathogens; friable and with sufficient structure to give good tilth and aeration, continuous, air-filled, pore-space content on a volume/volume basis shall be at least 15 percent when moisture is present at field capacity; and soil shall have a field capacity of at least 15 percent on a dry weight basis.
6. Compost: The compost shall be derived from plant material and provided by a member of the U.S. Composting Council Seal of Testing Assurance (STA) program. See www.compostingcouncil.org for a list of providers in Portland and sounding area.
7. The compost shall be the result of the biological degradation and transformation of plant-derived materials under conditions designed to promote aerobic decomposition. The material shall be well composted, free of viable weed seeds, and stable with regard to oxygen consumption and carbon dioxide generation. The compost shall have no visible free water and produce no dust when handled. It shall meet the following criteria, as reported by the U.S. Composting Council STA Compost Technical Data Sheet provided by the vendor.
8. 100 percent of the material must pass through a 1/2-inch screen. The pH of the material shall be between 6 and 8. Manufactured inert material (plastic, concrete, ceramics, metal, etc.) shall be less than 1.0 percent by weight. The organic matter content shall be between 35 and 65 percent.
9. The soluble salt content shall be less than 6.0 mmhos/cm. Germination (an indicator of maturity) shall be greater than 80 percent.
   a. The stability shall be between classes 5-7.
   b. The carbon/nitrogen ratio shall be less than 25:1.
   c. The trace metals test result = "pass."
10. Submittals: At least 14 working days in advance of construction, submit the following:
   a. Two 5-gallon buckets of the blended material.
   b. Documentation for the three analyses described in Section (4) of this specification (particle gradation with calculated coefficient of uniformity; organic matter content; pH). The analyses shall be performed by an accredited laboratory with certification maintained current. The date of the analyses shall be no more than 90 calendar days prior to the date of the submittal.

The report shall include the following information:
Name and address of the laboratory
Phone contact and e-mail address for the laboratory
Test data, including the date and name of the test procedure



SHRUB PLANTING DETAIL
N.T.S.



DECIDUOUS TREE PLANTING AND STAKING DETAIL
N.T.S.

PLANT PALETTE
APARTMENTS

QTY.	SYM	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	REMARKS
			TREES			
7	T-1	Acer rubrum 'Armstrong'	Armstrong Red Maple	1 ½"- 2" cal.	B & B	8' Standard
25	T-2	Fagus sylvatica 'Dawyck Purple' Columnar	Columnar Dawyck Purple Leaf Beech	1 ½"- 2" cal.	B & B	4' Standard
26	T-3	Pyrus calleryana 'Capital'	Capital Flowering Pear	1 ½"- 2" cal.	B & B	8' Standard
			SHRUBS			
	S-1	Abelia grandiflora 'Ed Goucher'	Edward Goucher Abelia	2 gal.	cont.	Full
	S-2	Berberis thunbergii 'Crimson Pygmy'	Crimson Pygmy Japanese Barberry	2 gal.	cont.	Full
	S-3	Calamagrostis x acutiflora 'Avalanche'	Avalanche Feather Reed Grass	2 gal.	cont.	Full
	S-4	Cornus stolonifera 'Kelseyi'	Kelseyi Dwarf Redwig Dogwood	2 gal.	cont.	Full
	S-5	Cornus sericea Arctic Fire 'Farrow'	Artic Fire Redwig Dogwood	2 gal.	cont.	Full
	S-7	Daphne ordora 'Marginata'	Marginata Daphne	2 gal.	cont.	Full
	S-8	Euonymus alatus 'Compacta'	Burning Bush Winged Evonymus	2 gal.	cont.	Full
	S-9	Euonymus fortunei Moonshadow	Moonshadow Euonymus	2 gal.	cont.	Full
	S-10	Festuca glauca Elijah Blue	Elijah Blue Festuca Grass	1 gal.	cont.	Full
	S-11	Mahonia aquifolium 'Compacta'	Compact Oregon Grape	2 gal.	cont.	Full
	S-12	Ligustrum japonicum Texanum	Texas Wax-Leaf Privet	5 gal.	cont.	Full
	S-13	Pennisetum alopecuroides Hameln	Dwarf Fountain Grass	2 gal.	cont.	Full
	S-14	Pieris japonica 'Astrid' Compacta	Astrid Japanese Andromeda Compacta	5.gal	cont.	Full
	S-15	Rhododendron 'Yaku Princess'	Yaku Princess Rhododendron	24"-30"	w/buds	Full
	S-16	Rhododendron 'Daphnoides'	Daphnoides Rhododendron	24"-30"	w/buds	Full
	S-17	Rhododendron 'PJM'	PJM Rhododendron	24"-30"	w/buds	Full
	S-18	Rosa 'prostrata red'	Red Prostratra Rose	2 gal.	cont.	Full
	S-19	Spiraea japonica 'Magic Carpet'	Magic Carpet Spirea	2 gal.	cont.	Full
	S-20	Spiraea japonica 'Double Pink'	Double Pink Spirea	2 gal.	cont.	Full
	S-21	Viburnum tinus 'Spring Bouquet'	Laurustinus 'Spring Bouquet'	5 gal.	cont.	Full

CONTRACTOR TO VERIFY ALL QUANTITIES OF PLANT MATERIALS WITH LANDSCAPE DESIGN & CONSULTANTS PRIOR TO INSALLATION PLANT MATERIAL SUBSTITUTIONS MAY BE MADE BY THE OWNER FOR PLANT MATERIALS OF SIMILAR HABIT, FLOWERING CHARACTERISTIC AND/OR STRUCTURE OF GROWTH DUE TO AVAILABILITY, WATER, SOIL, AND SUN REQUIREMENTS.

LANDSCAPE & IRRIGATION DESIGN BY:
LANDSCAPE DESIGN & CONSULTANTS LLC
Doing business since 1985

MULTI/TECH
ENGINEERING SERVICES, INC.
1155 13th ST. S.E. SALEM, OR. 97302
PH. (503) 363 - 9227 FAX (503) 364-1260
www.mtengineering.net office@mtengineering.net

LANDSCAPE DETAILS & NOTES

IVY STREET TOWNHOUSES

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS TO BE MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

Design: T.E.K.
Drawn: C.D.S.
Checked: M.D.G.
Date: MARCH 2018
Scale: AS SHOWN

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 19..
MARK D. GRENZ
EXPIRES: 06-30-2019

JOB # 6649

L1.2

Pre-Application Meeting

Residential Multi-Family Apartments
December 13, 2017
10:30 am

Attended by:

Pat Hanlin, Owner, 503-407-8957
Bryan Brown, Planning, 503-266-0702
Jim Stuart, Canby Utility, Operations Manager, 503-263-+4322
Gary Stockwell, Canby Utility, Electric, 503-263-4307
Jessica Iselin, Iselin Architects, 503-656-1942
Jerry Nelzen, Public Works, 503-266-0759
Doug Quan, Canby Utility, Water, 971-563-6314
Hassan Ibrahim, Curran-McLeod Engineering, 503-684-3478

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

ISELIN ARCHITECTS, Jessica Iselin

- At this point we are looking at getting feasibility of the property. Pat owns the property and he is not sure if he will develop it, but he is just trying to determine what he can do with the property. Basically we are looking at apartments and the proposal would be townhome style apartments, not condos or zero lot line. Based on the information we have on this zone and looking at what is feasible and this being our first proposal we are trying to maximize the potential of the site. This is a little tough because the density is high and there are some limitations we are finding with roads, access and additional dedication.
- How do you propose moving forward with the county on the spacing and the access standards? We would like to have some input from you first and Bryan said if you press the issue and we will make contact and explain there is no access which will make the standards. I doubt they will bend on the access onto S Ivy Street and I would like to evaluate both of them and see what works best with our standards since we will eventually take over S Ivy Street. If we think there will be some preference to which access then we would argue it and Jerry said it would be the school and Hassan agreed because both streets are arterial. Bryan said you will need to do a google map and present it to us with the nearby properties showing streets and driveways giving us the information and the distances to make the assessment and decide if it is worth arguing with the county on which driveway we would prefer. Discussion ensued. Jessica said we will discuss this issue and get back you on the accesses.
- The way we laid out this project fronting SE 13th Avenue and S Ivy Street with the units do you see anything that shows red flags and Bryan said no, we rather like it and it is tolerable because it is two-stories.

CURRAN-MCLEOD ENGINEERING, Hassan Ibrahim

- I received the comments from Clackamas County on S Ivy Street and it is under their jurisdiction and they are stating there is a 400 ft access spacing standard and you are showing approximately 240 ft. The only option they will allow is just an emergency access and your

primary access will have to be off of SE 13th Avenue, unless they grant an exception and you apply for a variance with the county to let you have another access point. My thoughts are it would be an emergency access for the fire department.

- The curb line on S Ivy Street has to be 25 ft from center line and it contradicts what we have done further south at approximately 23 ft. Now it creates a problem with the way the signal post is sitting right now. I do not know if you have seen the curb line coming from SE 13th Avenue and it is about 8 ft wider on SE 13th Avenue than where the existing curb line is located and there may be an issue with the signal post having to be relocated to a different location to meet the new standards. Jessica asked if the burden of relocating this signal would be on the developer and Hassan said possibly with some system development charges (SDC) involved and it is a big undertaking for the developer to do that and Bryan asked why it needs to be moved. Hassan said because the county wants the curb line to be 25 ft from centerline and right now it does not meet the requirement. There could be a solution with having a right turn only here, but it would have to be determined by the traffic study and this is just my opinion. Gary said similar to Berg Parkway and the answer was yes.
- Storm drainage will have to remain on site and you can use private drywells since it will be a private street and they will need to be rule authorized by the Department of Environmental Quality (DEQ).
- SE 13th Avenue is also an arterial roadway and is under the jurisdiction of the City of Canby. Our access spacing is a minimum of 330 ft and you are showing 242 ft and does not meet the criteria and we cannot deny you an access to your site. You will have to do a variance with the city and to justify why you cannot meet the requirement of the 330 ft spacing in the staff report. Jessica asked if it would technically require a variance to do it and Bryan said he has not determined it for certain, but there may be some other language in spacing standards regarding the city administrator would have to make the exceptions or you might have to do an access management exception plan to show us a document of why there is no other option and this is the best option available rather than apply for a variance. Our variance criteria is ridiculous when you are trying to do something like this and I think there will be a traffic analysis or access management plan to justify. We have to discuss this issue with the county and see why they get to win and we lose.
- The curb location will have to match the existing development of Dinsmore Estates to the east and we set the curb line at 22 ft from center line ROW and Jessica said she looked at the maps and we have not had a survey done yet. Hassan said an additional 10 ft dedication will be required on S Ivy Street.
- There are distinguishing differences between public and private roads and you will need to have a commercial driveway approach, minimum 6 inch concrete with reinforcements.
- The sanitary sewer is available on both SE 13th Avenue and S Ivy Street. Hassan told Jessica you will stub it from the existing main line and the existing main line is on the north side of SE 13th Avenue and you will come in somewhere in the public ROW, terminate it with a manhole and from that manhole you will supply the entire property with a private sewer system. Jessica asked where the sewer main was on S Ivy Street and Jerry stated it was in the planter strip across S Ivy Street. Jessica asked what the depth of both sewer mains were at and Jerry said 8 ft on both mains. Jessica inquired which one would be the better to tap and Jerry said SE 13th Avenue because S Ivy Street is under the jurisdiction of Clackamas County

and their mandates are more stringent than ours and both sewer mains are plastic. You will have a lot of utilities to cross on S Ivy Street.

- The sidewalks on SE 13th Avenue are curb tight with a large planter strip behind the sidewalk and you will match the same configuration. The county is asking for a 5 ft planter strip on S Ivy Street.
- The county is asking for 8 ft ROW and we typically ask for 12 ft ROW. Jessica asked for clarification on S Ivy Street, the county is requiring the 10 ft dedication and an 8 ft easement and will the city require any additional easement on SE 13th Avenue. Gary stated our standard is a 12 ft easement on the street sides and the driveways, planter strips, walkways are an acceptable use of the easement and they do not encumber it.
- Since there is an existing house it will require a demo permit at that time.
- Is this existing house on septic or sewer and the answer was septic. Hassan said it will have to be decommissioned in conformance with DEQ and Clackamas County requirements. You will need to send us all the documentation on the decommissioning.
- It was brought up there was a water well on the property and Hassan said it will need to be decommissioned as well by DEQ and Clackamas County requirements.

CITY OF CANBY, PUBLIC WORKS DEPARTMENT, Jerry Nelzen

- We will try to match the existing street trees on SE 13th Avenue and if they were going to do a planter strip here I would entertain doing a planter strip around here and fade it in for pedestrian safety. If you decide to do this project we can revisit this idea again and Jessica said that would be fine. Bryan asked if they were considering a wall and Jessica said no.
- Jerry asked if there was another property between this land and Scott Sassy's property and the answer was no. We were hoping we could supply him with city sewer off of this project. Hassan said you would have to make it a public sewer line to accommodate it and Jerry said this project is going in a different direction than what we were thinking. Hassan asked if the Sassy property could go out into S Ivy Street and Jerry said yes, they could have and right now they have a pressure line pumping into Dinsmore Estates. I was just checking to see if there was an option we could give him for a gravity line and it does not look like it is going to work.
- The Sassy property to the south is on a water well and you will need to make sure you are at a 267 ft radius away if you decide to do any drywells on your property. Jessica asked if we knew where it is located and the answer was on the backside of the new shop he just built.

CANBY UTILITY, WATER DEPARTMENT, Doug Quan

- There is a 14 inch line in SE 13th Avenue on the south side, short connection and there is a 10 inch line on the west side of S Ivy Street. If you want to avoid the county, the best option is SE 13th Avenue. Apartment complexes are a single meter and your SDC's will be based on the number of dwelling units. Everything will be private from the meter vault and Pat asked what he meant and Doug said after the meter you have the ability to sub-meter all of the units. If you have the thought you are going to subdivide and sell these things individually in the future, it changes everything. Depending on what you decide on which street you would like to get your water off of, there is water available and off the 14 inch you could get as much as you want.

- If you are doing private roads the water system will be private. If you are required to have fire service, all the fire hydrants on the inside of the property will be private and maintained by the property owner. A double check will be located on the property side of the public utility easement (PUE). Jessica asked if anyone knew where the nearest fire hydrant is located and do you anticipate we would be required to place a hydrant on the property. Doug said you are 250 ft in, which is the maximum they will go, so more than likely you will need some. If you did public streets it would be different, but with a private complex it is different because we do not have public water on private property.

CANBY UTILITY, OPERATIONS MANAGER, Jim Stuart

- We will need all the documentation for the decommissioning of the water well. Doug said the decommissioning by state standards means it is done by a licensed well driller and they fill it with bentonite and cap it.

CANBY UTILITY, ELECTRIC DEPARTMENT, Gary Stockwell

- One of my questions were public or private streets, individual property lines and it is more or less just an apartment complex. Jessica said yes. Gary said it makes it a lot easier on my part.
- We no longer offer leased lighting for the interior lighting, either the complex or home owner's association whatever the case may be. I am assuming 4 to 5 street lights on the perimeter and would be covered under your development fees and the city would take ownership of those lights.
- I will have to see how this lays out for my conductor. The main line primary most likely will require an easement. Jessica asked would this be an addition of the two easements already asked for and Gary said the easements will be on SE 13th Avenue and S Ivy Street, but my primary as I come into the development, the main line will require an easement and could possibly serve properties beyond you and it is just the nature of our looped system.
- There is a pole line out here and you do not have to worry about any relocations of those poles through the development. Jessica said do we assume the lines will be underground and Gary said the development would be underground and as we build the system out I will remove the poles.
- Here is our scope of work and it describes basically you will supply the trenches, grades, staking and back fill. We will provide and install the conduit, vaults and it is a little bit different from the other places around the area. Jessica said once we move forward we will have a civil engineer on board that will get more details, but for right now I am just trying to get the basics.
- When we serve each building with a meter pack on the wall versus the townhome style where each unit would get a meter.

OWNER, Pat Hanlin

- Will the access on S Ivy Street be gated and the answer was yes. Gary said a lot of people do the grass area access.
- If the stormwater is contained on site is there still an SDC and Bryan said yes, because it is our adopted methodology and we have all of the on site storm for a 25 year event and we

have the detention facilities for the community. Hassan said Canby is exceptional for drainage and ultimately all the water goes into a public system and that is why they charge an SDC.

CITY OF CANBY, PLANNING DEPARTMENT, Bryan Brown

- We talked about the complex being townhome style right now and the code states the only way you can get apartments on a CR zoning is through approval of a conditional use permit. I do not necessarily see that as an issue, but you need to know it will be one of the applications you will need. Jessica said she read about the conditional use permit and it was pretty straight forward, but there was also a provision for a PUD and I did not know if it would apply and in this case one makes sense more than the other. Bryan said he did not study the detail, but I am not thinking a PUD is necessary and I am not quite sure there is any reason to use a PUD and Jessica stated a conditional use would be straight forward and Bryan said yes.
- Follow the development standards for the R-2 zone and I brought you a copy of those regulations.
- You will need a site and design review application. Any new buildings require it and they are both type III applications done together and go through the same process and Jessica asked if it was two fees and Bryan said yes. There are two separate fees, but we do actually give you the lowest cost one at half price. I am also giving you the review criteria for both applications.
- You are proposing a substantial development and we will need to do a traffic study. The traffic study is begun by you supply us with a $500 dollar deposit and our traffic consultant engineer, DKS Associates and I will determine what tasks need to be studied. They will give you an estimate of the cost of an actual study with the tasks we feel necessary. At that point you can choose whether you use your own traffic engineer or use DKS. If you choose your own it will be whatever you can negotiate with them to complete the scope of work tasks we are demanding the study to do and our traffic engineer will charge you for them to review their results and that your engineers did all the tasks required. It takes approximately three weeks to do scope of work and four to five weeks to do a study. If we know it is well on its way and about done we will let you submit your land use applications. The cost could be approximately $3,000 dollars minimum.
- We already discussed the spacing from the intersection and I do not believe it meets the spacing standard on SE 13th Avenue from the next street and you would need to know that spacing distance.
- I brought a spreadsheet with our SDC fees and I made an estimate, I am fairly confident the formulas on this sheet are correct. We have stormwater, parks, wastewater and transportation and at the bottom of the spreadsheet are other city fees that are applicable. We have the plan review fee associated with your final building and there are minimal fees for connecting to the city. The only fee not on there is an engineering construction plan review fee and it is .02% of the onsite construction costs other than the buildings and it has a cap on it of $3,000 dollars. Pat said if we lose units based on some of the setbacks and Bryan said you have 39 units on the sheet and you can just change the number and it will recalculate.

- I have your acreage of your property at 2.39 and if you are dedicating ROW you would need to change it because it would lower your soil erosion control fees.
- I put in an average square footage of your individual units at 800 sq ft and this was the easiest way to get the city's construction excise tax. It is based upon the square footage on new living units.
- Looks like you meet the parking standard as designed and will also meet the landscape standard.
- You can fill out both applications on our website and send them to us via email with a prepared narrative for both land use applications. If you have any questions, you can contact me.

MEMORANDUM

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

DATE: June 19, 2018

TO: Bryan Brown, City of Canby

FROM: Chris Maciejewski, PE, PTOE
Jordin Kelly, EIT

SUBJECT: Canby Townhomes TIA Review P#11010-099

Per your request, we have reviewed the transportation impact analysis (TIA) for the proposed Townhome Subdivision Canby, Oregon.[1] The study provides adequate information to comply with the required scope items identified in the transportation impact study scope.[2]

Based upon our most current review of the traffic analysis associated with the proposed Canby Townhome Subdivision 30 and 38-unit scenarios, there are some items that require modification prior to completing our findings.

We have the following comments regarding the study:

- The average vehicle delay at the Ivy Street/13th Avenue intersection is shown to improve from existing conditions to existing plus background conditions. It is recommended that the engineer performing the study revise the analysis accordingly or provide background trip documentation and an explanation as to why the delay improved with the added traffic.
- It is recommended to provide volume figures for the 2018 AM Existing + Background + 38-Unit project trip scenario as well as the 2038 PM + 38-Unit project trip scenario
- The AM and PM 2035 + 30-Unit project trip scenarios don't appear to be analyzed in this study. If the City would find this analysis helpful for documentation moving forward, it is recommended to include this analysis. However, the worst-case scenario of 38-units was evaluated in the study which indicated operating conditions that meet standards.
- It is recommended to revise Figures 16, 17, 18, and 19 as well as the applicable intersection operations and queueing analysis so that the vehicle volume between the Ivy Street/13th Avenue intersection and the Ivy Street Access balance.

[1] Traffic impact Analysis Ivy St Townhomes, Associated Transportation Engineering & Planning Inc, June 15, 2018.
[2] Canby Townhomes Traffic Study Scope of Services, DKS Associates, May 11, 2018.

- A site plan for the single access off 13th Avenue scenario was not included in the review package. It is recommended that this be provided by the applicant to review alignment, circulation, and pedestrian and bicycle facilities.
- 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.

If you have any questions, please call me.

Revised
Traffic Impact Analysis
Ivy St Townhomes

Canby, Oregon

July 6, 2018

completed with
MultiTech Engineering Services, Inc
Salem, Oregon

Prepared by:
Associated Transportation Engineering & Planning, Inc.
Salem, Oregon
18-387 - July 6, 2018

ASSOCIATED
TRANSPORTATION
ENGINEERING &
PLANNING INC.

A.T.E.P., Inc.
1155 13th St. S.E.
Salem, OR. 97302

Tel.: 503-364-5066
FAX: 503-364-1260
e-mail: kbirky@atepinc.com

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Canby, Oregon

ASSOCIATED TRANSPORTATION ENGINEERING & PLANNING INC.
A.T.E.P., Inc.
1155 13th St. S.E.
Salem, OR. 97302
Tel.: 503-364-5066
FAX: 503-364-1260
e-mail: kbirky@atepinc.com

Introduction and Summary:

The intent of this transportation impact study is to identify potential transportation system impacts created by the proposed Ivy St Townhomes project. The site, south of 13th Ave and east of Ivy St, is 2.6 acres and will provide 38 new townhomes (ITE 220) for residents of Canby. It is noted the City might limit the development to 30 townhomes. The parcel is tax lot 4800 of tax map 4S1E04DA and is currently has a single family home and undeveloped farmland. The site zoned Residential Commercial(C-R). Background traffic from Beck Pond (69 Homes) and the Mayberry Group (89 Homes) southwest of the site have been included in the computer modeling for this study.

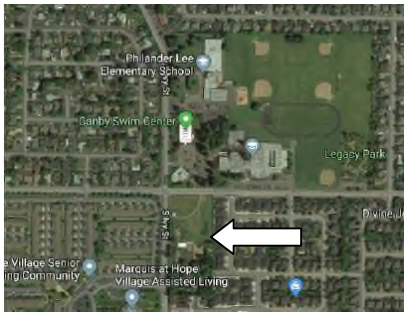


Figure 1 - Aerial View of Site

This report finds Ivy St Townhomes would not have significant off-site traffic impacts. No off-site mitigation is recommended for the proposed project as a result of traffic impacts. There are several site-access and circulation related conditions recommended to improve traffic flow and safety, including:

- Continue the no parking policy along the project frontage on both Ivy St and 13th Ave.
- Site driveways shall be kept clear of visual obstructions (e.g. landscaping, objects, etc.) that could potentially limit vehicle sight distance for drivers leaving Ivy St Townhomes and/or drivers on 13th Ave.

This analysis will consider the traffic impacts at the intersections of:

- Ivy St at 13th Ave.
- 13th Ave at the Site Access
- Ivy St at Site Access

Existing and Background Conditions:

Ivy St and 13th Ave are both minor arterials in the City of Canby and designed to serve as connections between local streets and collector streets and highways and freeways. Traffic at the intersection is traffic signal controlled. The Canby Adult Center and Hope Village Retirement Community are across the street from the Ivy St Townhomes site. The access to the Senior Center is across 13th Ave from the proposed

access to the site. Ackerman Middle School is north and east of the site on 13th Ave. It is anticipated the project will construct sidewalks along its frontage of Ivy St and 13th Ave, improving pedestrian travel in the vicinity. There are bike lanes on both Ivy St and 13th Ave along the project frontage. Canby Area Transit (CAT) provides general public Dial-A-Ride service for anyone traveling to or from destinations within the Canby Urban Growth Boundary. Service is provided for this operation between 8 a.m. and 6 p.m.

Turning movement counts were entered into a computer model to determine the transportation performance metrics for the studied intersections. Traffic expected from Beck Pond and Mayberry Group Development was added to the computer model as background traffic. All of the studied intersections are performing within accepted performance standards in the City of Canby with current and background traffic volumes.

Impacts:

The Institute of Transportation Engineers (ITE) publishes the Trip Generation Manual (10th Edition) to estimate the trip generation of different uses. It is developed from numerous trip generation studies in the past years. The development of the planned 38 (30) units in Ivy St Townhomes (ITE 220) is estimated to generate 17 trips in the AM Peak hour and 21 trips in the PM Peak hour. (30 units would generate 14 AM Peak hour trips and 17 PM Peak hour trips). Traffic from the planned townhomes will affect performance metrics at the studied intersections. However, both Ivy St and 13th Ave are minor arterials, designed and intended to carry large volumes of traffic in the City. The studied intersections will continue to function within the performance metrics the City assumed to develop their Transportation System Plan with traffic from the Ivy St Townhomes. The performance metric the City of Canby uses for its signalized intersections is LOS D or better. The intersection will continue to function at LOS B.

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ivy St at 13th Ave	Signalized	HCM 6th Edition	EB Left	0.386	14.3	B

Existing AM Peak Hour Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ivy St at 13th Ave	Signalized	HCM 6th Edition	WB Left	0.362	13.7	B

Existing PM Peak Hour Summary

Figure 2 - Existing Traffic Conditions

Two subdivisions are in planning stages southwest of the Ivy St Townhomes site. Beck Pond will add 69 homes west of Fir St at 16th Ave and the Mayberry Group will add 89 homes west of Ivy and north of the Molalla River. Anticipated traffic from these homes was added to the computer model without the Ivy St Townhomes to estimate the Background Traffic Conditions in Figure 3

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ivy St at 13th Ave	Signalized	HCM 6th Edition	EB Left	0.408	14.1	B

Background AM Peak Hour Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ivy St at 13th Ave	Signalized	HCM 6th Edition	WB Left	0.403	15.8	B

Background PM Peak Hour Summary

Figure 3 - Background Traffic Conditions

Crash data was obtained from ODOT for the studied intersections for the 5 year period including 2012 through 2016. There were 4 reported injury crashes and 2 property damage crashes at the intersection of Ivy St at 13th Ave SE in the analyzed time period. There were no fatal crashes.

Intersection	Fatal Crashes	Injury Only	Property Damage Only	Total
Ivy St at 13th Ave SE	0	4	2	6

Figure 4 – 2012 to 2016 ODOT Crash Data

There were 1224 vehicles entering the Ivy at 13th intersection in the PM Peak hour for this study. If one assumes the PM Peak hour is 10% of the daily traffic, the crash rate is estimated to be 0.269 crashes /Mev, below the ODOT intersection crash rate mean for 4 legged urban signalized intersections (0.477 crashes/Mev)

This analysis will assume that 35% of the traffic from the Ivy St Townhomes will travel to and from the west on 13th Ave, 20% to and from the east on 13th Ave, 15% south on Ivy St, and 30% will travel to and from the north on Ivy St. The analysis assumed there will be 30 or 38 townhomes build and both scenarios were modeled for this study.

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ivy St at 13th Ave	Signalized	HCM 6th Edition	EB Left	0.414	14.2	B
2	13th St Access	Two-way stop	HCM 6th Edition	NB Left	0.025	13.6	B

2018 AM Peak Hour Summary with 30 Ivy St Townhomes

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ivy St at 13th Ave	Signalized	HCM 6th Edition	WB Left	0.403	15.8	B
2	13th St Access	Two-way stop	HCM 6th Edition	NB Left	0.012	13.6	B

2018 PM Peak Hour Summary with 30 Ivy St Townhomes

Figure 5 – 2018 Traffic Conditions with 30 Ivy St Townhomes

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ivy St at 13th Ave	Signalized	HCM 6th Edition	EB Left	0.422	14.3	B
2	13th St Access	Two-way stop	HCM 6th Edition	NB Left	0.014	13.5	B
9	Ivy St Access	Two-way stop	HCM 6th Edition	WB Left	0.002	13.3	B

2018 AM Peak Hour Summary w 38 Ivy St Townhomes (2 Accesses)

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ivy St at 13th Ave	Signalized	HCM 6th Edition	WB Left	0.407	15.9	B
2	13th St Access	Two-way stop	HCM 6th Edition	NB Left	0.007	13.6	B
9	Ivy St Access	Two-way stop	HCM 6th Edition	WB Left	0.003	16.4	C

2018 PM Peak Hour Summary w 38 Ivy St Townhomes (2 Accesses)

Figure 6 – 2018 Traffic Conditions with 38 Ivy St Townhomes (2 Accesses)

Future Traffic Conditions and Queuing Analysis:

The computer model was run to estimate the performance metrics at the studied intersections 20 years in the future (2038) with a focus on the traffic queuing at 13th at Ivy. The model assumed there will be 38 homes (30 homes would have less impact), traffic will increase 2.3% per year for 20 years (x1.46). The intersection of Ivy St at 13th Ave will function at LOS B with v/c between 0.489 and 0.605 depending on the time of day and the number of access points for the Ivy St Townhomes.

There are two queues at the intersection of Ivy at 13th Ave signal that be more affected by adding a second access to the site from Ivy St (in addition to the proposed 13th Ave access). Assuming 38 homes and 1 access (onto 13th Ave) the 95th %ile NBT (northbound thru) lane queue is estimated to be 209' (AM) and 107' (PM) and the WBT 95th %ile queue is estimated to be 230' (AM) and 108' (PM). Assuming 38 homes and 2 accesses to the site (1 on 13th Ave and 1 on Ivy St), the NBT queue is stimated to be 209' (AM) and 82' (PM) and the WBT queue 228' (AM) and 115' (PM). None of the queues will

extend to the proposed accesses where they are proposed. Allowing a 2nd access (on Ivy St) will reduce the longest queue, reduce the wait time for drivers at the intersection, improve access for residents of the project, allow higher housing density in the City, distribute site access to two points rather than 1and provide additional convinience to the residents of the City of Canby living in the Ivy St Townhomes.

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ivy St at 13th Ave	Signalized	HCM 6th Edition	EB Left	0.605	16.3	B
2	13th St Access	Two-way stop	HCM 6th Edition	NB Left	0.041	17.7	C
9	Ivy St Access	Two-way stop	HCM 6th Edition	WB Left	0.000	16.9	C

2038 AM Peak Hour Summary with 38 Ivy St Townhomes and 1 Access

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ivy St at 13th Ave	Signalized	HCM 6th Edition	WB Left	0.575	22.2	C
2	13th St Access	Two-way stop	HCM 6th Edition	NB Left	0.025	18.0	C
9	Ivy St Access	Two-way stop	HCM 6th Edition	WB Left	0.000	23.3	C

2038 PM Peak Hour Summary with 38 Ivy St Townhomes and 1 Access

Figure 7 - 2038 Traffic Conditions with 38 Ivy St Townhomes

Traffic volumes and performance metrics at the intersection(s) for the various scenarios (Existing, Background, 30 Townhomes and 38 Townhomes) are shown in Figures 7 through 14.

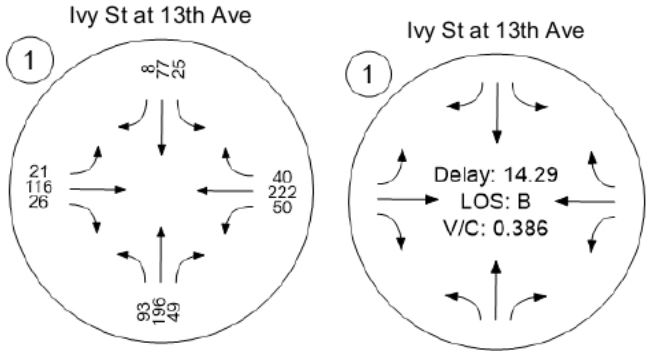


Figure 8 - Existing AM Peak hour Counts and Metrics

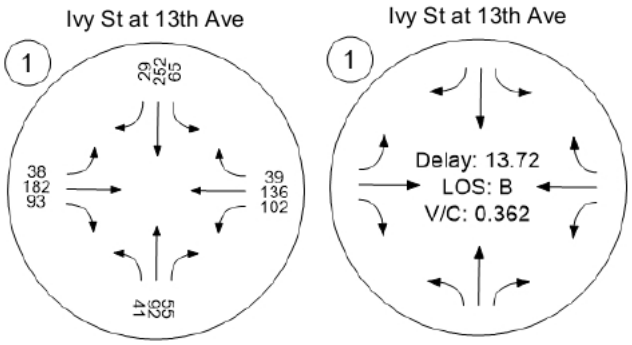


Figure 9 - Existing PM Peak hour Counts and Metrics

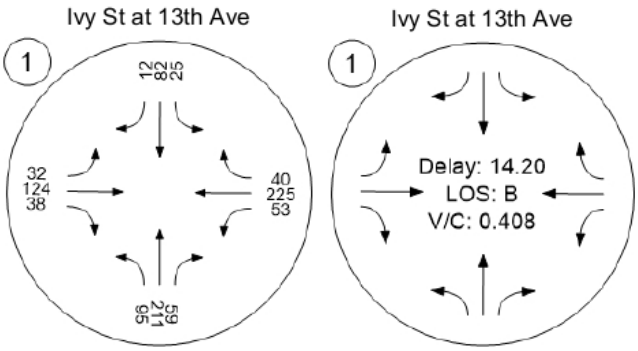


Figure 10 - 2018 AM Peak hour Counts and Metrics with Background Traffic

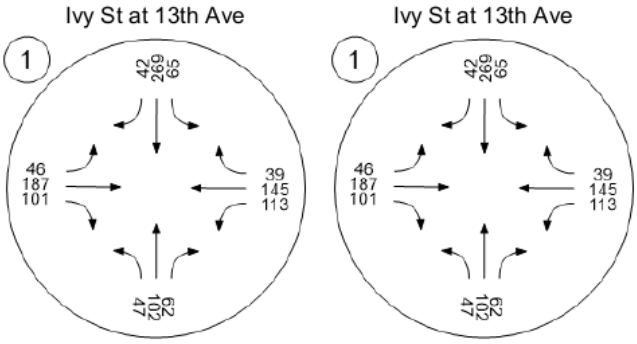


Figure 11 - 2018 PM Peak hour Counts and Metrics with Background Traffic

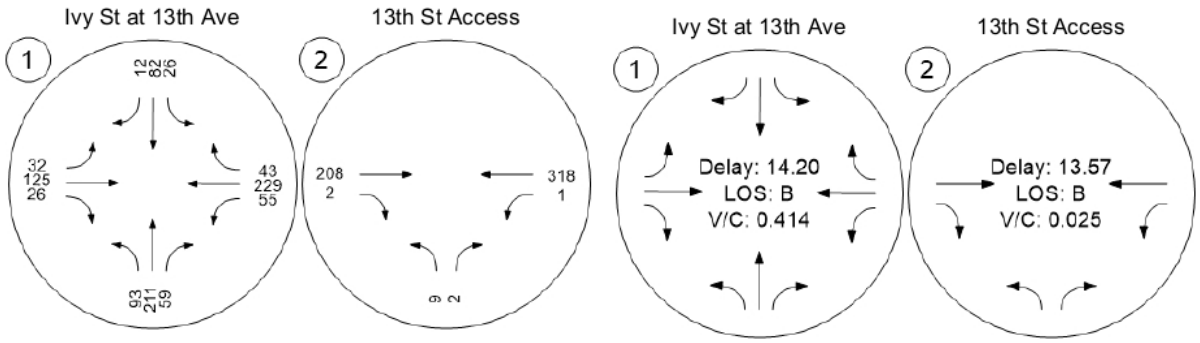


Figure 12 - 2018 AM Peak hour Counts and Metrics with 30 Ivy St Townhomes

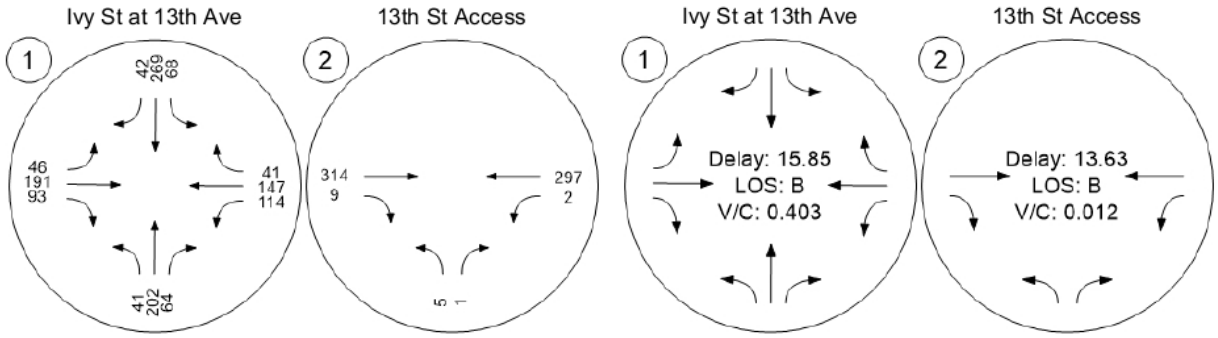


Figure 13 - 2018 PM Peak hour Counts and Metrics with 30 Ivy St Townhomes

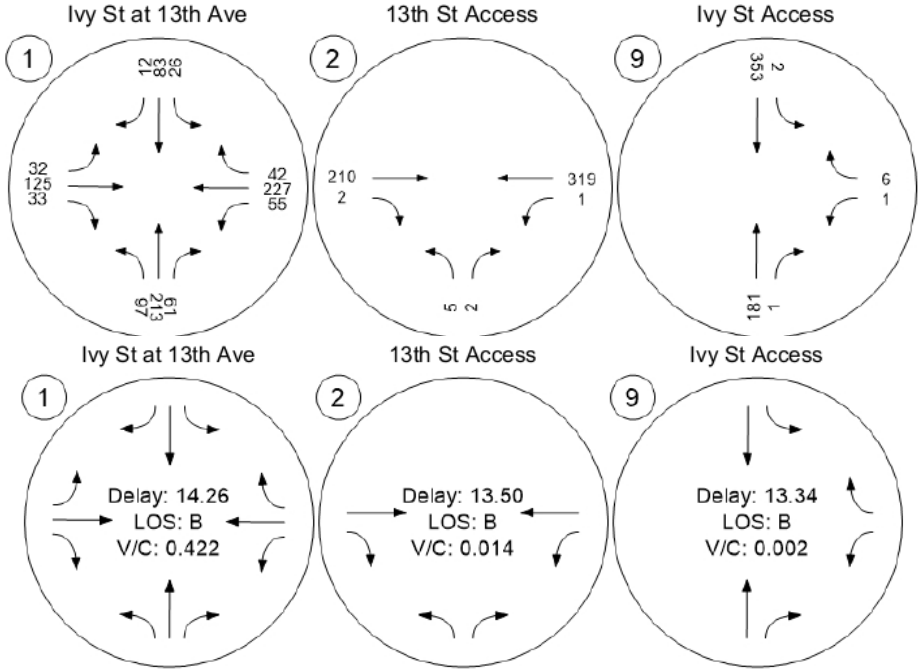


Figure 14 - 2038 AM Peak hour Counts & Metrics w 38 homes & 2 Accesses

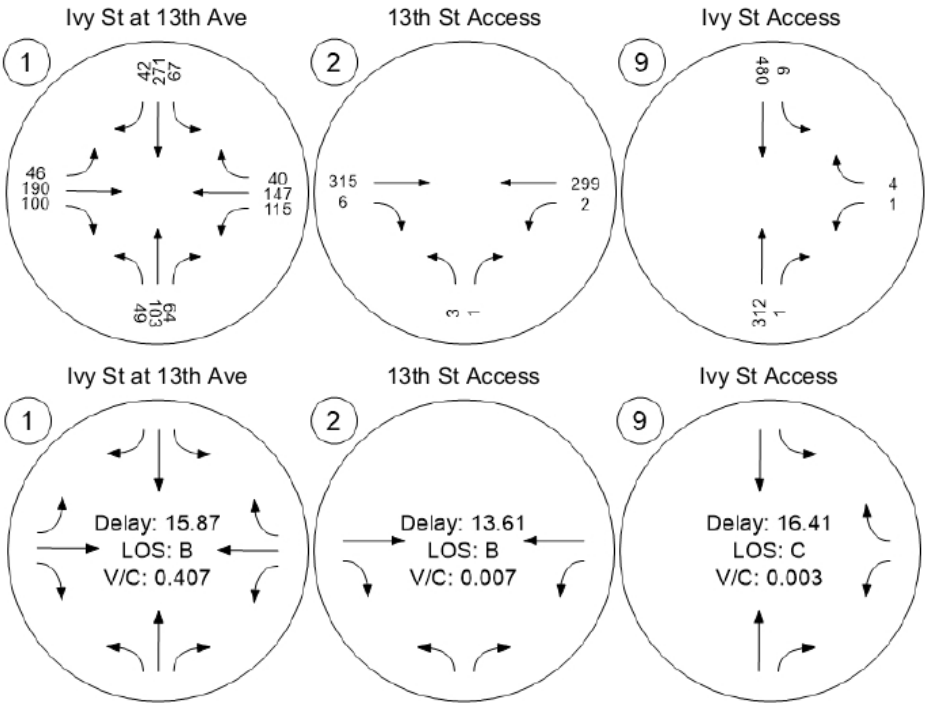


Figure 15 - 2018 PM Peak hour Counts & Metrics w 38 homes & 2 Accesses

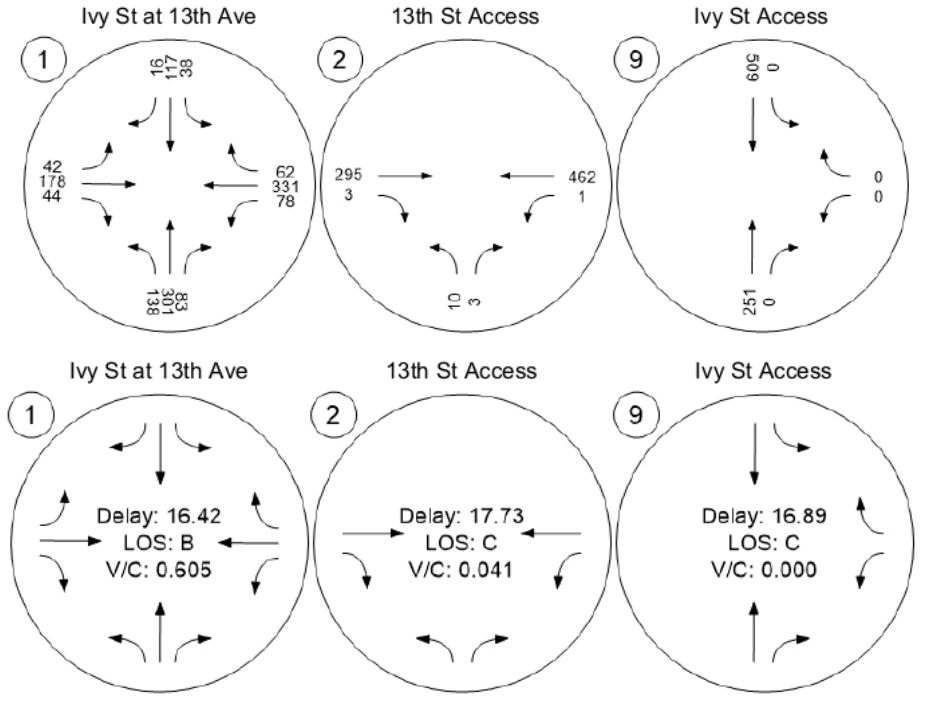


Figure 16 - 2038 AM Peak hour Counts and Metrics with 38 homes and 1 Access

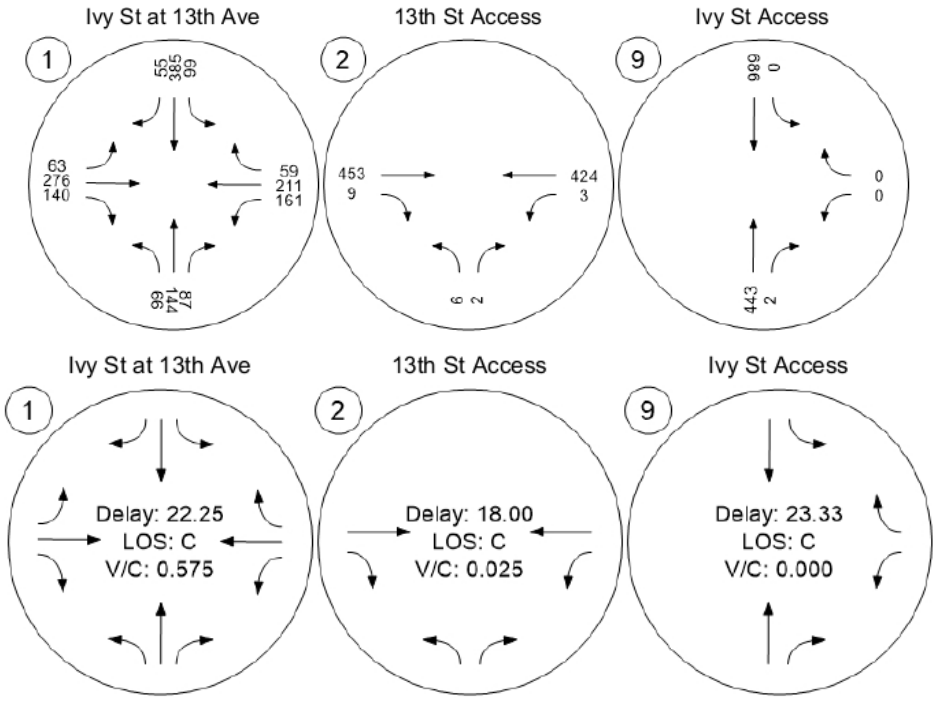


Figure 17 - 2038 PM Peak hour Counts and Metrics with 38 homes and 1 Access

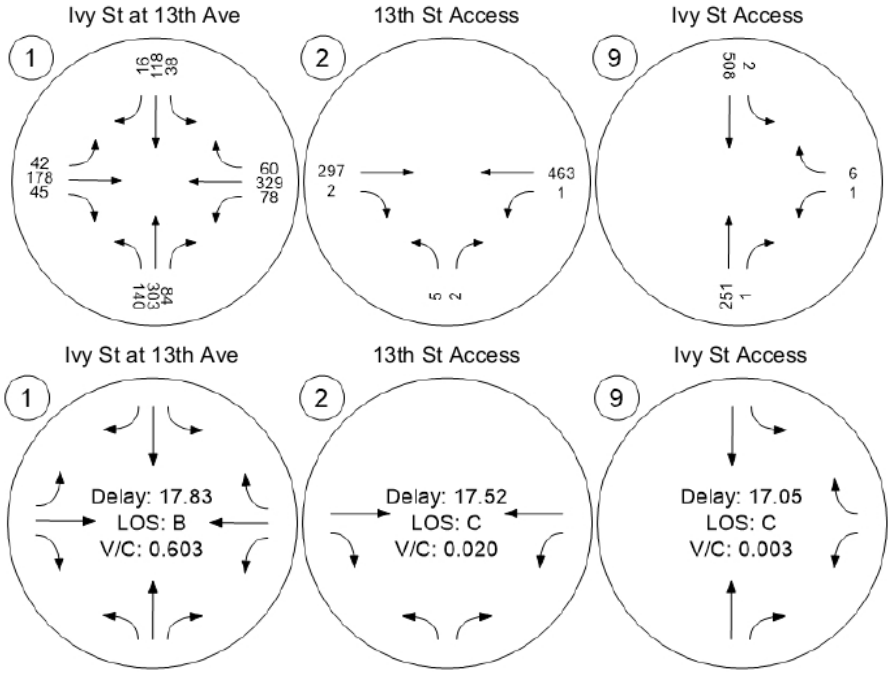


Figure 18 - 2038 AM Peak hour Counts and Metrics with 38 homes & 2 Accesses

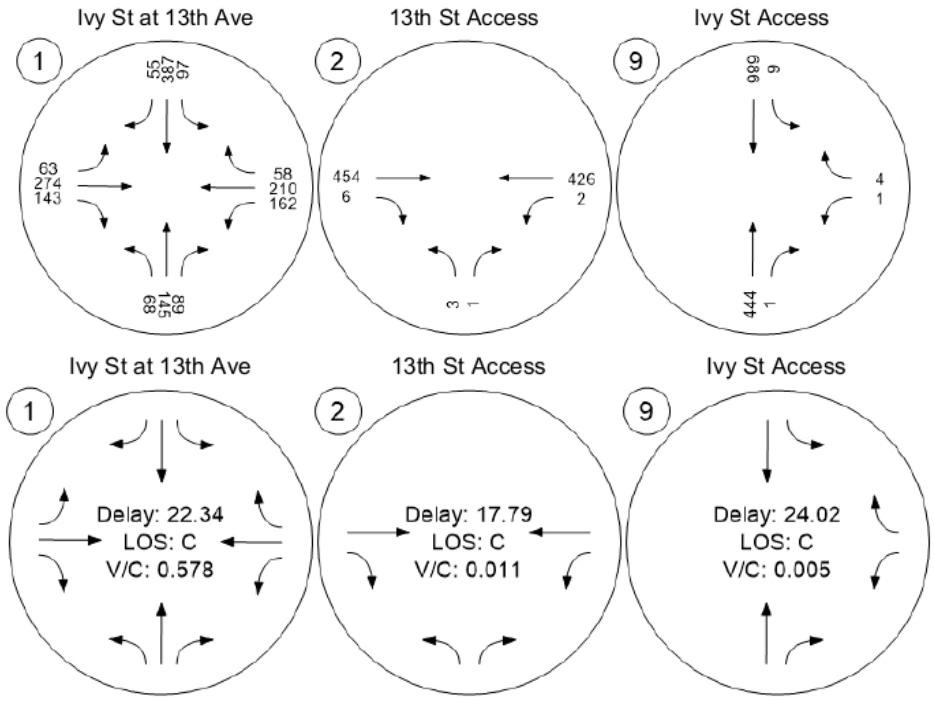


Figure 19 - 2038 AM Peak hour Counts and Metrics with 38 homes & 2 Accesses

Mitigation, Parking, and Spacing:

All studied intersections will function within established performance standards. No mitigation is required, though the no parking policy along the project site frontage of 13th Ave and Ivy St should continue. The site driveways should be kept clear of visual obstructions (e.g. landscaping, objects, etc.) that could potentially limit vehicle sight distance at the new intersections. The access(es) to the site should be located as far from Ivy St at 13th Ave intersection as reasonably possible. It is noted that no access to the site can meet the current spacing standards (330' for the City of Canby and 400' for Clackamas County) and a spacing variance can be granted without compromising safety at the intersections.

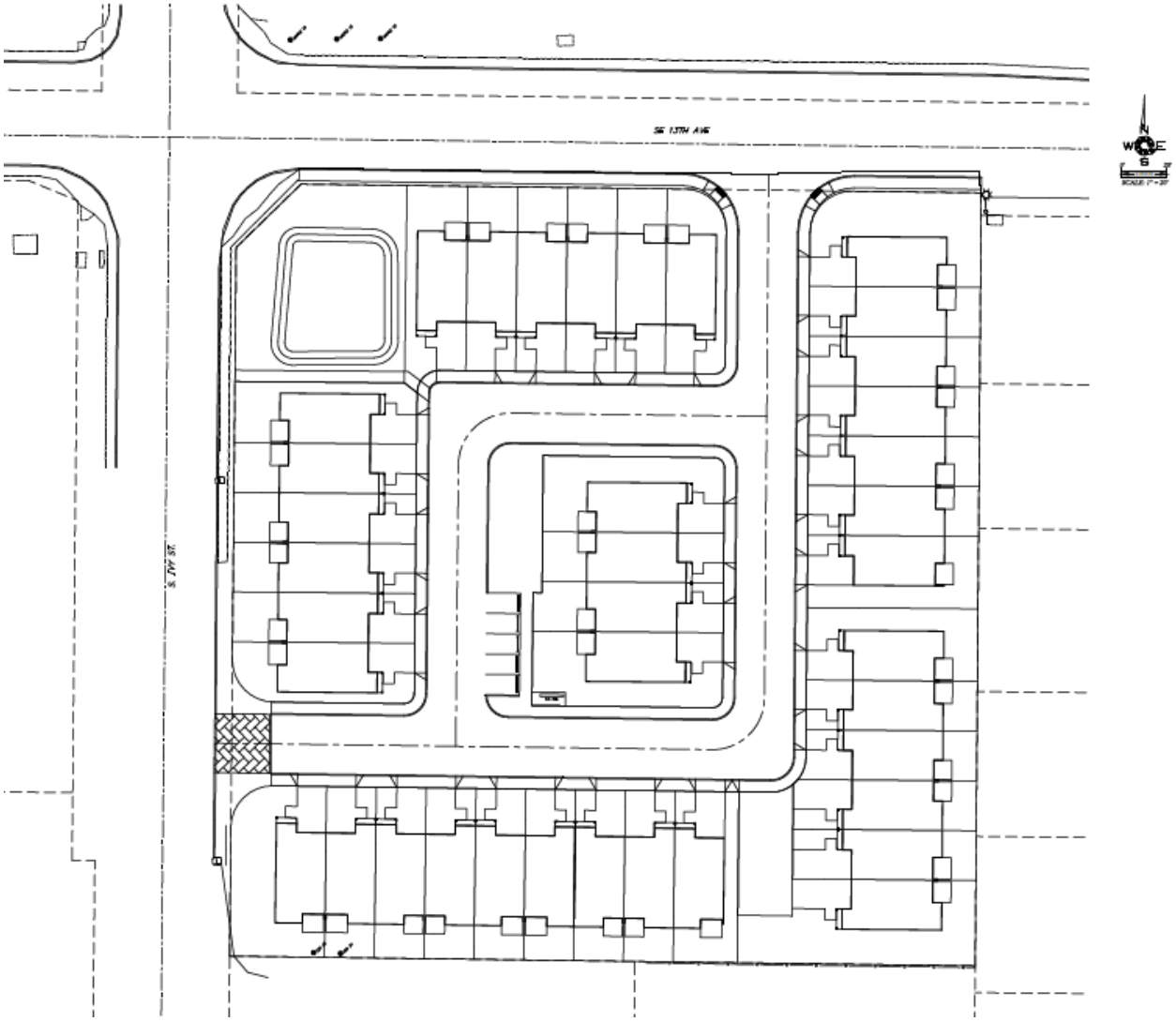
Preliminary plans for the Ivy St Townhomes include a garage at each home and an additional 20' driveway to accommodate parking a vehicle off the street. Additional parking is available on interior streets for guests. The City of Canby requires 2 parking spaces per dwelling and this standard is met.

The internal streets in the project are designed to meet current City of Canby design standards and to provide circulation and access for vehicles entering the site. Making turns in the site should not be problem even for trucks if parking is not permitted along the curb at corners in the site.

Ivy St south of 13th Ave is in the jurisdiction of Clackamas County. 13th Ave is a City of Canby street. The City standard for spacing is 330' for a driveway onto an arterial street. Vehicles queue at the traffic signal at Ivy St at 13th Ave waiting for the light to turn green. Excessive queues can be problematic at busy intersections. The year 2038 95th %ile queue estimated for the westbound right/thru approach lane

at the intersection in this study will 227' during the AM Peak hour. A 230' queue is estimated to store 9.1 vehicles and is not expected to block any existing (or proposed) driveways.

Preliminary Site Plan:

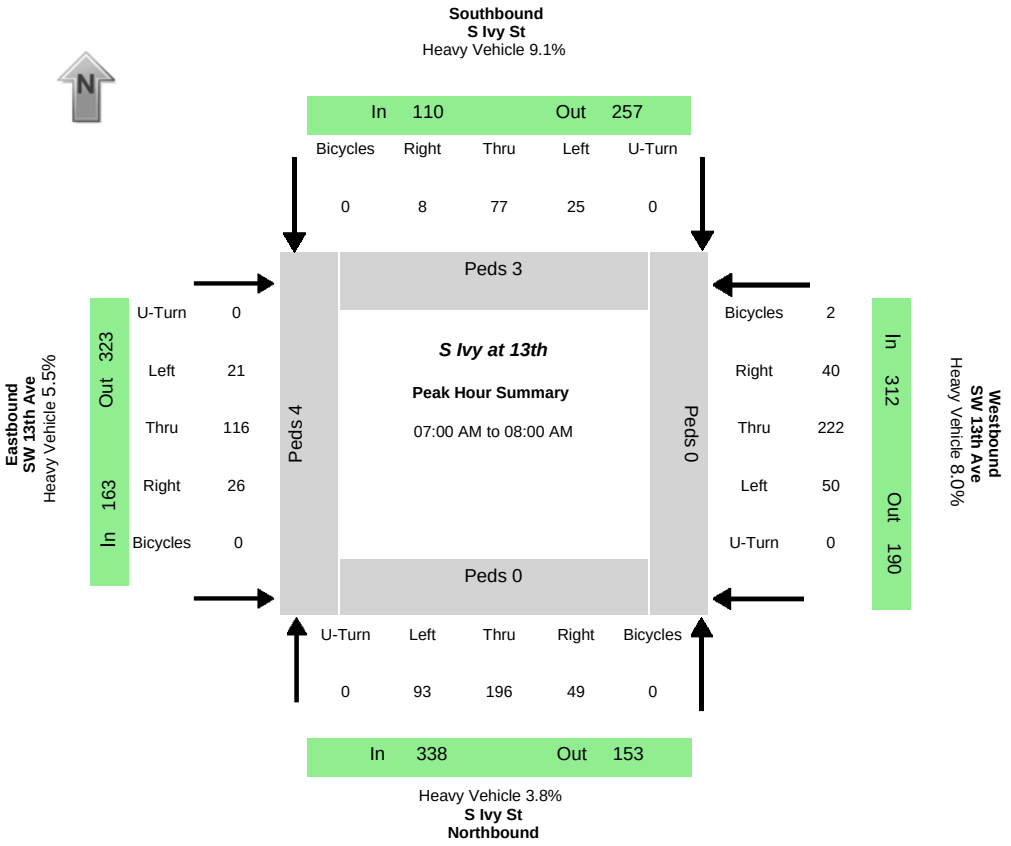


Appendix:

Turning movement counts, ODOT Crash Data and technical analysis are included on the pages following this report.

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	45.252159 - -122.686956
Start Date	Wednesday, May 16, 2018
Start Time	07:00:00 AM
Weather	
Study ID #	
Peak Hour Start	07:00:00 AM
Peak 15 Min Start	07:20:00 AM
PHF (15-Min Int)	0.83



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
93	196	49	0	25	77	8	0	21	116	26	0	50	222	40	0	338	110	163	312	153	257	323	190

Percent Heavy Vehicles

5.4%	3.1%	4.1%	0.0%	0.0%	9.1%	37.5%	0.0%	0.0%	6.0%	7.7%	0.0%	10.0%	7.2%	10.0%	0.0%	3.8%	9.1%	5.5%	8.0%	9.2%	3.9%	7.4%	4.7%

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	2	0	0	2

PHV - Pedestrians

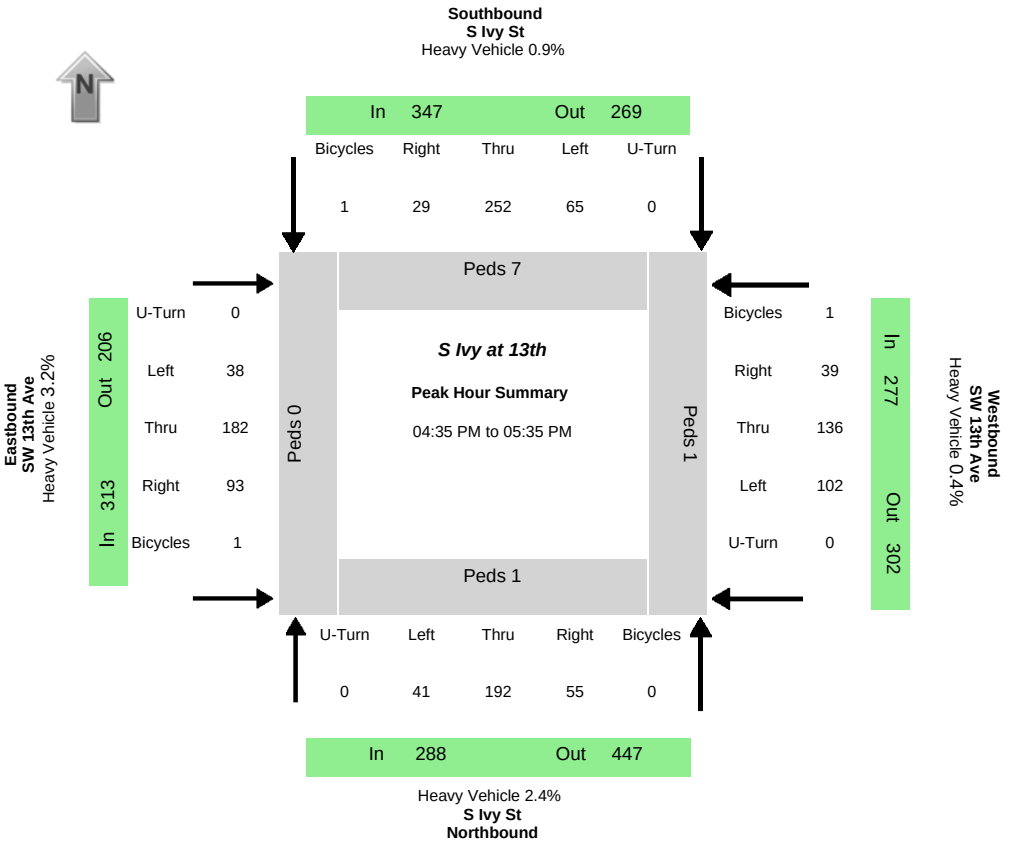
in Crosswalk				
NB	SB	EB	WB	**Sum**
0	3	4	0	7

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	8	26	2	0	0	6	1	0	1	4	1	0	7	23	4	0		
07:05:00 AM	5	12	3	0	2	5	0	0	1	3	1	0	3	16	4	0		
07:10:00 AM	5	16	2	0	3	7	1	0	2	9	1	0	3	18	4	0	209	
07:15:00 AM	10	15	8	0	3	4	1	0	1	17	2	0	3	20	2	0	212	
07:20:00 AM	16	13	5	0	2	6	0	0	0	9	1	0	4	27	3	0	243	
07:25:00 AM	10	20	6	0	2	4	1	0	3	13	2	0	2	33	2	0	270	
07:30:00 AM	10	12	9	0	6	6	1	0	2	7	1	0	7	29	4	0	278	
07:35:00 AM	3	13	8	0	2	11	1	0	0	11	3	0	5	18	3	0	270	
07:40:00 AM	2	15	2	0	1	7	0	0	0	16	3	0	4	10	2	0	234	
07:45:00 AM	10	23	1	0	1	5	1	0	2	11	5	0	7	9	4	0	219	
07:50:00 AM	8	17	2	0	3	9	1	0	7	8	2	0	3	9	2	0	212	
07:55:00 AM	6	14	1	0	0	7	0	0	2	8	4	0	2	10	6	0	210	923
08:00:00 AM	3	20	4	0	1	7	1	0	4	6	3	0	4	3	6	0	193	902
08:05:00 AM	8	11	4	0	1	13	1	0	0	7	2	0	1	7	1	1	179	904
08:10:00 AM	5	18	4	0	2	8	2	0	1	4	3	0	1	6	3	0	176	890
08:15:00 AM	4	12	2	0	3	8	0	0	2	6	5	0	2	14	1	0	173	863
08:20:00 AM	3	12	5	0	1	12	2	0	4	5	1	0	2	9	4	0	176	837
08:25:00 AM	4	22	2	0	2	9	1	0	2	11	0	0	2	7	5	0	186	806
08:30:00 AM	4	17	2	0	2	6	0	0	1	1	0	0	3	11	4	0	178	763
08:35:00 AM	5	18	6	0	4	9	3	0	9	5	4	0	8	11	4	0	204	771
08:40:00 AM	4	12	6	0	4	12	1	0	8	7	0	0	5	15	5	0	216	788
08:45:00 AM	7	17	4	0	3	9	0	0	10	7	2	0	4	11	11	0	250	794
08:50:00 AM	6	24	3	0	5	8	2	0	6	9	3	0	2	13	13	0	258	817
08:55:00 AM	6	15	1	0	4	17	1	0	9	11	5	0	4	14	13	0	279	857

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	45.252159 - -122.686956
Start Date	Wednesday, May 16, 2018
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:35:00 PM
Peak 15 Min Start	05:10:00 PM
PHF (15-Min Int)	0.92



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
41	192	55	0	65	252	29	0	38	182	93	0	102	136	39	0	288	346	313	277	447	269	206	302
Percent Heavy Vehicles																							
4.9%	1.0%	5.5%	0.0%	0.0%	1.2%	0.0%	0.0%	0.0%	3.8%	3.2%	0.0%	0.0%	0.7%	0.0%	0.0%	2.4%	0.9%	3.2%	0.4%	1.3%	0.7%	1.5%	3.3%

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	1	0	0	0	1	0	0	0	1	0	0	3	1	7	0	1	9

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	3	14	5	0	9	17	3	0	0	14	10	0	6	15	6	0		
04:05:00 PM	5	17	6	0	3	15	1	0	5	15	10	0	9	14	5	0		
04:10:00 PM	3	21	7	0	5	16	5	0	2	13	7	0	8	7	5	0	306	
04:15:00 PM	5	19	5	0	3	15	4	0	1	12	6	0	8	8	3	0	293	
04:20:00 PM	13	20	6	0	1	16	2	0	0	18	9	0	5	7	1	0	286	
04:25:00 PM	8	19	6	0	2	14	1	0	2	18	8	0	5	16	3	0	289	
04:30:00 PM	3	11	4	0	3	17	2	0	5	21	11	0	7	14	4	0	302	
04:35:00 PM	7	15	7	0	7	21	0	0	3	20	7	0	4	15	1	0	311	
04:40:00 PM	8	19	9	0	6	21	2	0	3	8	5	0	8	13	2	0	313	
04:45:00 PM	4	14	5	0	1	21	3	0	3	18	6	0	12	11	3	0	312	
04:50:00 PM	2	22	4	0	1	18	5	0	6	8	6	0	7	5	4	0	293	
04:55:00 PM	2	11	3	0	4	24	2	0	5	15	5	0	5	12	0	0	277	1185
05:00:00 PM	2	25	2	0	0	23	3	0	1	13	2	0	15	15	2	0	279	1186
05:05:00 PM	1	14	3	0	3	19	5	0	3	18	9	0	8	11	1	0	286	1176
05:10:00 PM	1	15	4	0	7	26	1	0	3	11	11	0	17	9	3	0	306	1185
05:15:00 PM	2	16	5	0	11	24	1	0	3	15	12	0	5	13	4	0	314	1207
05:20:00 PM	5	17	5	0	11	18	3	0	3	13	10	0	7	10	11	0	332	1222
05:25:00 PM	1	9	4	0	4	23	4	0	4	21	7	0	6	11	4	0	322	1218
05:30:00 PM	6	15	4	0	10	14	0	0	1	22	13	0	8	11	4	0	319	1224
05:35:00 PM	6	18	6	0	9	18	2	0	4	14	5	0	9	7	3	0	307	1218
05:40:00 PM	4	14	10	0	6	12	1	0	4	19	13	0	4	6	2	0	304	1209
05:45:00 PM	0	8	4	0	6	15	2	0	5	20	9	0	6	5	3	0	279	1191
05:50:00 PM	2	15	9	0	10	12	2	0	1	13	6	0	5	8	5	0	266	1191
05:55:00 PM	5	14	5	0	7	11	3	0	4	15	8	0	9	7	3	0	262	1194

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

SE 13TH AVE at IVY ST, City of Canby, Clackamas County, 01/01/2012 to 12/31/2016

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2016														
SIDESWIPE - MEETING	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	1	2	0	2	0	1	1	1	1	2	0	0
YEAR 2016 TOTAL	**0**	**1**	**2**	**3**	**0**	**2**	**0**	**2**	**1**	**2**	**1**	**3**	**0**	**0**
YEAR: 2015														
ANGLE	0	2	0	2	0	2	0	1	1	0	2	2	0	0
YEAR 2015 TOTAL	**0**	**2**	**0**	**2**	**0**	**2**	**0**	**1**	**1**	**0**	**2**	**2**	**0**	**0**
YEAR: 2012														
ANGLE	0	1	0	1	0	1	0	0	1	1	0	1	0	0
YEAR 2012 TOTAL	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**0**	**1**	**1**	**0**	**1**	**0**	**0**
FINAL TOTAL	**0**	**4**	**2**	**6**	**0**	**5**	**0**	**3**	**3**	**3**	**3**	**6**	**0**	**0**

Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\AM Existing.pdf

Scenario 1 AM Existing
7/6/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ivy St at 13th Ave	Signalized	HCM 6th Edition	EB Left	0.386	14.3	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Ivy St at 13th Ave

Control Type:	Signalized	Delay (sec / veh):	14.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.386

Intersection Setup

Name				Ivy St			13th Ave			13th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name				Ivy St			13th Ave			13th Ave		
Base Volume Input [veh/h]	93	196	49	25	77	8	21	116	26	50	222	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.80	3.80	3.80	9.10	9.10	9.10	5.50	5.50	5.50	8.00	8.00	8.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	93	196	49	25	77	8	21	116	26	50	222	40
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	59	15	8	23	2	6	35	8	15	67	12
Total Analysis Volume [veh/h]	112	236	59	30	93	10	25	140	31	60	267	48
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	19	0	0	19	0	0	41	0	0	41	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	35	35	35	35	17	17	17	17
g / C, Green / Cycle	0.59	0.59	0.59	0.59	0.28	0.28	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.10	0.18	0.03	0.07	0.03	0.11	0.06	0.20
s, saturation flow rate [veh/h]	1145	1602	920	1560	931	1585	1040	1560
c, Capacity [veh/h]	727	941	550	917	173	442	279	435
d1, Uniform Delay [s]	7.34	6.26	8.79	5.46	27.41	17.48	22.82	19.54
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.45	0.87	0.19	0.25	0.38	0.55	0.38	2.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.15	0.31	0.05	0.11	0.14	0.39	0.21	0.72
d, Delay for Lane Group [s/veh]	7.79	7.13	8.98	5.71	27.79	18.03	23.20	21.83
Lane Group LOS	A	A	A	A	C	B	C	C
Critical Lane Group	No	Yes	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	0.70	1.67	0.21	0.50	0.35	1.86	0.76	3.98
50th-Percentile Queue Length [ft]	17.59	41.66	5.36	12.55	8.85	46.59	18.99	99.38
95th-Percentile Queue Length [veh]	1.27	3.00	0.39	0.90	0.64	3.35	1.37	7.16
95th-Percentile Queue Length [ft]	31.66	74.99	9.64	22.59	15.93	83.86	34.18	178.88

Movement, Approach, & Intersection Results

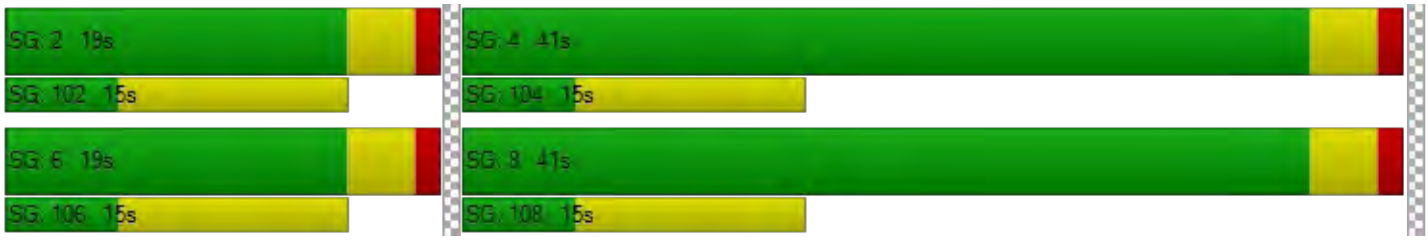
d_M, Delay for Movement [s/veh]	7.79	7.13	7.13	8.98	5.71	5.71	27.79	18.03	18.03	23.20	21.83	21.83
Movement LOS	A	A	A	A	A	A	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	7.31			6.45			19.28			22.05		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	14.29											
Intersection LOS	B											
Intersection V/C	0.386											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.198	2.100	2.239	2.127
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	500	1233	1233
d_b, Bicycle Delay [s]	16.88	16.88	4.41	4.41
l_b,int, Bicycle LOS Score for Intersection	2.782	2.330	2.617	2.913
Bicycle LOS	C	B	B	C

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\AM Existing.pdf

Scenario 1 AM Existing
7/6/2018

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	93	196	49	25	77	8	21	116	26	50	222	40	923

Ivy St Townhomes TIA - 18-387

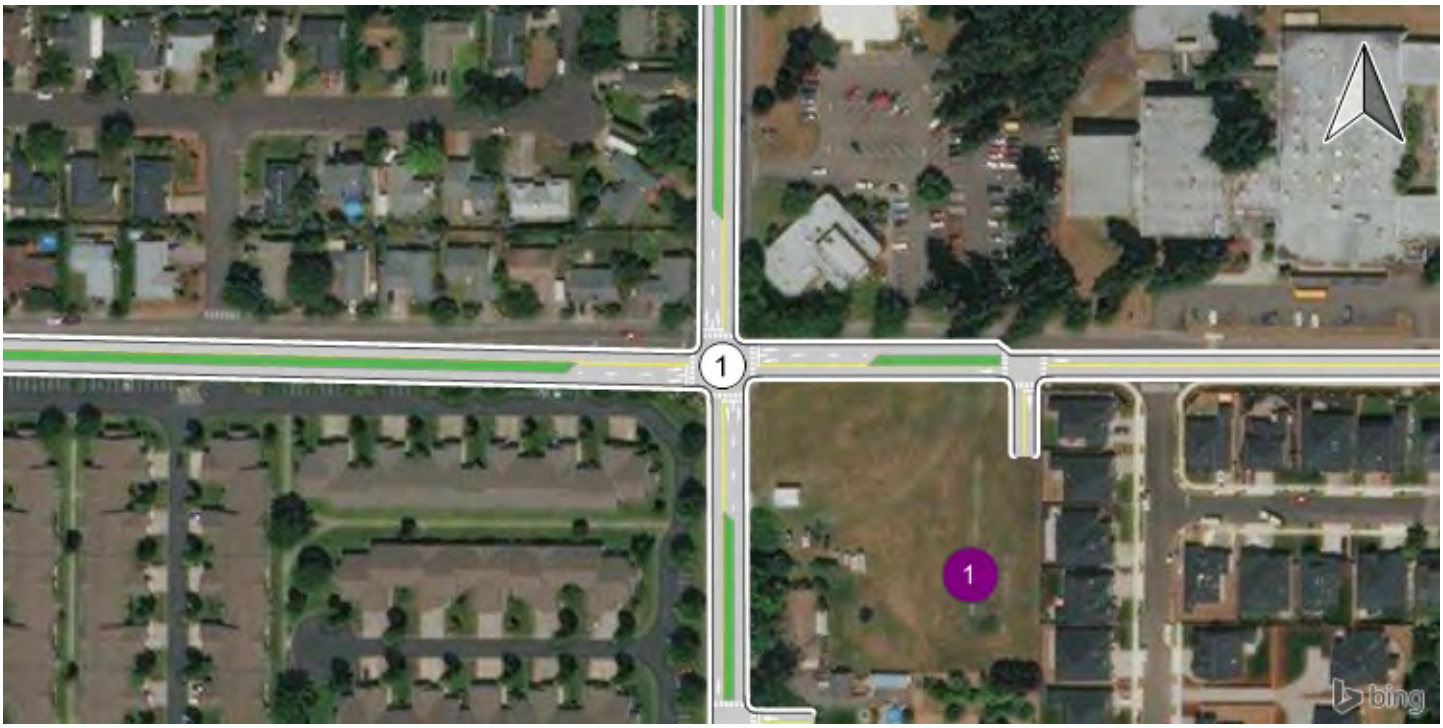
Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\AM Existing.pdf

Scenario 1 AM Existing
7/6/2018

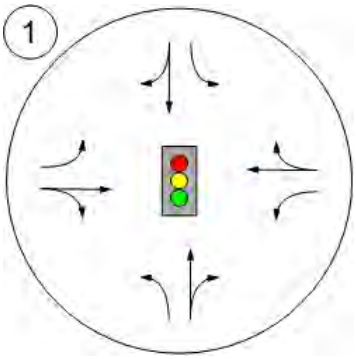
Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	Final Base	93	196	49	25	77	8	21	116	26	50	222	40	923
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**93**	**196**	**49**	**25**	**77**	**8**	**21**	**116**	**26**	**50**	**222**	**40**	**923**

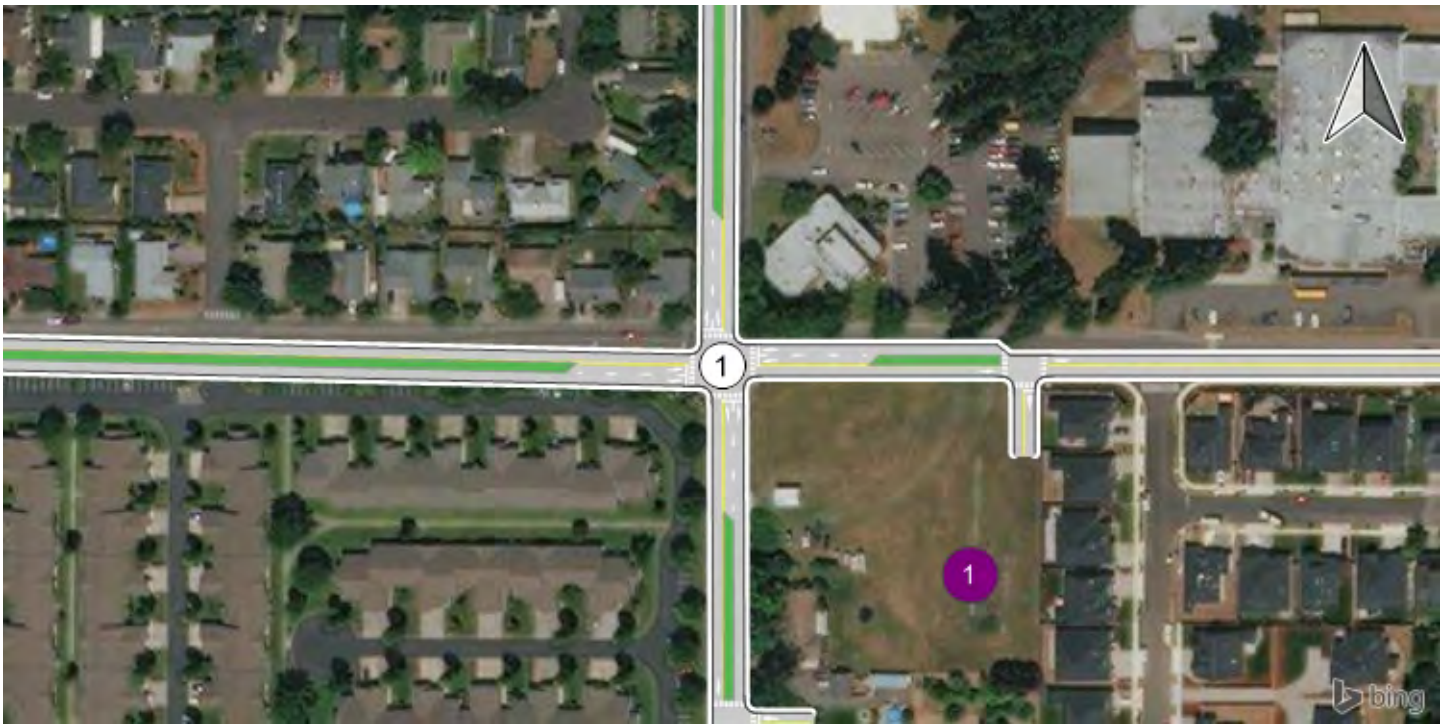
Report Figure 1: Lane Configuration and Traffic Control



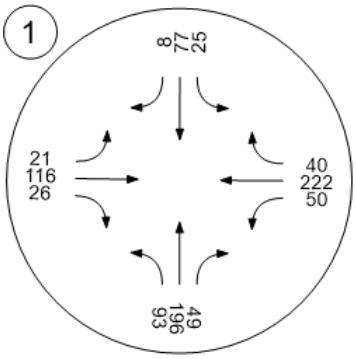
Ivy St at 13th Ave



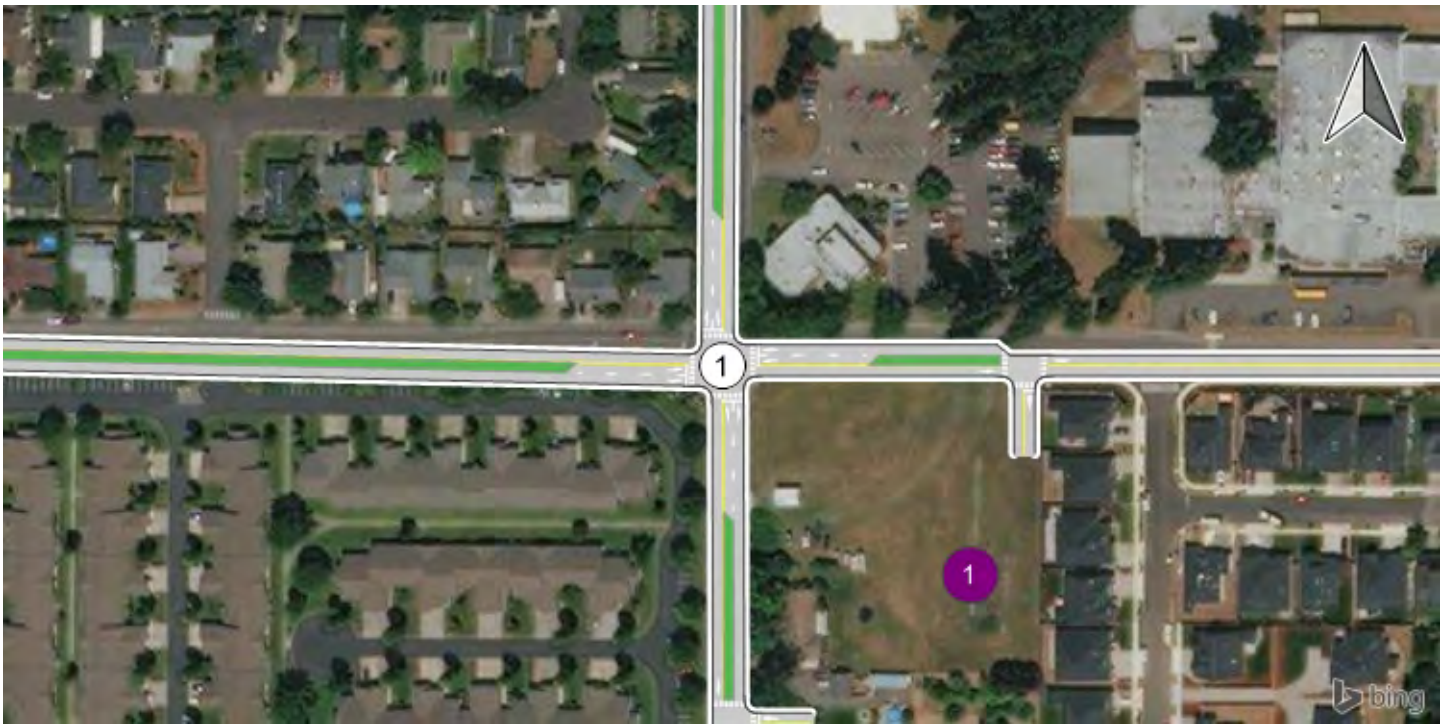
Report Figure 2a: Traffic Volume - Base Volume



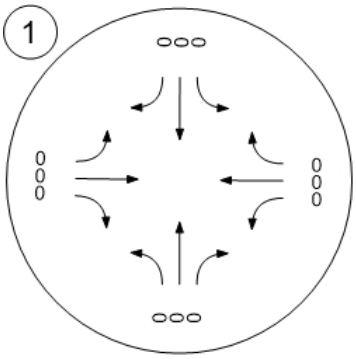
Ivy St at 13th Ave



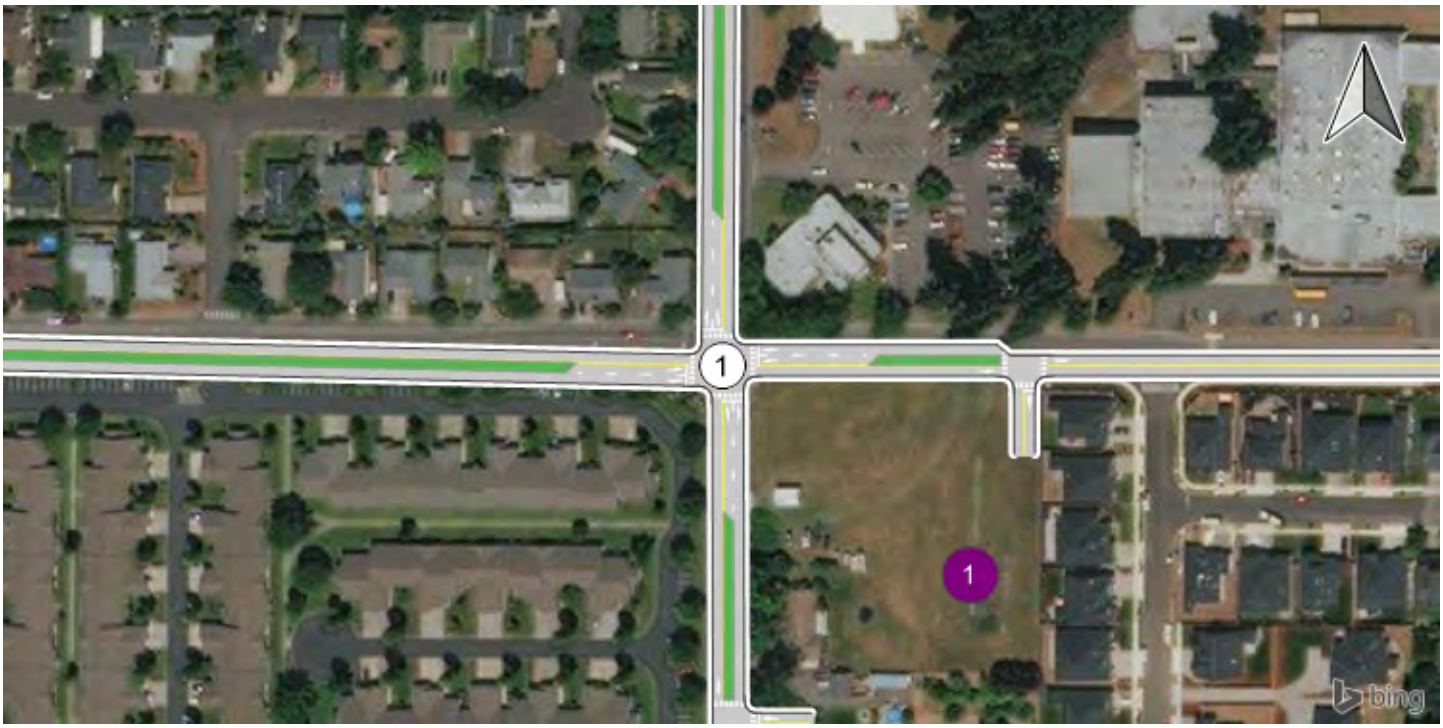
Report Figure 2d: Traffic Volume - Net New Site Trips



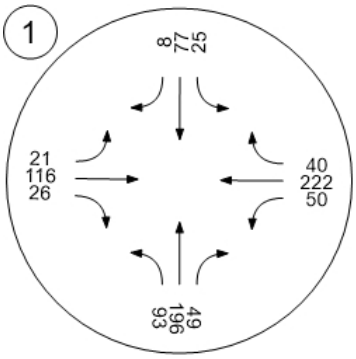
Ivy St at 13th Ave



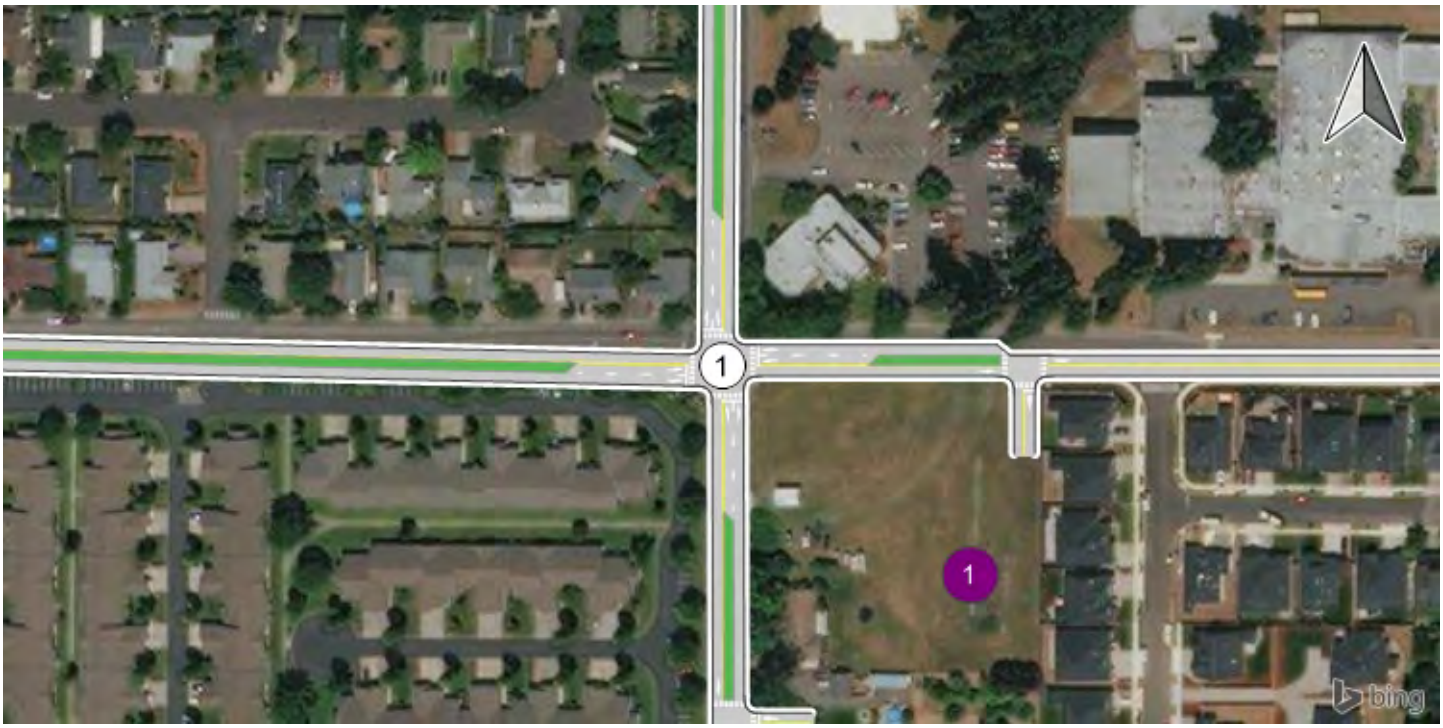
Report Figure 2f: Traffic Volume - Future Total Volume



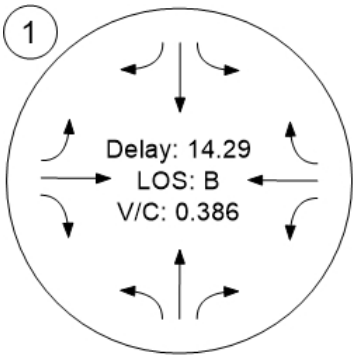
Ivy St at 13th Ave



Report Figure 3: Traffic Conditions



Ivy St at 13th Ave



Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\PM Existing.pdf

Scenario 2 PM Existing
7/6/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ivy St at 13th Ave	Signalized	HCM 6th Edition	WB Left	0.362	13.7	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Ivy St at 13th Ave

Control Type:	Signalized	Delay (sec / veh):	13.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.362

Intersection Setup

Name				Ivy St			13th Ave			13th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name				Ivy St			13th Ave			13th Ave		
Base Volume Input [veh/h]	41	92	55	65	252	29	38	182	93	102	136	39
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	0.90	0.90	0.90	3.20	3.20	3.20	0.40	0.40	0.40
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	41	92	55	65	252	29	38	182	93	102	136	39
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	0.9200	1.0000	0.9200	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200
Total 15-Minute Volume [veh/h]	11	25	15	16	68	7	10	46	25	28	34	10
Total Analysis Volume [veh/h]	45	100	60	65	274	29	38	182	101	111	136	39
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	26	0	0	26	0	0	34	0	0	34	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	31	31	31	31	21	21	21	21
g / C, Green / Cycle	0.52	0.52	0.52	0.52	0.34	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.05	0.10	0.06	0.18	0.04	0.18	0.11	0.11
s, saturation flow rate [veh/h]	965	1573	1113	1670	1078	1568	999	1640
c, Capacity [veh/h]	512	826	627	876	350	536	264	561
d1, Uniform Delay [s]	11.10	7.54	9.47	8.28	19.23	15.87	24.71	14.56
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.34	0.52	0.33	1.08	0.13	0.81	1.06	0.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.09	0.19	0.10	0.35	0.11	0.53	0.42	0.31
d, Delay for Lane Group [s/veh]	11.44	8.06	9.80	9.36	19.37	16.67	25.77	14.87
Lane Group LOS	B	A	A	A	B	B	C	B
Critical Lane Group	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	0.38	1.02	0.49	2.14	0.42	2.98	1.52	1.67
50th-Percentile Queue Length [ft]	9.51	25.52	12.19	53.40	10.60	74.60	38.10	41.84
95th-Percentile Queue Length [veh]	0.68	1.84	0.88	3.84	0.76	5.37	2.74	3.01
95th-Percentile Queue Length [ft]	17.11	45.94	21.93	96.11	19.07	134.28	68.58	75.31

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.44	8.06	8.06	9.80	9.36	9.36	19.37	16.67	16.67	25.77	14.87	14.87
Movement LOS	B	A	A	A	A	A	B	B	B	C	B	B
d_A, Approach Delay [s/veh]	8.81			9.44			16.99			19.10		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	13.72											
Intersection LOS	B											
Intersection V/C	0.362											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.303	2.152	2.129	2.174
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	733	733	1000	1000
d_b, Bicycle Delay [s]	12.03	12.03	7.50	7.50
l_b,int, Bicycle LOS Score for Intersection	2.449	2.718	2.824	2.766
Bicycle LOS	B	B	C	C

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\PM Existing.pdf

Scenario 2 PM Existing
7/6/2018

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	41	92	55	65	252	29	38	182	93	102	136	39	1124

Ivy St Townhomes TIA - 18-387

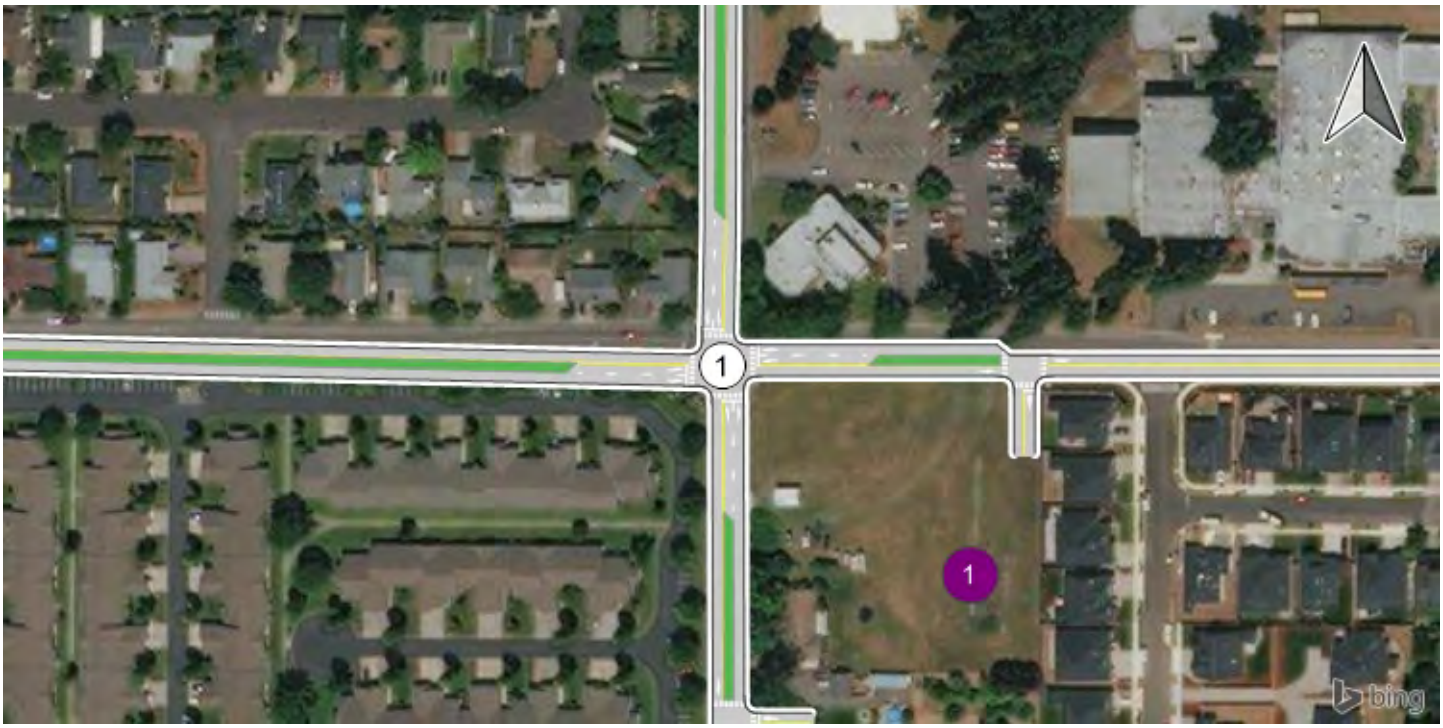
Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\PM Existing.pdf

Scenario 2 PM Existing
7/6/2018

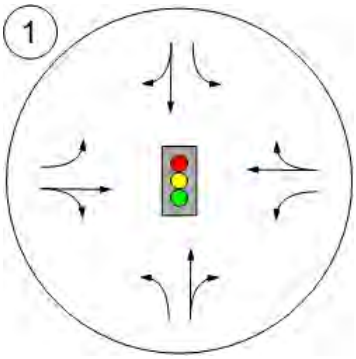
Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	Final Base	41	92	55	65	252	29	38	182	93	102	136	39	1124
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**41**	**92**	**55**	**65**	**252**	**29**	**38**	**182**	**93**	**102**	**136**	**39**	**1124**

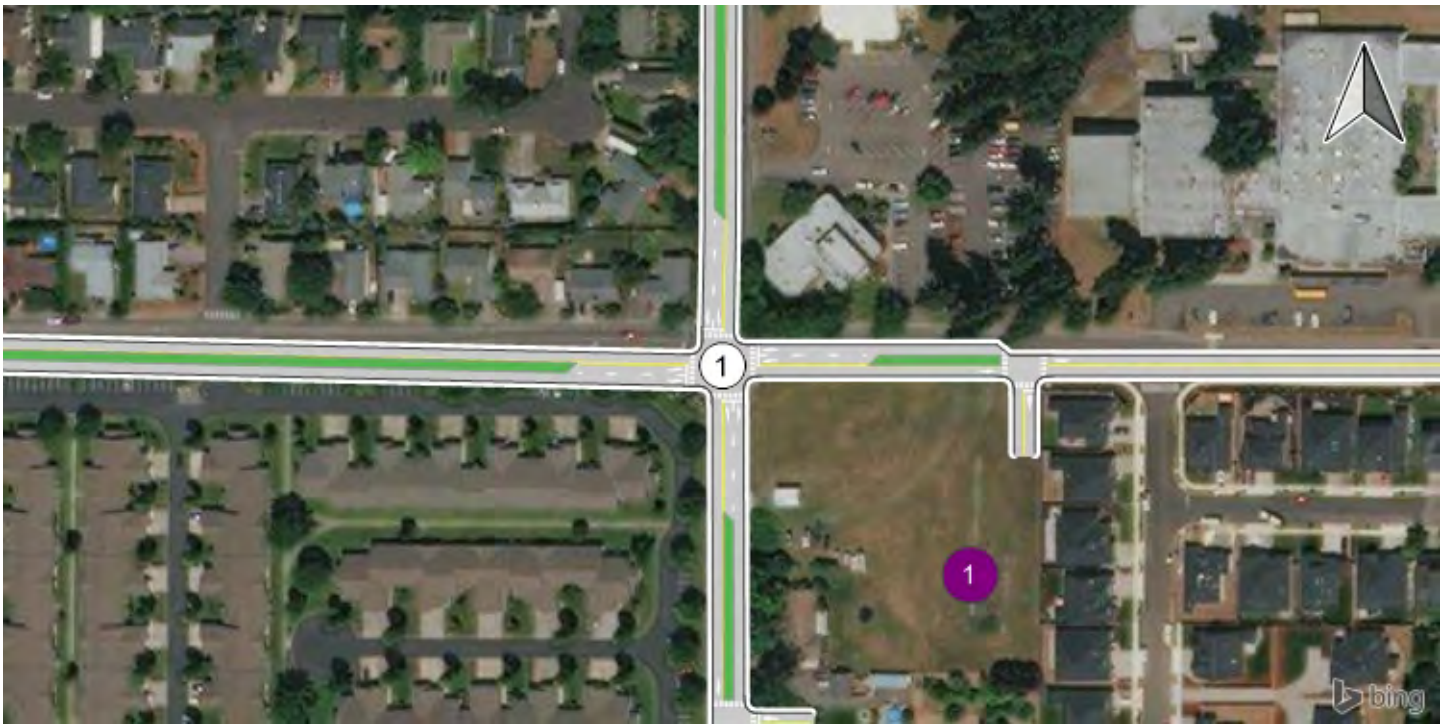
Report Figure 1: Lane Configuration and Traffic Control



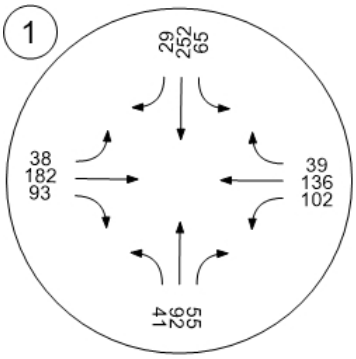
Ivy St at 13th Ave



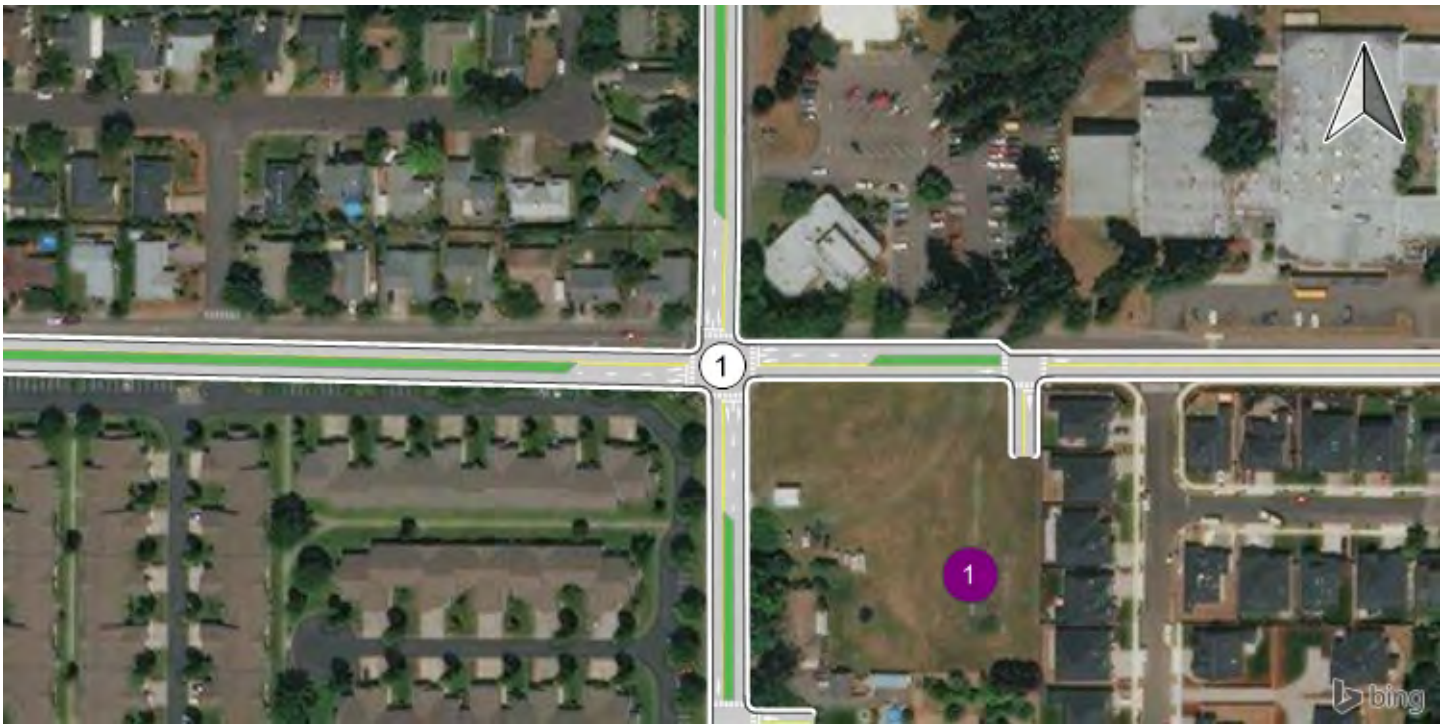
Report Figure 2a: Traffic Volume - Base Volume



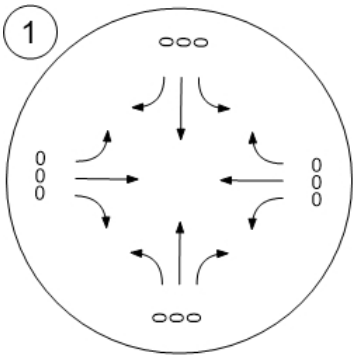
Ivy St at 13th Ave



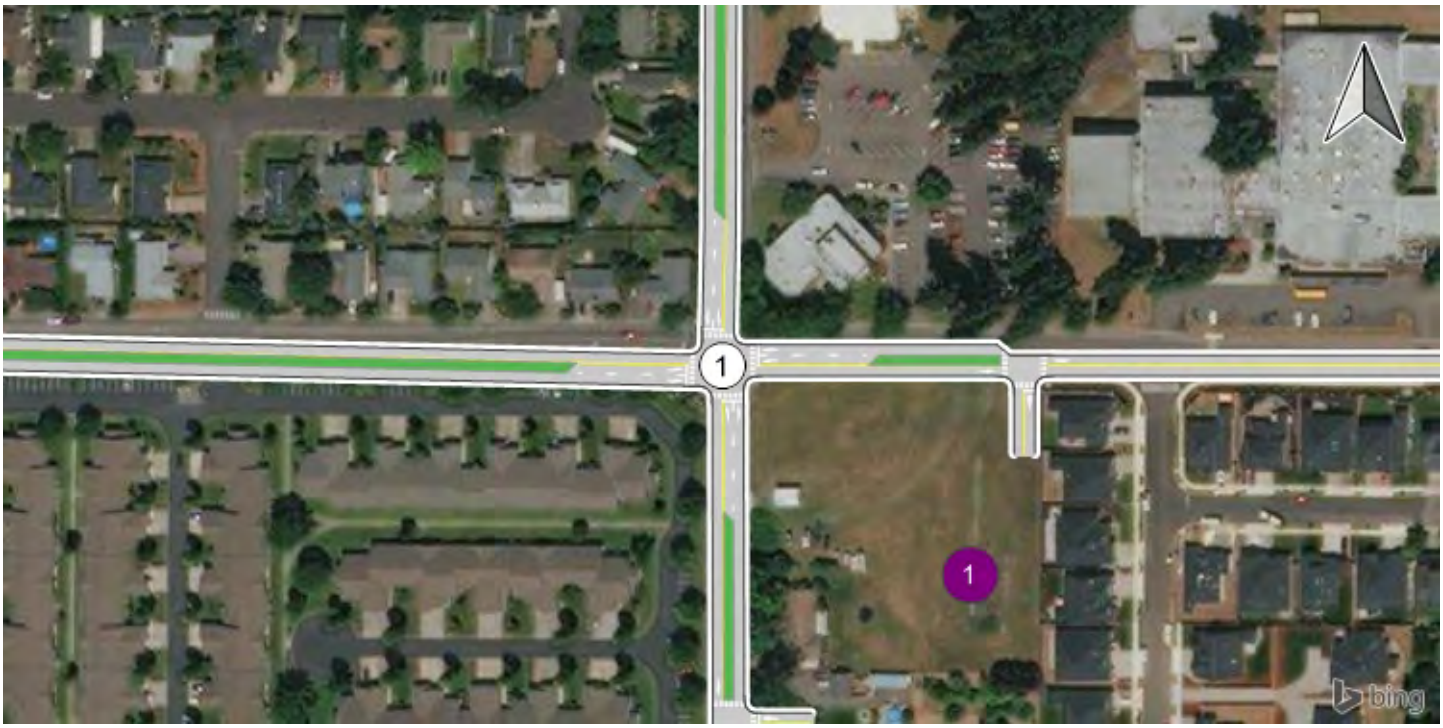
Report Figure 2d: Traffic Volume - Net New Site Trips



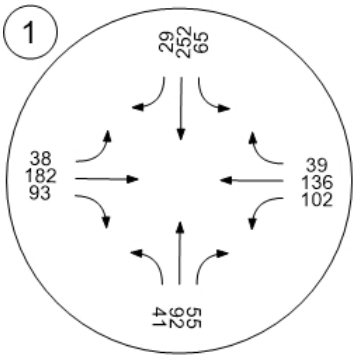
Ivy St at 13th Ave



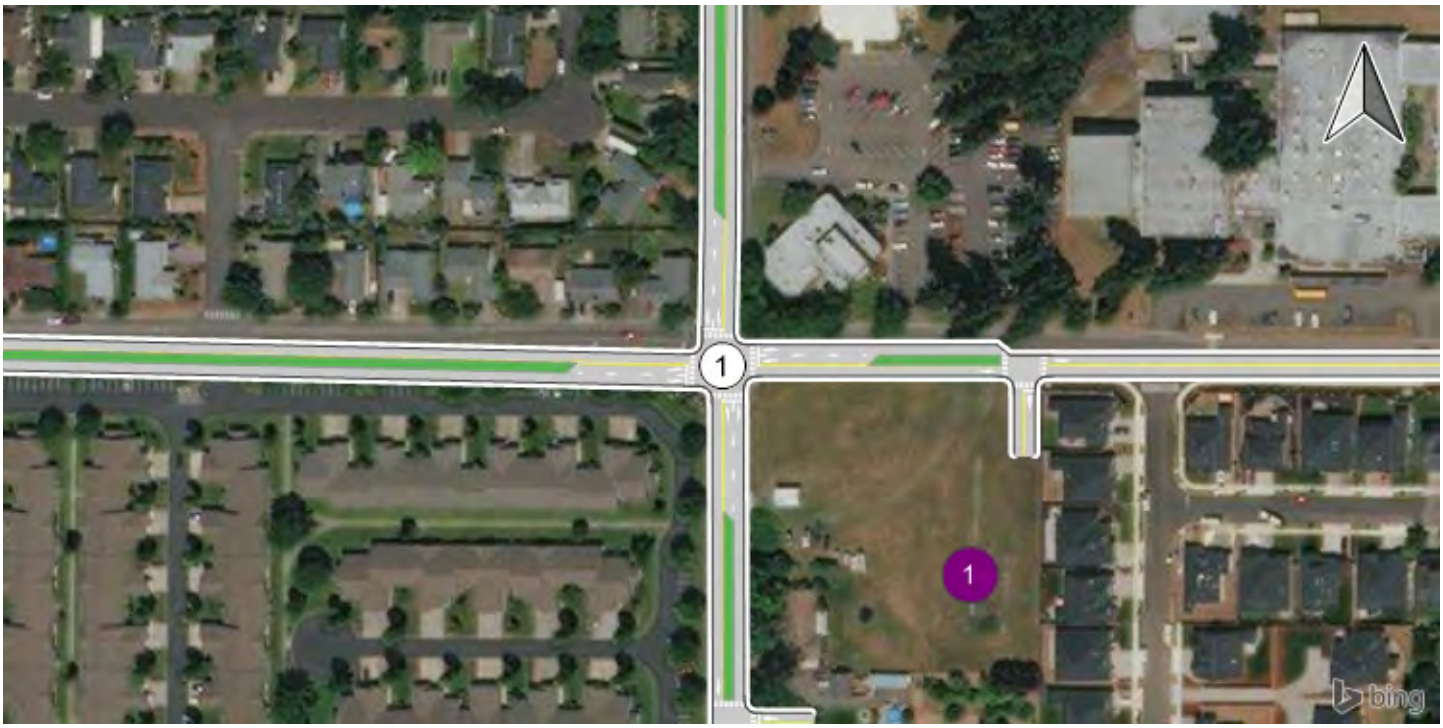
Report Figure 2f: Traffic Volume - Future Total Volume



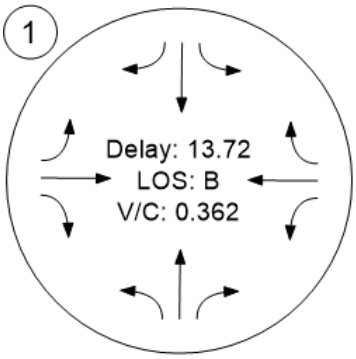
Ivy St at 13th Ave



Report Figure 3: Traffic Conditions



Ivy St at 13th Ave



Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\AM Background.pdf
Scenario 3 AM Background
7/6/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ivy St at 13th Ave	Signalized	HCM 6th Edition	EB Left	0.408	14.2	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Ivy St at 13th Ave

Control Type:	Signalized	Delay (sec / veh):	14.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.408

Intersection Setup

Name				Ivy St			13th Ave			13th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name				Ivy St			13th Ave			13th Ave		
Base Volume Input [veh/h]	93	196	49	25	77	8	21	116	26	50	222	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.80	3.80	3.80	9.10	9.10	9.10	5.50	5.50	5.50	8.00	8.00	8.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	15	10	0	5	4	11	8	12	3	3	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	95	211	59	25	82	12	32	124	38	53	225	40
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	64	18	8	25	4	10	37	11	16	68	12
Total Analysis Volume [veh/h]	114	254	71	30	99	14	39	149	46	64	271	48
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	19	0	0	19	0	0	41	0	0	41	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	34	34	34	34	18	18	18	18
g / C, Green / Cycle	0.57	0.57	0.57	0.57	0.30	0.30	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.10	0.20	0.03	0.07	0.04	0.12	0.06	0.20
s, saturation flow rate [veh/h]	1135	1597	895	1553	928	1570	1017	1560
c, Capacity [veh/h]	696	903	508	879	191	473	282	470
d1, Uniform Delay [s]	8.09	7.11	9.98	6.10	26.70	16.74	22.65	18.43
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.51	1.12	0.22	0.30	0.52	0.58	0.41	1.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.16	0.36	0.06	0.13	0.20	0.41	0.23	0.68
d, Delay for Lane Group [s/veh]	8.60	8.22	10.20	6.41	27.22	17.32	23.06	20.16
Lane Group LOS	A	A	B	A	C	B	C	C
Critical Lane Group	No	Yes	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	0.77	2.06	0.24	0.60	0.55	2.08	0.81	3.83
50th-Percentile Queue Length [ft]	19.33	51.44	5.88	15.12	13.65	51.94	20.19	95.78
95th-Percentile Queue Length [veh]	1.39	3.70	0.42	1.09	0.98	3.74	1.45	6.90
95th-Percentile Queue Length [ft]	34.79	92.60	10.59	27.21	24.56	93.49	36.34	172.40

Movement, Approach, & Intersection Results

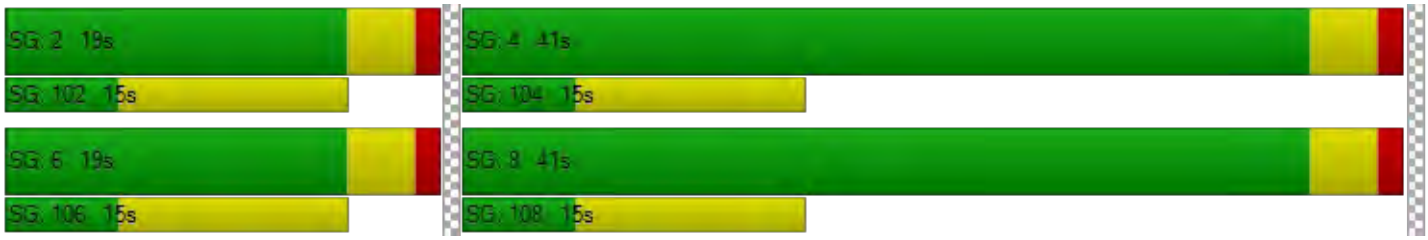
d_M, Delay for Movement [s/veh]	8.60	8.22	8.22	10.20	6.41	6.41	27.22	17.32	17.32	23.06	20.16	20.16
Movement LOS	A	A	A	B	A	A	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	8.32			7.20			18.97			20.64		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	14.20											
Intersection LOS	B											
Intersection V/C	0.408											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.223	2.134	2.254	2.135
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	500	1233	1233
d_b, Bicycle Delay [s]	16.88	16.88	4.41	4.41
l_b,int, Bicycle LOS Score for Intersection	2.835	2.346	2.680	2.926
Bicycle LOS	C	B	B	C

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\AM Background.pdf

Scenario 3 AM Background
7/6/2018

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	95	211	59	25	82	12	32	124	38	53	225	40	996

Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\AM Background.pdf
Scenario 3 AM Background
7/6/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	Final Base	93	196	49	25	77	8	21	116	26	50	222	40	923
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	2	15	10	0	5	4	11	8	12	3	3	0	73
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**95**	**211**	**59**	**25**	**82**	**12**	**32**	**124**	**38**	**53**	**225**	**40**	**996**

Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\AM Background.pdf

Scenario 3 AM Background
7/6/2018

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
7: Mayberry Group	Homes	ITE 210	Homes	0.740	89.000	25.00	75.00	16	50	66	56.41
8: Beck Pond	Homes	ite 210	Homes	0.740	69.000	25.00	75.00	13	38	51	43.59
					Added Trips Total			**29**	**88**	**117**	**100.00**

Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\AM Background.pdf

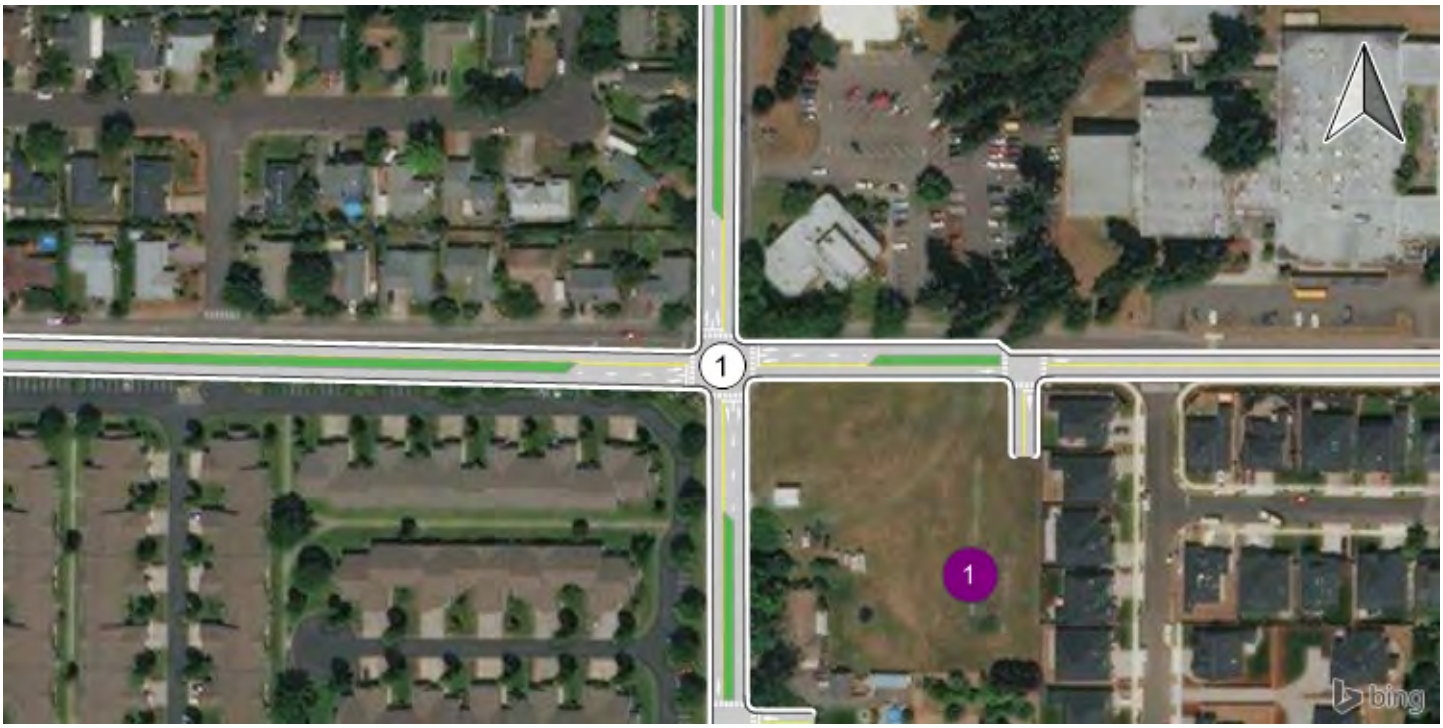
Scenario 3 AM Background
7/6/2018

Trip Distribution summary

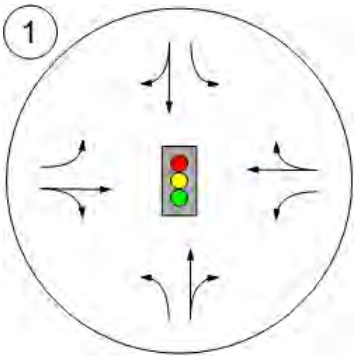
Zone / Gate	Zone 7: Mayberry Group			
	To Mayberry Group:		From Mayberry Group:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
8: Beck Pond	0.00	0	0.00	0
2: Gate	35.00	6	35.00	17
3: Gate	30.00	5	30.00	15
4: Gate	20.00	3	20.00	10
5: Gate	15.00	2	15.00	8
6: Gate	0.00	0	0.00	0
Total	**100.00**	**16**	**100.00**	**50**

Zone / Gate	Zone 8: Beck Pond			
	To Beck Pond:		From Beck Pond:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
7: Mayberry Group	0.00	0	0.00	0
2: Gate	35.00	5	35.00	13
3: Gate	30.00	4	30.00	11
4: Gate	20.00	3	20.00	8
5: Gate	15.00	2	15.00	6
6: Gate	0.00	0	0.00	0
Total	**100.00**	**14**	**100.00**	**38**

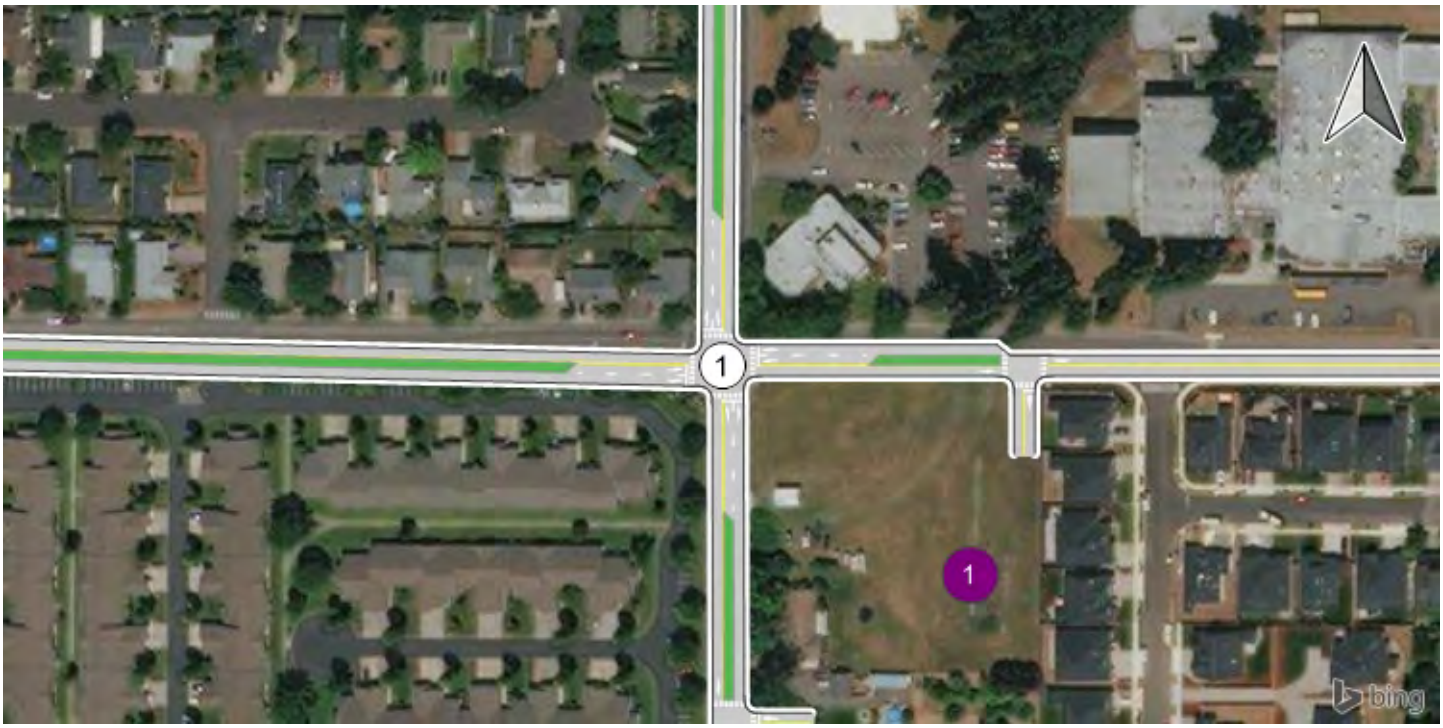
Report Figure 1: Lane Configuration and Traffic Control



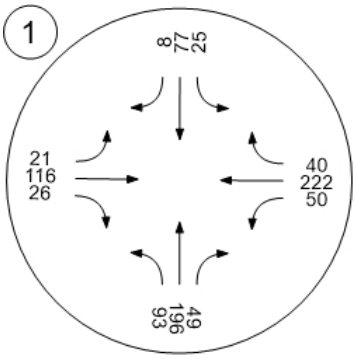
Ivy St at 13th Ave



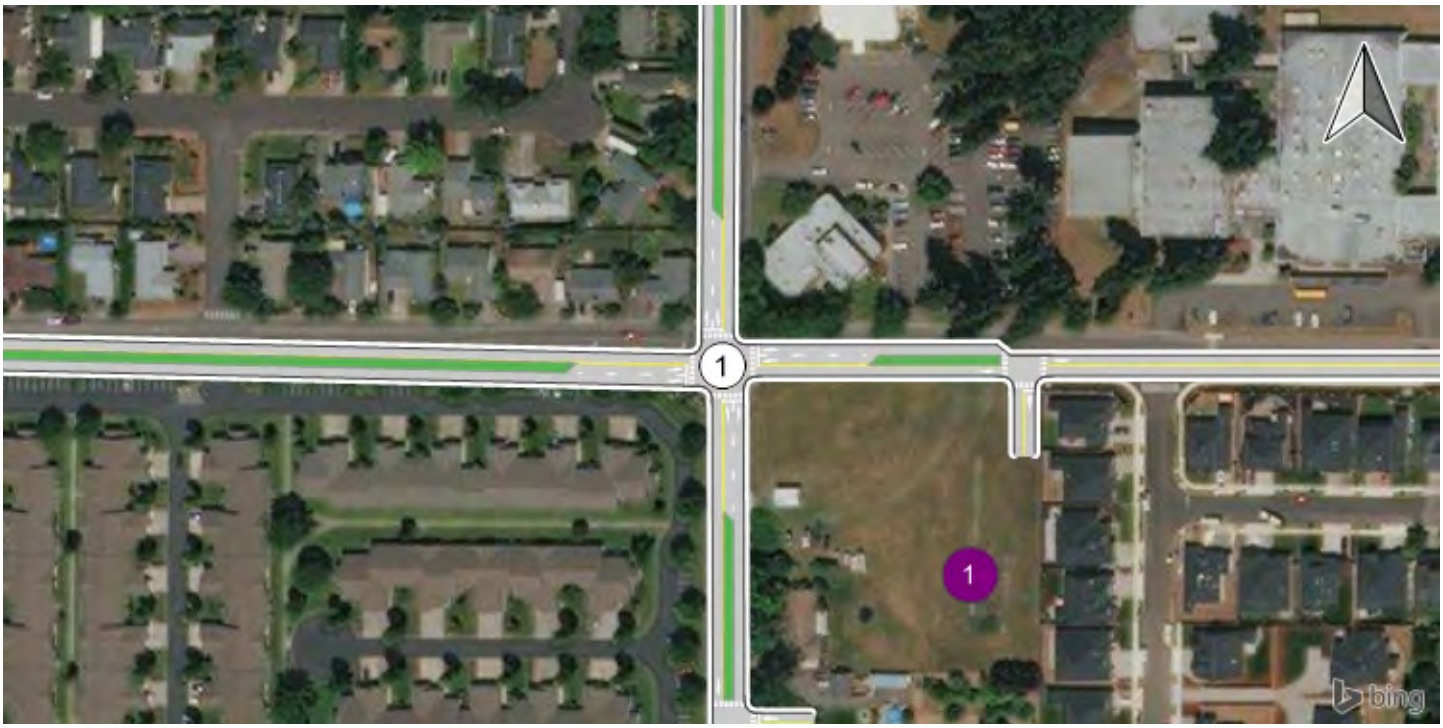
Report Figure 2a: Traffic Volume - Base Volume



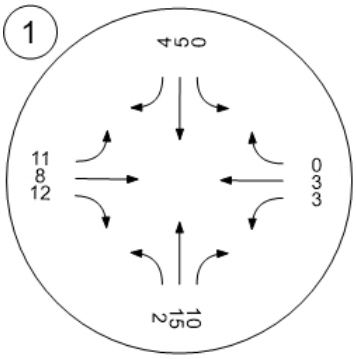
Ivy St at 13th Ave



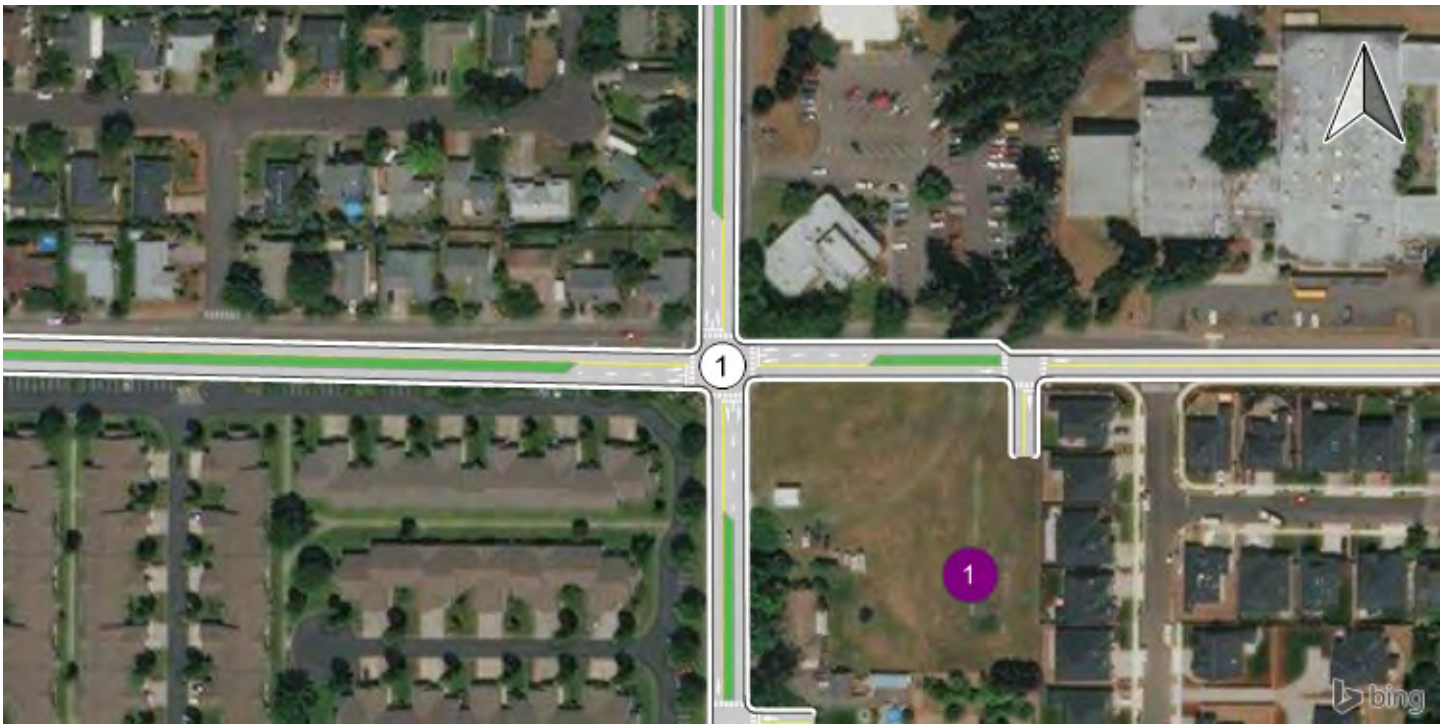
Report Figure 2d: Traffic Volume - Net New Site Trips



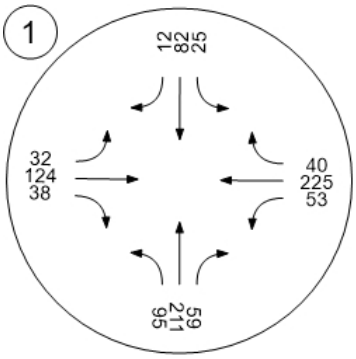
Ivy St at 13th Ave



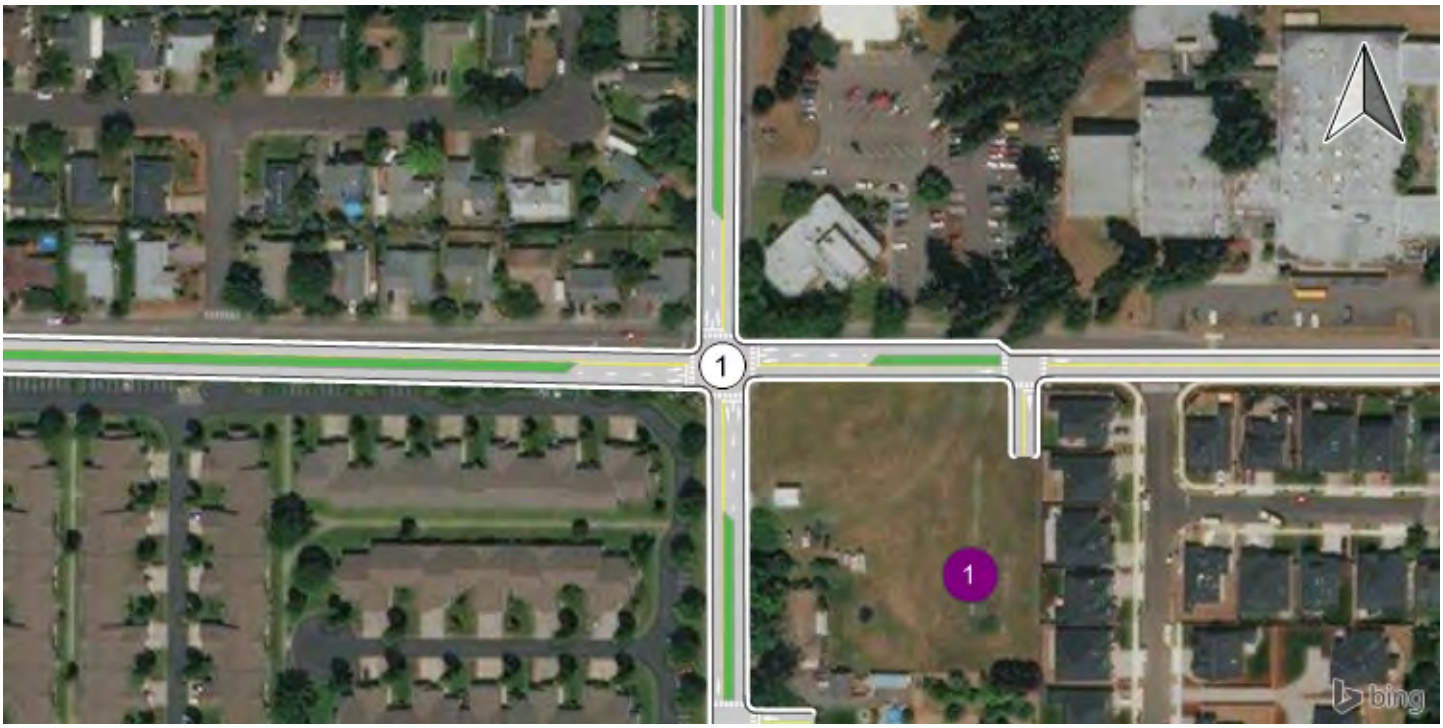
Report Figure 2f: Traffic Volume - Future Total Volume



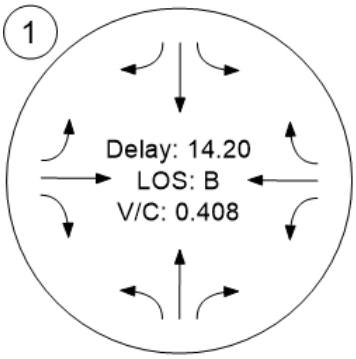
Ivy St at 13th Ave



Report Figure 3: Traffic Conditions



Ivy St at 13th Ave



Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\PM Background.pdf
Scenario 4 PM Background
7/6/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ivy St at 13th Ave	Signalized	HCM 6th Edition	WB Left	0.403	15.8	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Ivy St at 13th Ave

Control Type:	Signalized	Delay (sec / veh):	15.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.403

Intersection Setup

Name				Ivy St			13th Ave			13th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name				Ivy St			13th Ave			13th Ave		
Base Volume Input [veh/h]	41	92	55	65	252	29	38	182	93	102	136	39
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	0.90	0.90	0.90	3.20	3.20	3.20	0.40	0.40	0.40
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	10	7	0	17	13	8	5	8	11	9	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	47	102	62	65	269	42	46	187	101	113	145	39
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	28	17	18	73	11	13	51	27	31	39	11
Total Analysis Volume [veh/h]	51	111	67	71	292	46	50	203	110	123	158	42
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	34	0	0	34	0	0	36	0	0	36	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	37	37	37	37	25	25	25	25
g / C, Green / Cycle	0.52	0.52	0.52	0.52	0.36	0.36	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.05	0.11	0.06	0.20	0.05	0.20	0.13	0.12
s, saturation flow rate [veh/h]	935	1573	1095	1658	1054	1569	972	1644
c, Capacity [veh/h]	467	823	594	867	346	569	256	596
d1, Uniform Delay [s]	13.78	8.97	11.40	9.99	21.73	17.77	28.40	16.19
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.47	0.60	0.41	1.32	0.19	0.83	1.39	0.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.11	0.22	0.12	0.39	0.14	0.55	0.48	0.34
d, Delay for Lane Group [s/veh]	14.25	9.57	11.81	11.31	21.92	18.60	29.79	16.52
Lane Group LOS	B	A	B	B	C	B	C	B
Critical Lane Group	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	0.55	1.42	0.66	3.03	0.66	3.94	2.03	2.27
50th-Percentile Queue Length [ft]	13.64	35.49	16.59	75.73	16.59	98.46	50.75	56.79
95th-Percentile Queue Length [veh]	0.98	2.56	1.19	5.45	1.19	7.09	3.65	4.09
95th-Percentile Queue Length [ft]	24.55	63.88	29.87	136.31	29.86	177.22	91.34	102.22

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.25	9.57	9.57	11.81	11.31	11.31	21.92	18.60	18.60	29.79	16.52	16.52
Movement LOS	B	A	A	B	B	B	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	10.62			11.40			19.06			21.58		
Approach LOS	B			B			B			C		
d_I, Intersection Delay [s/veh]	15.85											
Intersection LOS	B											
Intersection V/C	0.403											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	26.58	26.58	26.58	26.58
l_p,int, Pedestrian LOS Score for Intersection	2.349	2.199	2.169	2.210
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	857	857	914	914
d_b, Bicycle Delay [s]	11.43	11.43	10.31	10.31
l_b,int, Bicycle LOS Score for Intersection	2.488	2.785	2.893	2.827
Bicycle LOS	B	C	C	C

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\PM Background.pdf

Scenario 4 PM Background
7/6/2018

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	47	102	62	65	269	42	46	187	101	113	145	39	1218

Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\PM Background.pdf

Scenario 4 PM Background
7/6/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	Final Base	41	92	55	65	252	29	38	182	93	102	136	39	1124
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	6	10	7	0	17	13	8	5	8	11	9	0	94
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**47**	**102**	**62**	**65**	**269**	**42**	**46**	**187**	**101**	**113**	**145**	**39**	**1218**

Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\PM Background.pdf

Scenario 4 PM Background
7/6/2018

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
7: Mayberry Group	Homes	ITE 210	Homes	0.990	89.000	63.00	37.00	55	33	88	56.41
8: Beck Pond	Homes	ite 210	Homes	0.990	69.000	63.00	37.00	43	25	68	43.59
					Added Trips Total			**98**	**58**	**156**	**100.00**

Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\PM Background.pdf

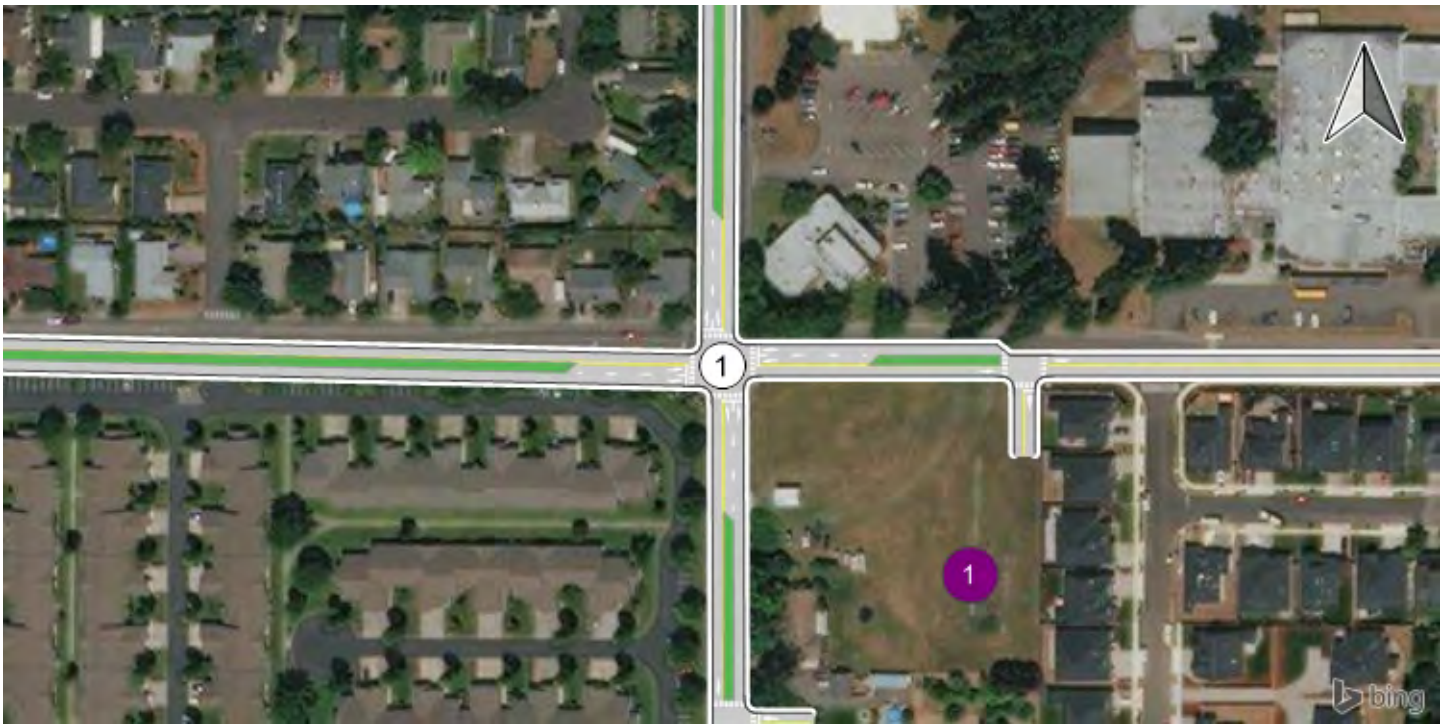
Scenario 4 PM Background
7/6/2018

Trip Distribution summary

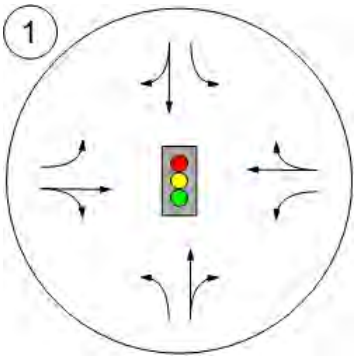
Zone / Gate	Zone 7: Mayberry Group			
	To Mayberry Group:		From Mayberry Group:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
8: Beck Pond	0.00	0	0.00	0
2: Gate	35.00	19	35.00	11
3: Gate	30.00	17	30.00	10
4: Gate	20.00	11	20.00	7
5: Gate	15.00	8	15.00	5
6: Gate	0.00	0	0.00	0
Total	**100.00**	**55**	**100.00**	**33**

Zone / Gate	Zone 8: Beck Pond			
	To Beck Pond:		From Beck Pond:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
7: Mayberry Group	0.00	0	0.00	0
2: Gate	35.00	15	35.00	8
3: Gate	30.00	13	30.00	8
4: Gate	20.00	9	20.00	5
5: Gate	15.00	6	15.00	4
6: Gate	0.00	0	0.00	0
Total	**100.00**	**43**	**100.00**	**25**

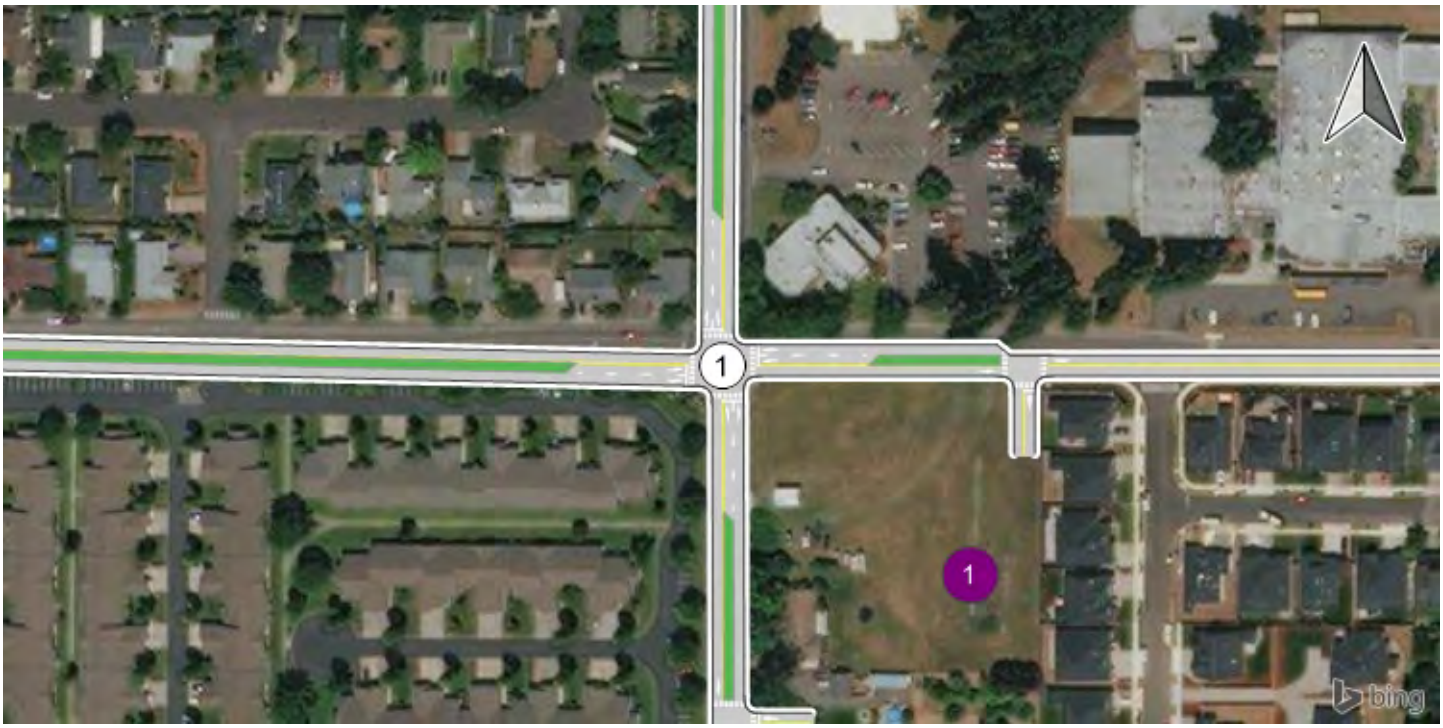
Report Figure 1: Lane Configuration and Traffic Control



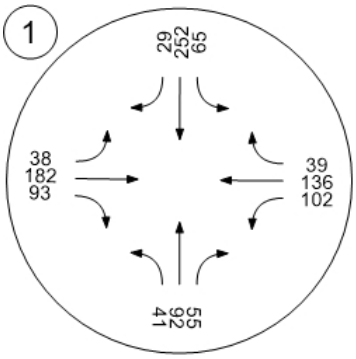
Ivy St at 13th Ave



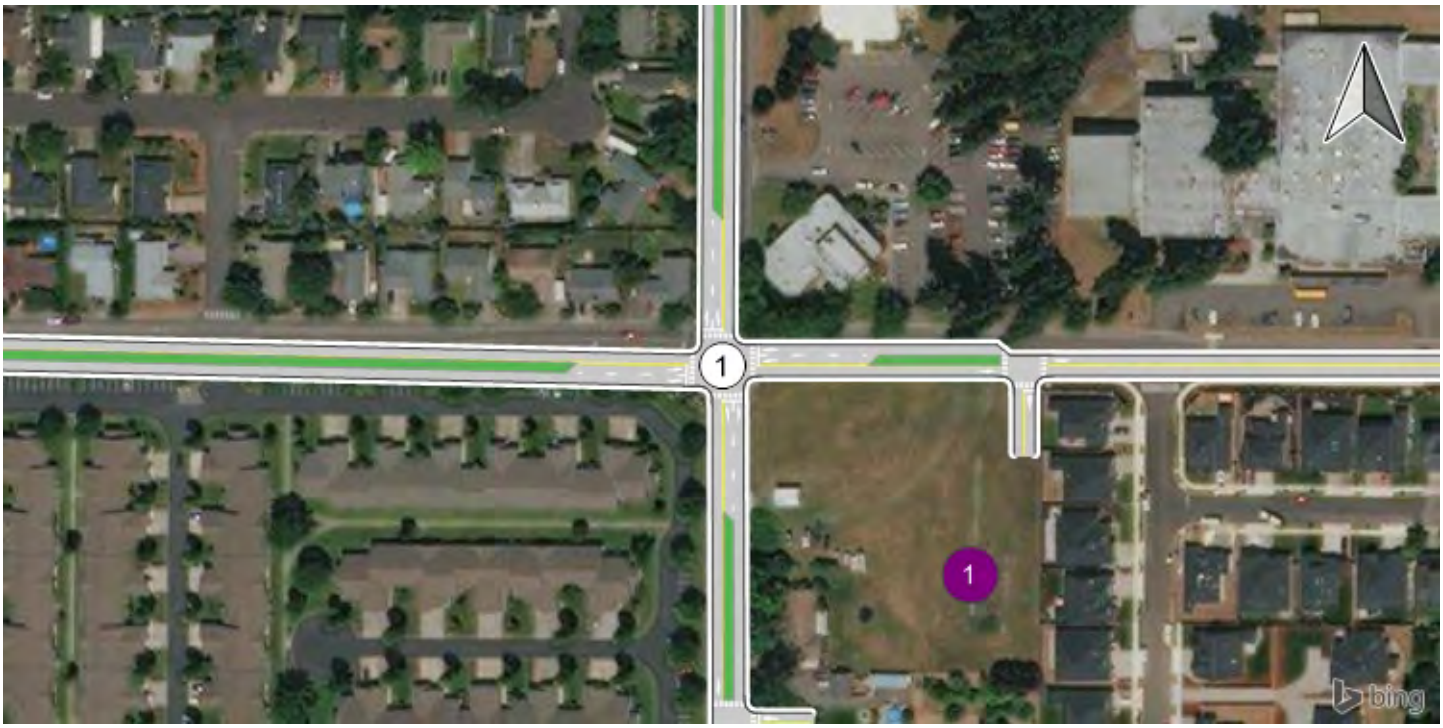
Report Figure 2a: Traffic Volume - Base Volume



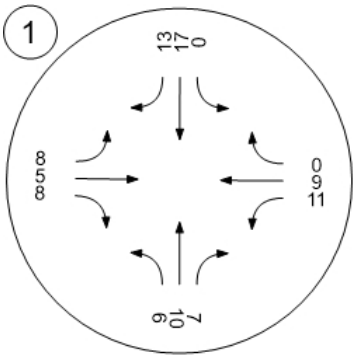
Ivy St at 13th Ave



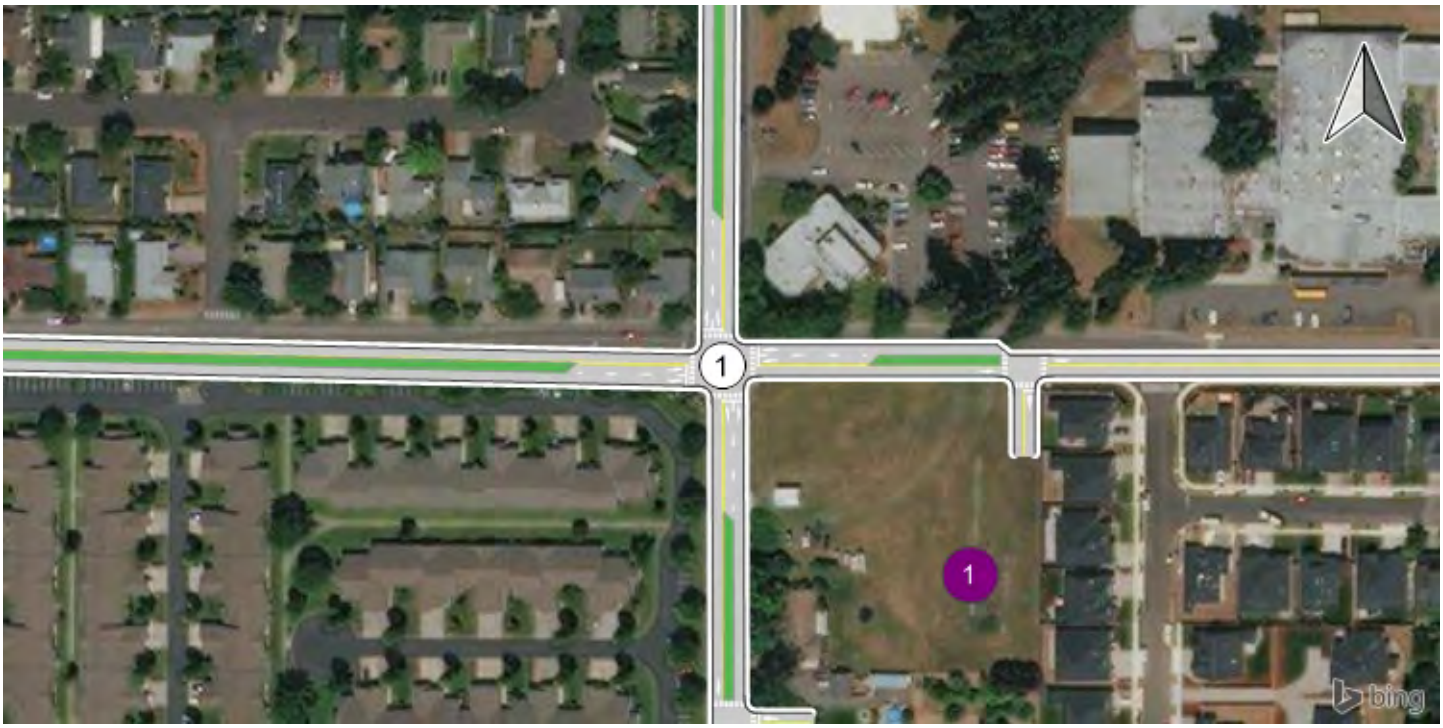
Report Figure 2d: Traffic Volume - Net New Site Trips



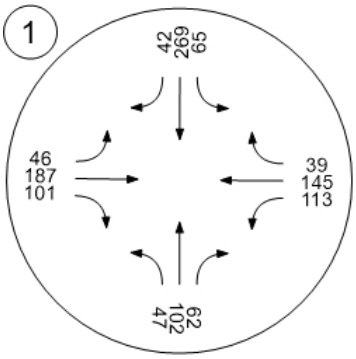
Ivy St at 13th Ave



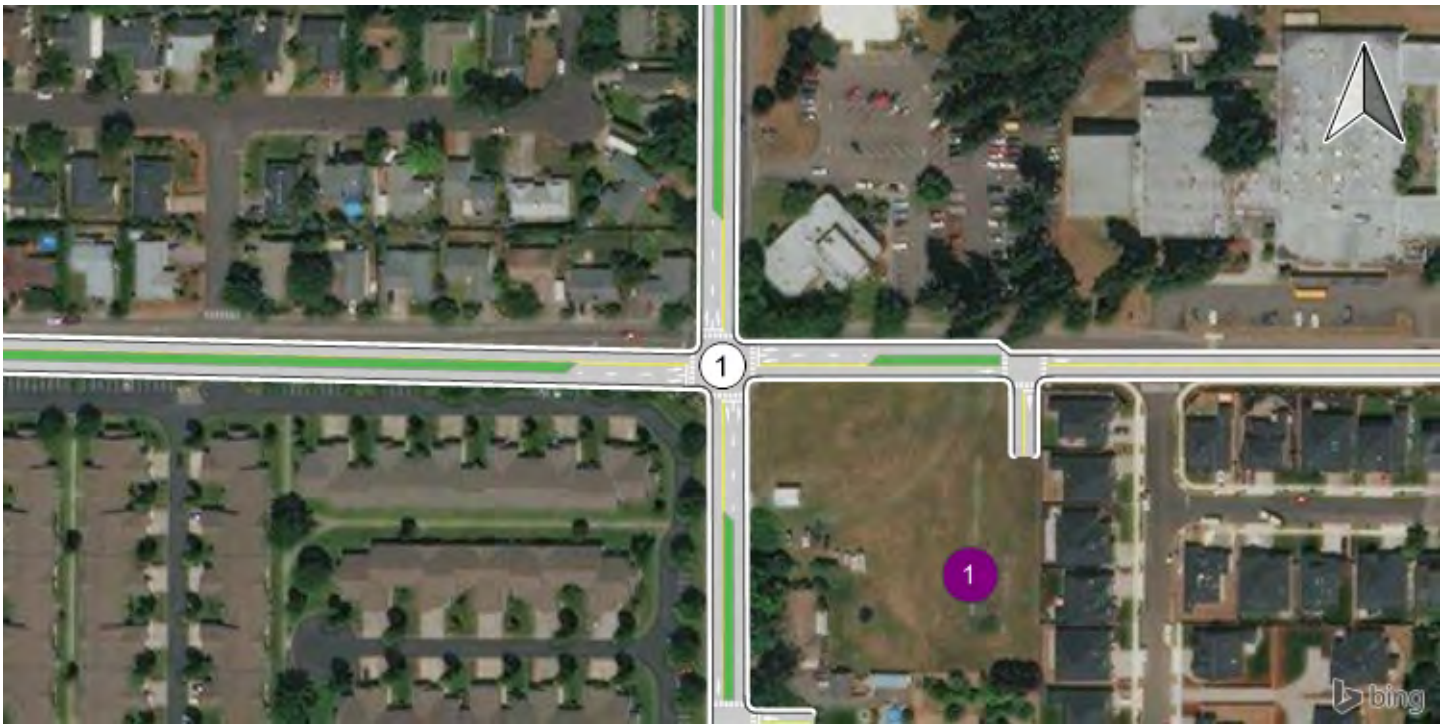
Report Figure 2f: Traffic Volume - Future Total Volume



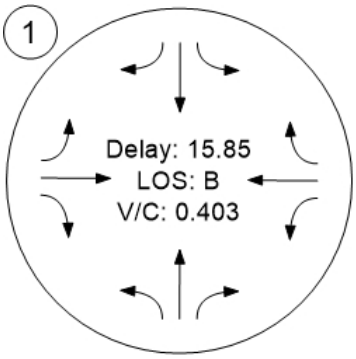
Ivy St at 13th Ave



Report Figure 3: Traffic Conditions



Ivy St at 13th Ave



Ivy St Townhomes TIA - 18-387

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Scenario 5 AM Developed - 30 Homes
7/6/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ivy St at 13th Ave	Signalized	HCM 6th Edition	EB Left	0.414	14.2	B
2	13th St Access	Two-way stop	HCM 6th Edition	NB Left	0.025	13.6	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Ivy St at 13th Ave

Control Type:	Signalized	Delay (sec / veh):	14.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.414

Intersection Setup

Name				Ivy St			13th Ave			13th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name				Ivy St			13th Ave			13th Ave		
Base Volume Input [veh/h]	93	196	49	25	77	8	21	116	26	50	222	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.80	3.80	3.80	9.10	9.10	9.10	5.50	5.50	5.50	8.00	8.00	8.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	15	10	1	5	4	11	9	6	5	7	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	95	211	59	26	82	12	32	125	32	55	229	43
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	64	18	8	25	4	10	38	10	17	69	13
Total Analysis Volume [veh/h]	114	254	71	31	99	14	39	151	39	66	276	52
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	19	0	0	19	0	0	41	0	0	41	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	34	34	34	34	18	18	18	18
g / C, Green / Cycle	0.56	0.56	0.56	0.56	0.31	0.31	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.10	0.20	0.03	0.07	0.04	0.12	0.06	0.21
s, saturation flow rate [veh/h]	1135	1597	895	1553	920	1579	1022	1558
c, Capacity [veh/h]	690	896	502	871	190	483	292	477
d1, Uniform Delay [s]	8.28	7.27	10.22	6.24	26.73	16.43	22.19	18.31
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.52	1.14	0.24	0.31	0.53	0.52	0.39	1.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.17	0.36	0.06	0.13	0.20	0.39	0.23	0.69
d, Delay for Lane Group [s/veh]	8.79	8.41	10.45	6.55	27.26	16.95	22.58	20.08
Lane Group LOS	A	A	B	A	C	B	C	C
Critical Lane Group	No	Yes	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	0.79	2.09	0.25	0.62	0.55	1.99	0.82	3.94
50th-Percentile Queue Length [ft]	19.64	52.37	6.18	15.38	13.66	49.86	20.55	98.42
95th-Percentile Queue Length [veh]	1.41	3.77	0.44	1.11	0.98	3.59	1.48	7.09
95th-Percentile Queue Length [ft]	35.35	94.26	11.12	27.69	24.59	89.75	36.99	177.16

Movement, Approach, & Intersection Results

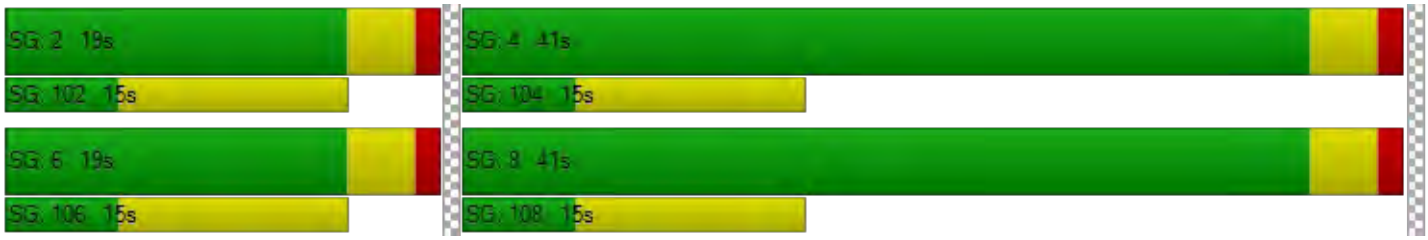
d_M, Delay for Movement [s/veh]	8.79	8.41	8.41	10.45	6.55	6.55	27.26	16.95	16.95	22.58	20.08	20.08
Movement LOS	A	A	A	B	A	A	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	8.51			7.39			18.71			20.50		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	14.23											
Intersection LOS	B											
Intersection V/C	0.414											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.224	2.135	2.254	2.140
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	500	1233	1233
d_b, Bicycle Delay [s]	16.88	16.88	4.41	4.41
l_b,int, Bicycle LOS Score for Intersection	2.835	2.348	2.672	2.944
Bicycle LOS	C	B	B	C

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: 13th St Access

Control Type:	Two-way stop	Delay (sec / veh):	13.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.025

Intersection Setup

Name			13th Ave			
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			13th Ave			
Base Volume Input [veh/h]	0	0	190	0	0	312
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	8.00	8.00	8.00	8.00	8.00	8.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	2	18	2	1	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	2	208	2	1	318
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	1	63	1	0	96
Total Analysis Volume [veh/h]	11	2	251	2	1	383
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.57	9.89	0.00	0.00	7.82	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.09	0.09	0.00	0.00	1.27	1.27
95th-Percentile Queue Length [ft]	2.16	2.16	0.00	0.00	31.85	31.85
d_A, Approach Delay [s/veh]	13.00		0.00		0.02	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.27					
Intersection LOS	B					

Ivy St Townhomes TIA - 18-387

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Scenario 5 AM Developed - 30 Homes
7/6/2018

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	95	211	59	26	82	12	32	125	32	55	229	43	1001

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
2	13th St Access	9	2	208	2	1	318	540

Ivy St Townhomes TIA - 18-387

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Scenario 5 AM Developed - 30 Homes
7/6/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	Final Base	93	196	49	25	77	8	21	116	26	50	222	40	923
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	2	15	10	1	5	4	11	9	6	5	7	3	78
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**95**	**211**	**59**	**26**	**82**	**12**	**32**	**125**	**32**	**55**	**229**	**43**	**1001**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
2	13th St Access	Final Base	0	0	190	0	0	312	502
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	9	2	18	2	1	6	38
		Other	0	0	0	0	0	0	0
		Future Total	**9**	**2**	**208**	**2**	**1**	**318**	**540**

Ivy St Townhomes TIA - 18-387

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Report File: J:\...\AM Dev w 1 Access (30).pdf

Scenario 5 AM Developed - 30 Homes
7/6/2018

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: Ivy St Townhouses	Apts	ITE 220	Units	0.460	30.000	23.00	77.00	3	11	14	10.69
7: Mayberry Group	Homes	ITE 210	Homes	0.740	89.000	25.00	75.00	16	50	66	50.38
8: Beck Pond	Homes	ite 210	Homes	0.740	69.000	25.00	75.00	13	38	51	38.93
					Added Trips Total			**32**	**99**	**131**	**100.00**

Ivy St Townhomes TIA - 18-387

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Scenario 5 AM Developed - 30 Homes
7/6/2018

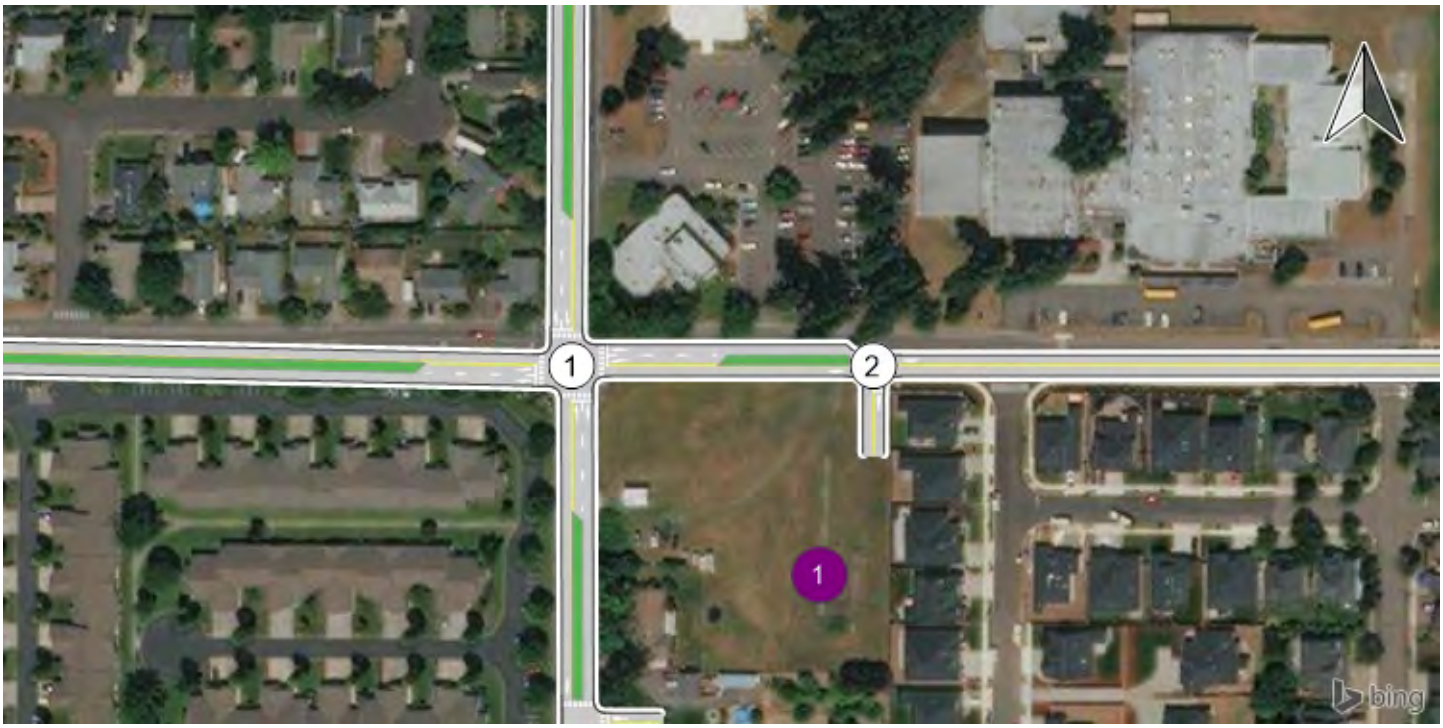
Trip Distribution summary

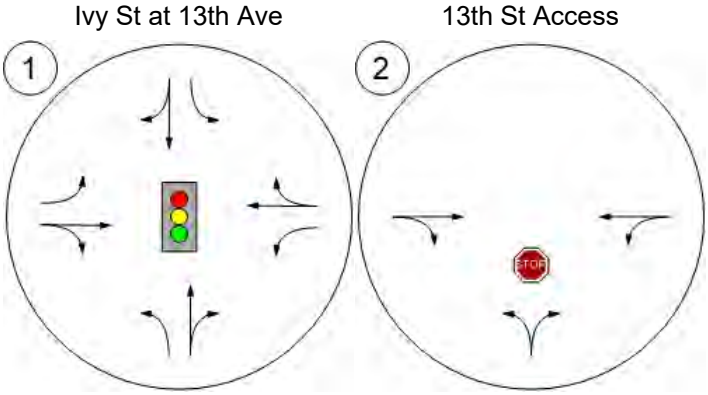
Zone / Gate	Zone 1: Ivy St Townhouses			
	To Ivy St Townhouses:		From Ivy St Townhouses:	
	Share %	Trips	Share %	Trips
7: Mayberry Group	0.00	0	0.00	0
8: Beck Pond	0.00	0	0.00	0
2: Gate	35.00	1	35.00	4
3: Gate	30.00	1	30.00	3
4: Gate	20.00	1	20.00	2
5: Gate	15.00	0	15.00	2
6: Gate	0.00	0	0.00	0
Total	**100.00**	**3**	**100.00**	**11**

Zone / Gate	Zone 7: Mayberry Group			
	To Mayberry Group:		From Mayberry Group:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
8: Beck Pond	0.00	0	0.00	0
2: Gate	35.00	6	35.00	17
3: Gate	30.00	5	30.00	15
4: Gate	20.00	3	20.00	10
5: Gate	15.00	2	15.00	8
6: Gate	0.00	0	0.00	0
Total	**100.00**	**16**	**100.00**	**50**

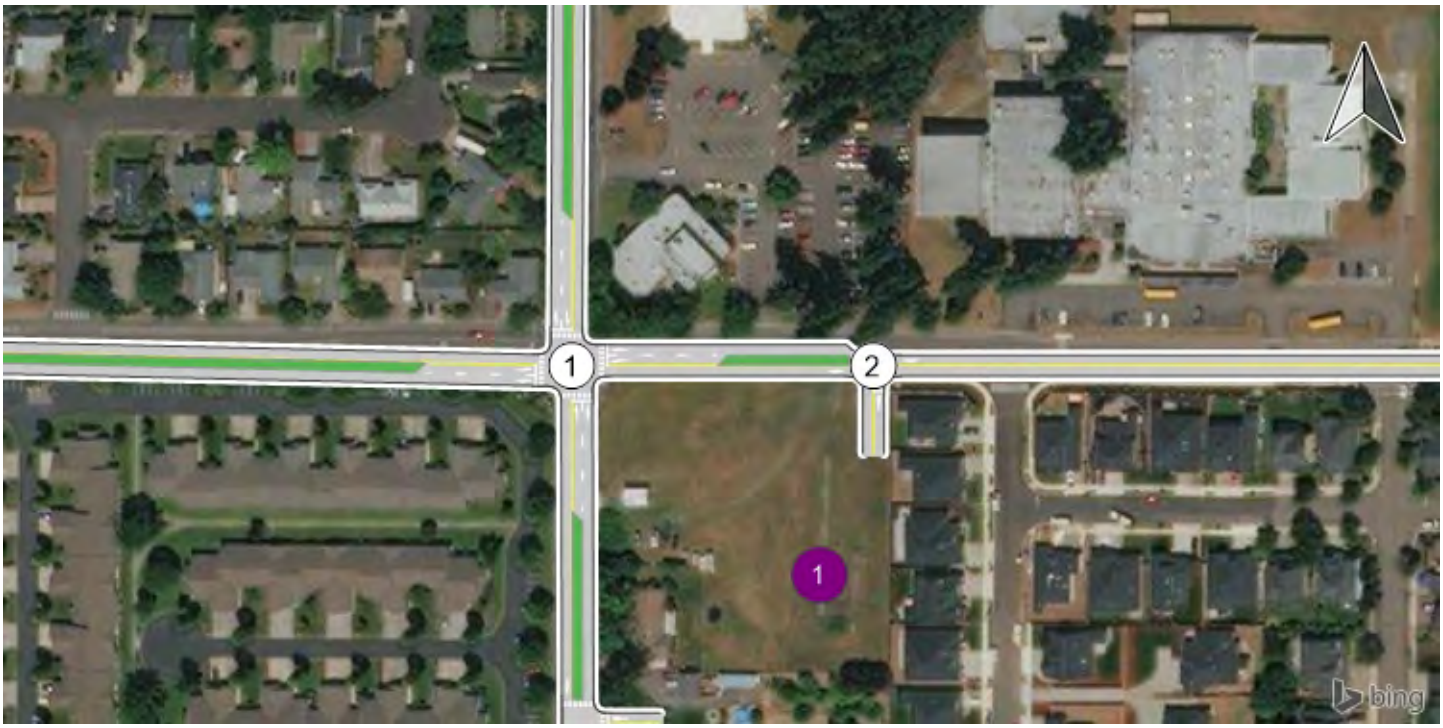
Zone / Gate	Zone 8: Beck Pond			
	To Beck Pond:		From Beck Pond:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
7: Mayberry Group	0.00	0	0.00	0
2: Gate	35.00	5	35.00	13
3: Gate	30.00	4	30.00	11
4: Gate	20.00	3	20.00	8
5: Gate	15.00	2	15.00	6
6: Gate	0.00	0	0.00	0
Total	**100.00**	**14**	**100.00**	**38**

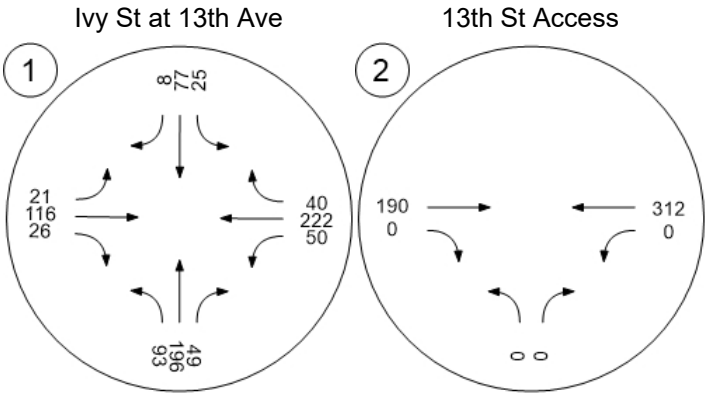
Report Figure 1: Lane Configuration and Traffic Control



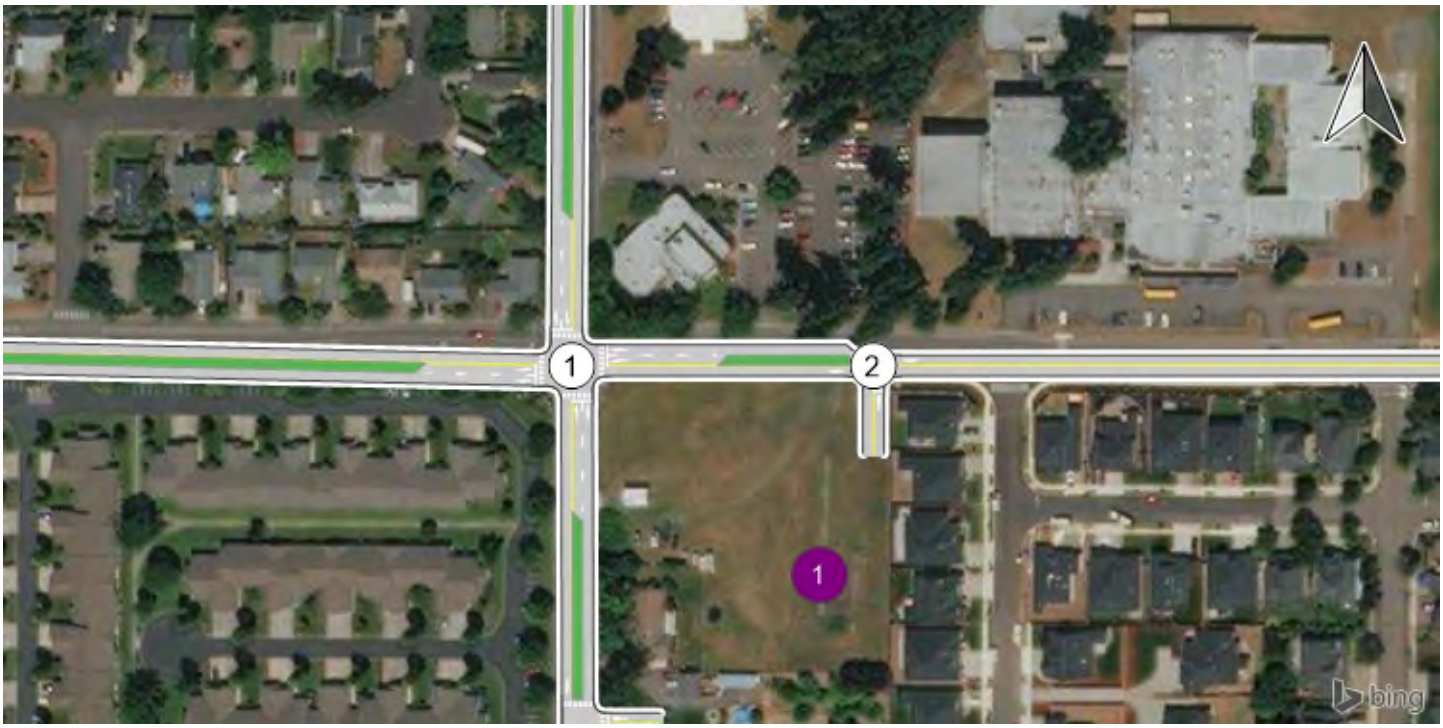


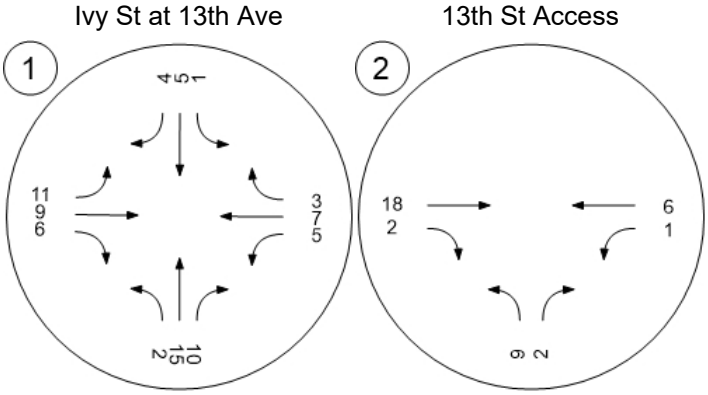
Report Figure 2a: Traffic Volume - Base Volume



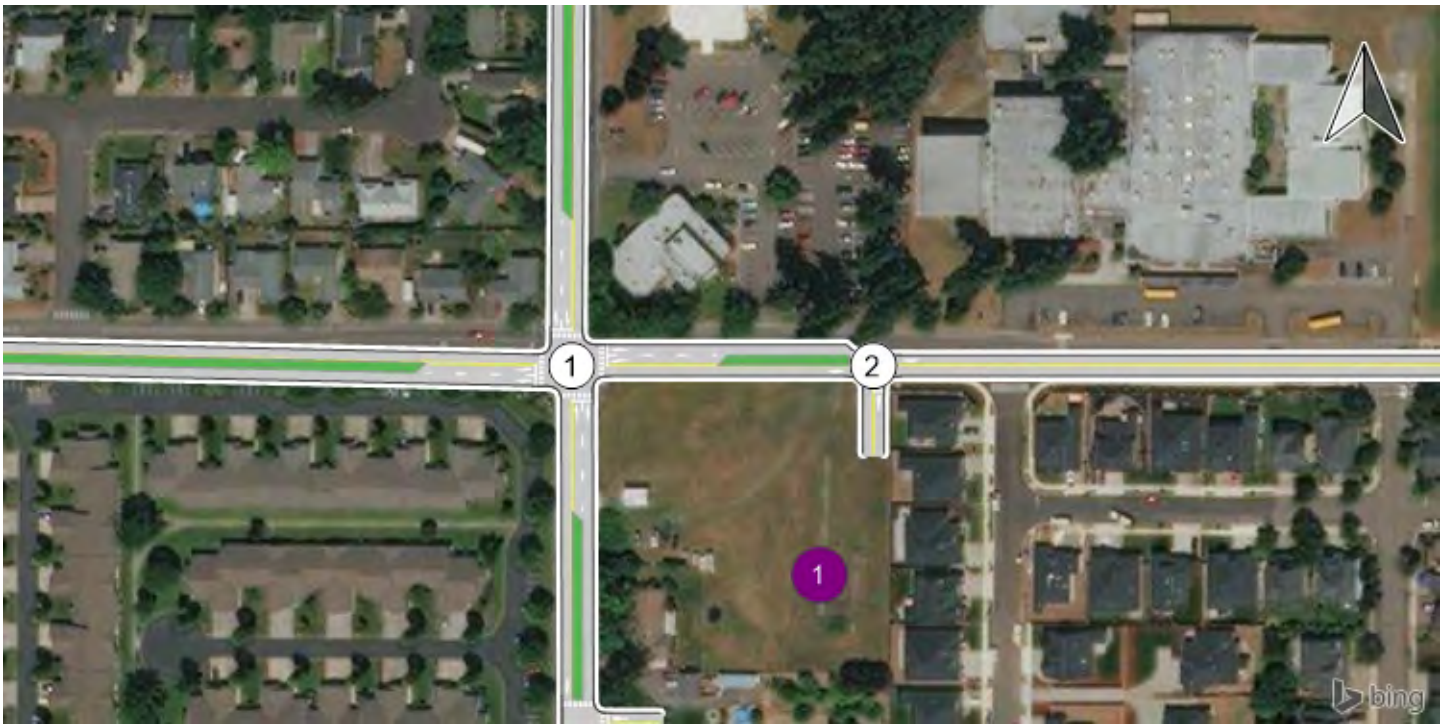


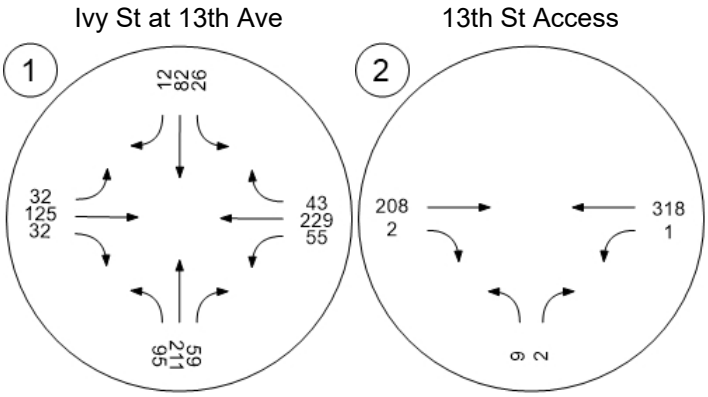
Report Figure 2d: Traffic Volume - Net New Site Trips



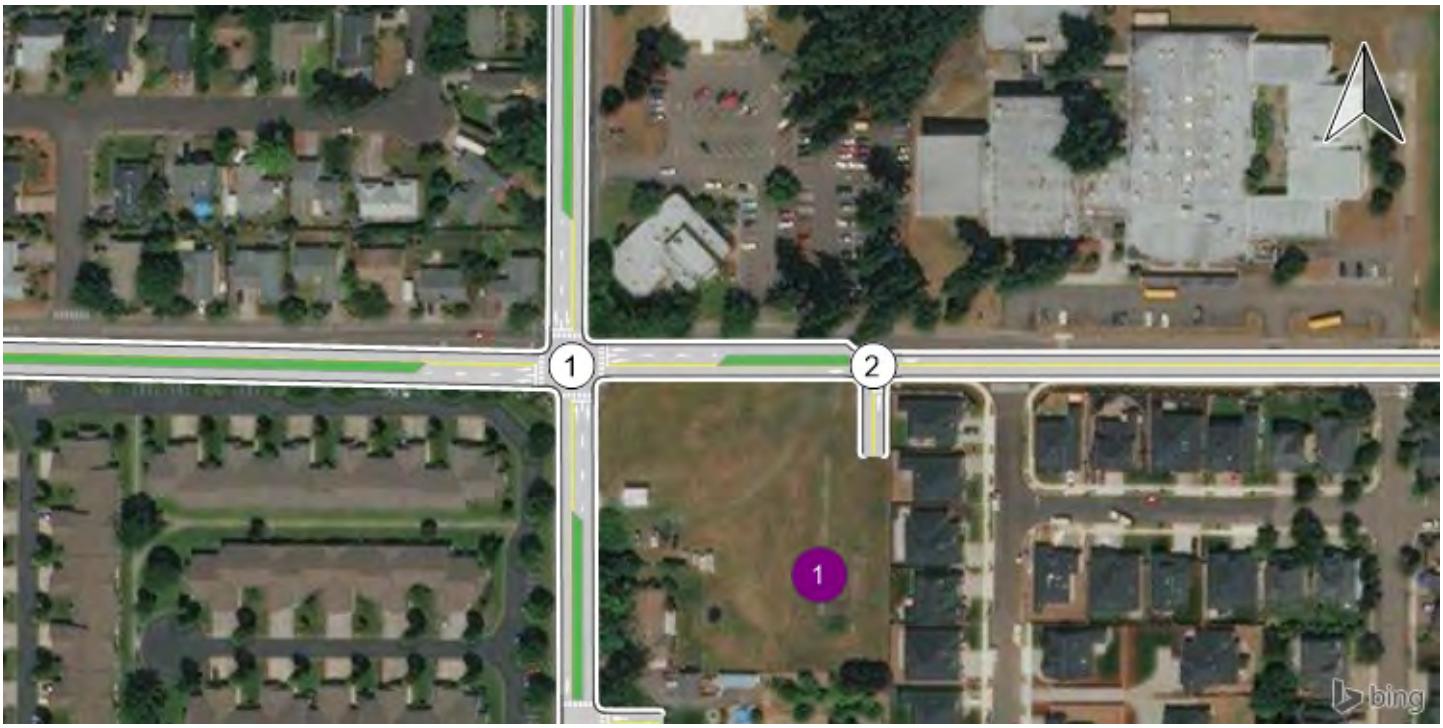


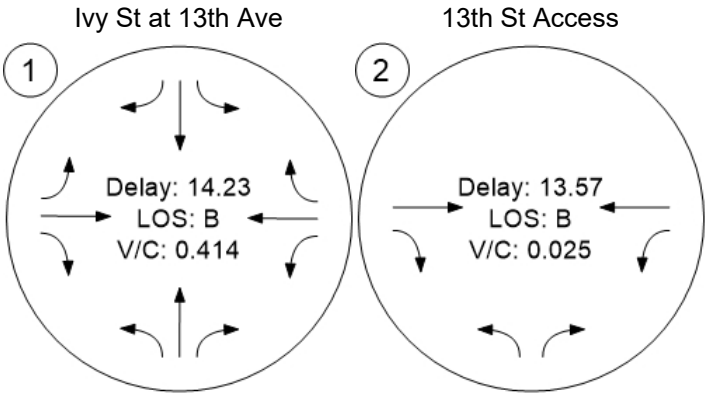
Report Figure 2f: Traffic Volume - Future Total Volume





Report Figure 3: Traffic Conditions





Ivy St Townhomes TIA - 18-387

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Scenario 7 AM Developed - 38 Homes
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Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ivy St at 13th Ave	Signalized	HCM 6th Edition	EB Left	0.422	14.3	B
2	13th St Access	Two-way stop	HCM 6th Edition	NB Left	0.014	13.5	B
9	Ivy St Access	Two-way stop	HCM 6th Edition	WB Left	0.002	13.3	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Ivy St at 13th Ave

Control Type:	Signalized	Delay (sec / veh):	14.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.422

Intersection Setup

Name				Ivy St			13th Ave			13th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name				Ivy St			13th Ave			13th Ave		
Base Volume Input [veh/h]	93	196	49	25	77	8	21	116	26	50	222	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	8.30	8.30	8.30	9.10	9.10	9.10	5.50	5.50	5.50	8.00	8.00	8.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	17	12	1	6	4	11	9	7	5	5	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	97	213	61	26	83	12	32	125	33	55	227	42
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	64	18	8	25	4	10	38	10	17	68	13
Total Analysis Volume [veh/h]	117	257	73	31	100	14	39	151	40	66	273	51
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	19	0	0	19	0	0	41	0	0	41	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	34	34	34	34	18	18	18	18
g / C, Green / Cycle	0.56	0.56	0.56	0.56	0.30	0.30	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.11	0.21	0.03	0.07	0.04	0.12	0.06	0.21
s, saturation flow rate [veh/h]	1092	1538	891	1553	923	1577	1021	1559
c, Capacity [veh/h]	671	866	496	875	190	479	288	473
d1, Uniform Delay [s]	8.26	7.29	10.38	6.18	26.73	16.56	22.37	18.37
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.57	1.27	0.24	0.31	0.52	0.54	0.40	1.76
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.17	0.38	0.06	0.13	0.20	0.40	0.23	0.68
d, Delay for Lane Group [s/veh]	8.83	8.57	10.62	6.49	27.25	17.09	22.77	20.13
Lane Group LOS	A	A	B	A	C	B	C	C
Critical Lane Group	No	Yes	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	0.81	2.16	0.25	0.62	0.55	2.02	0.83	3.89
50th-Percentile Queue Length [ft]	20.27	53.89	6.25	15.41	13.66	50.40	20.66	97.29
95th-Percentile Queue Length [veh]	1.46	3.88	0.45	1.11	0.98	3.63	1.49	7.00
95th-Percentile Queue Length [ft]	36.48	97.00	11.25	27.73	24.59	90.72	37.19	175.12

Movement, Approach, & Intersection Results

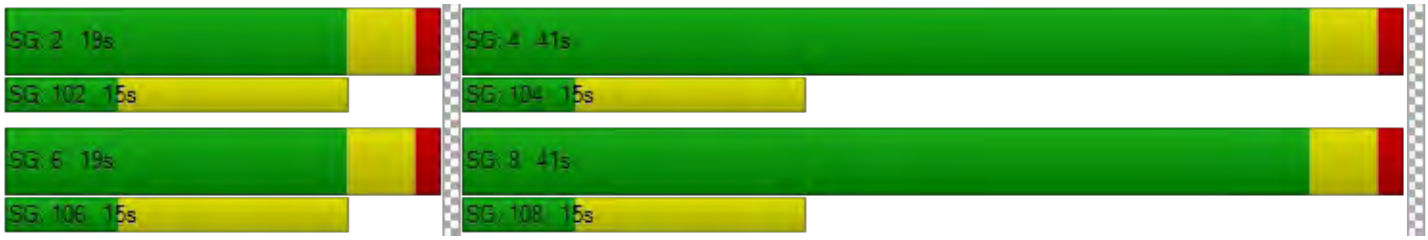
d_M, Delay for Movement [s/veh]	8.83	8.57	8.57	10.62	6.49	6.49	27.25	17.09	17.09	22.77	20.13	20.13
Movement LOS	A	A	A	B	A	A	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	8.64			7.37			18.82			20.58		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	14.26											
Intersection LOS	B											
Intersection V/C	0.422											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.227	2.136	2.259	2.140
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	500	1233	1233
d_b, Bicycle Delay [s]	16.88	16.88	4.41	4.41
l_b,int, Bicycle LOS Score for Intersection	2.848	2.350	2.674	2.938
Bicycle LOS	C	B	B	C

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: 13th St Access

Control Type:	Two-way stop	Delay (sec / veh):	13.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.014

Intersection Setup

Name			13th Ave			
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			13th Ave			
Base Volume Input [veh/h]	0	0	190	0	0	312
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	8.00	8.00	8.00	8.00	8.00	8.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	2	20	2	1	7
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	2	210	2	1	319
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	1	63	1	0	96
Total Analysis Volume [veh/h]	6	2	253	2	1	384
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.50	9.80	0.00	0.00	7.82	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.05	0.05	0.00	0.00	1.28	1.28
95th-Percentile Queue Length [ft]	1.26	1.26	0.00	0.00	32.05	32.05
d_A, Approach Delay [s/veh]	12.58		0.00		0.02	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.17					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 9: Ivy St Access

Control Type:	Two-way stop	Delay (sec / veh):	13.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	153	0	0	338	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.38	0.38	0.38	0.38	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	28	1	2	15	1	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	181	1	2	353	1	6
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	0	1	106	0	2
Total Analysis Volume [veh/h]	218	1	2	425	1	7
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.65	0.00	13.34	9.44
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	1.36	1.36	0.03	0.03
95th-Percentile Queue Length [ft]	0.00	0.00	33.93	33.93	0.82	0.82
d_A, Approach Delay [s/veh]	0.00		0.04		9.92	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.14					
Intersection LOS	B					

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Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	97	213	61	26	83	12	32	125	33	55	227	42	1006

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
2	13th St Access	5	2	210	2	1	319	539

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
9	Ivy St Access	181	1	2	353	1	6	544

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Scenario 7 AM Developed - 38 Homes
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Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	Final Base	93	196	49	25	77	8	21	116	26	50	222	40	923
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	4	17	12	1	6	4	11	9	7	5	5	2	83
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**97**	**213**	**61**	**26**	**83**	**12**	**32**	**125**	**33**	**55**	**227**	**42**	**1006**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
2	13th St Access	Final Base	0	0	190	0	0	312	502
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	5	2	20	2	1	7	37
		Other	0	0	0	0	0	0	0
		Future Total	**5**	**2**	**210**	**2**	**1**	**319**	**539**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
9	Ivy St Access	Final Base	153	0	0	338	0	0	491
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	28	1	2	15	1	6	53
		Other	0	0	0	0	0	0	0
		Future Total	**181**	**1**	**2**	**353**	**1**	**6**	**544**

Ivy St Townhomes TIA - 18-387

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Scenario 7 AM Developed - 38 Homes
7/6/2018

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: Ivy St Townhouses	Apts	ITE 220	Units	0.460	38.000	23.00	77.00	4	13	17	12.69
7: Mayberry Group	Homes	ITE 210	Homes	0.740	89.000	25.00	75.00	16	50	66	49.25
8: Beck Pond	Homes	ite 210	Homes	0.740	69.000	25.00	75.00	13	38	51	38.06
					Added Trips Total			**33**	**101**	**134**	**100.00**

Ivy St Townhomes TIA - 18-387

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Scenario 7 AM Developed - 38 Homes
7/6/2018

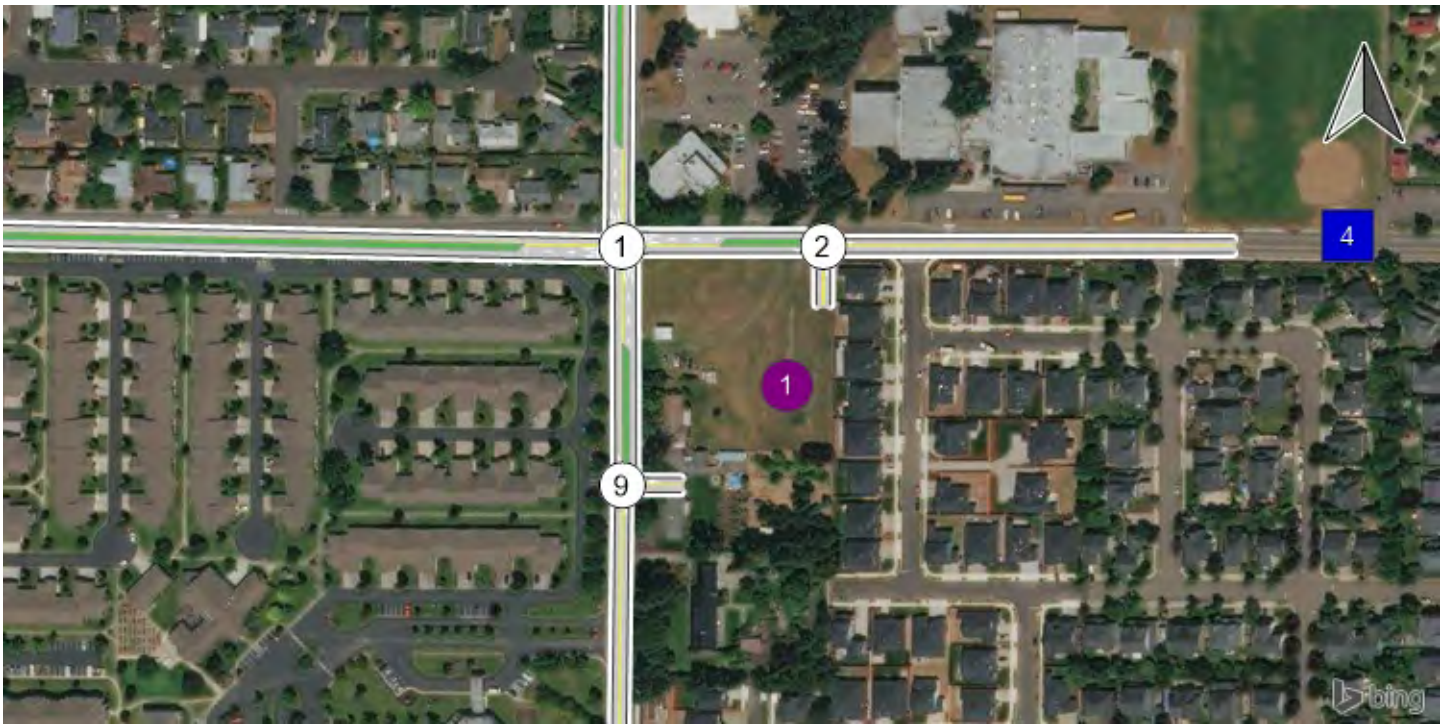
Trip Distribution summary

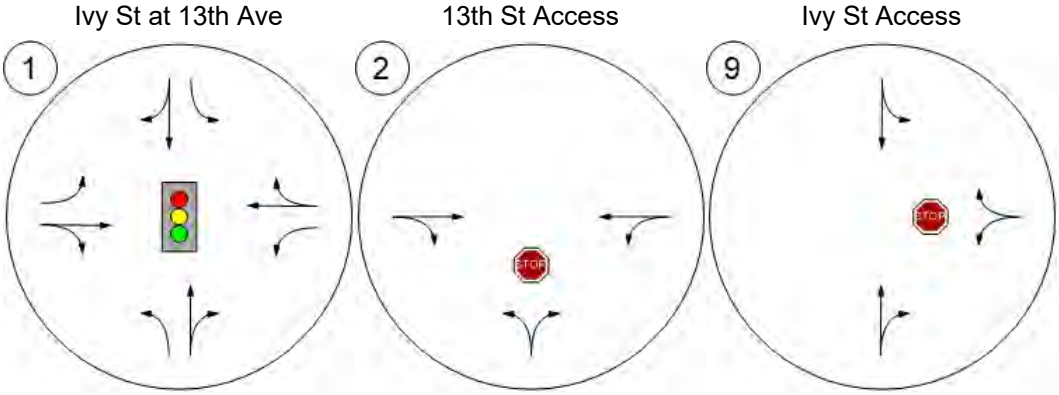
Zone / Gate	Zone 1: Ivy St Townhouses			
	To Ivy St Townhouses:		From Ivy St Townhouses:	
	Share %	Trips	Share %	Trips
7: Mayberry Group	0.00	0	0.00	0
8: Beck Pond	0.00	0	0.00	0
2: Gate	35.00	1	35.00	4
3: Gate	30.00	1	30.00	4
4: Gate	20.00	1	20.00	3
5: Gate	15.00	1	15.00	2
6: Gate	0.00	0	0.00	0
Total	**100.00**	**4**	**100.00**	**13**

Zone / Gate	Zone 7: Mayberry Group			
	To Mayberry Group:		From Mayberry Group:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
8: Beck Pond	0.00	0	0.00	0
2: Gate	35.00	6	35.00	17
3: Gate	30.00	5	30.00	15
4: Gate	20.00	3	20.00	10
5: Gate	15.00	2	15.00	8
6: Gate	0.00	0	0.00	0
Total	**100.00**	**16**	**100.00**	**50**

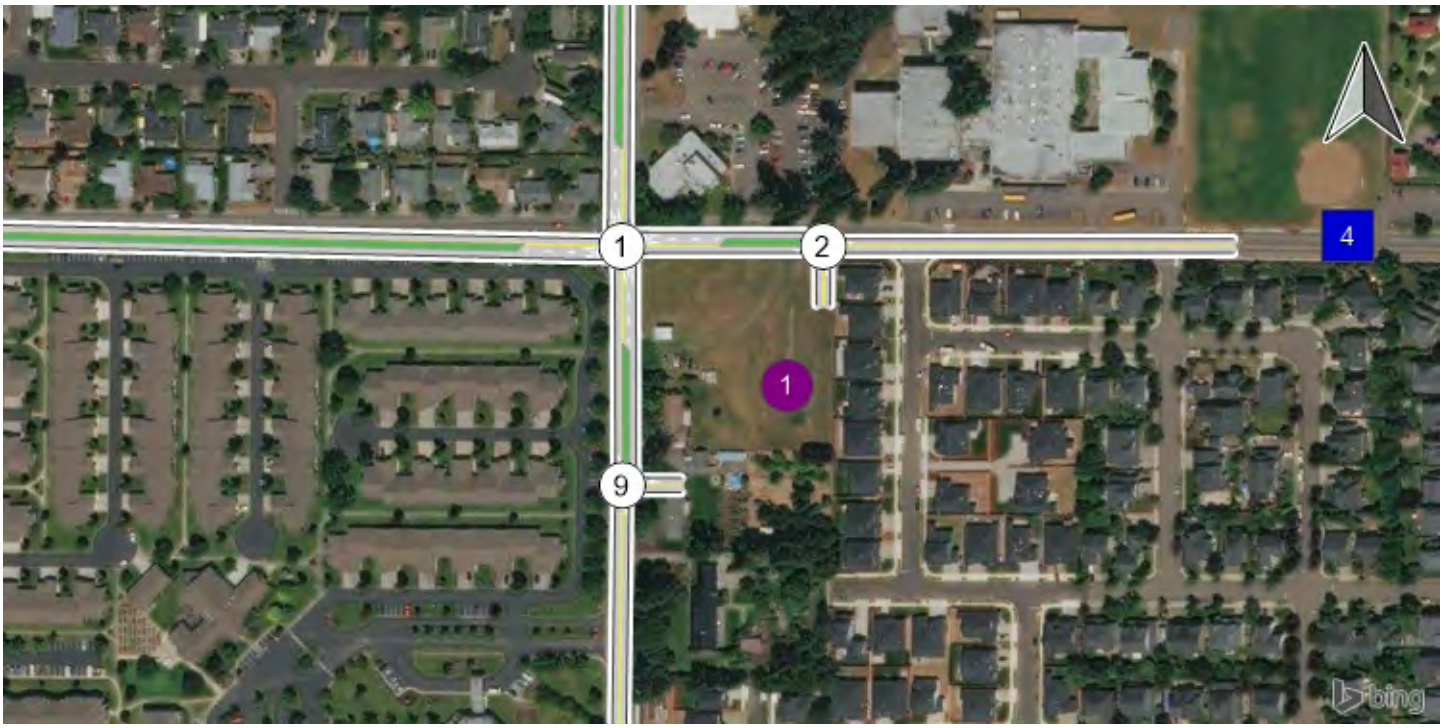
Zone / Gate	Zone 8: Beck Pond			
	To Beck Pond:		From Beck Pond:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
7: Mayberry Group	0.00	0	0.00	0
2: Gate	35.00	5	35.00	13
3: Gate	30.00	4	30.00	11
4: Gate	20.00	3	20.00	8
5: Gate	15.00	2	15.00	6
6: Gate	0.00	0	0.00	0
Total	**100.00**	**14**	**100.00**	**38**

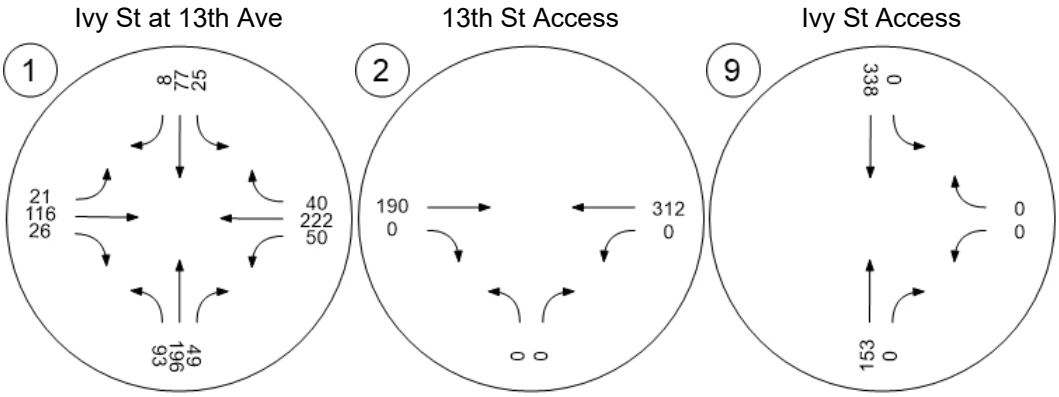
Report Figure 1: Lane Configuration and Traffic Control



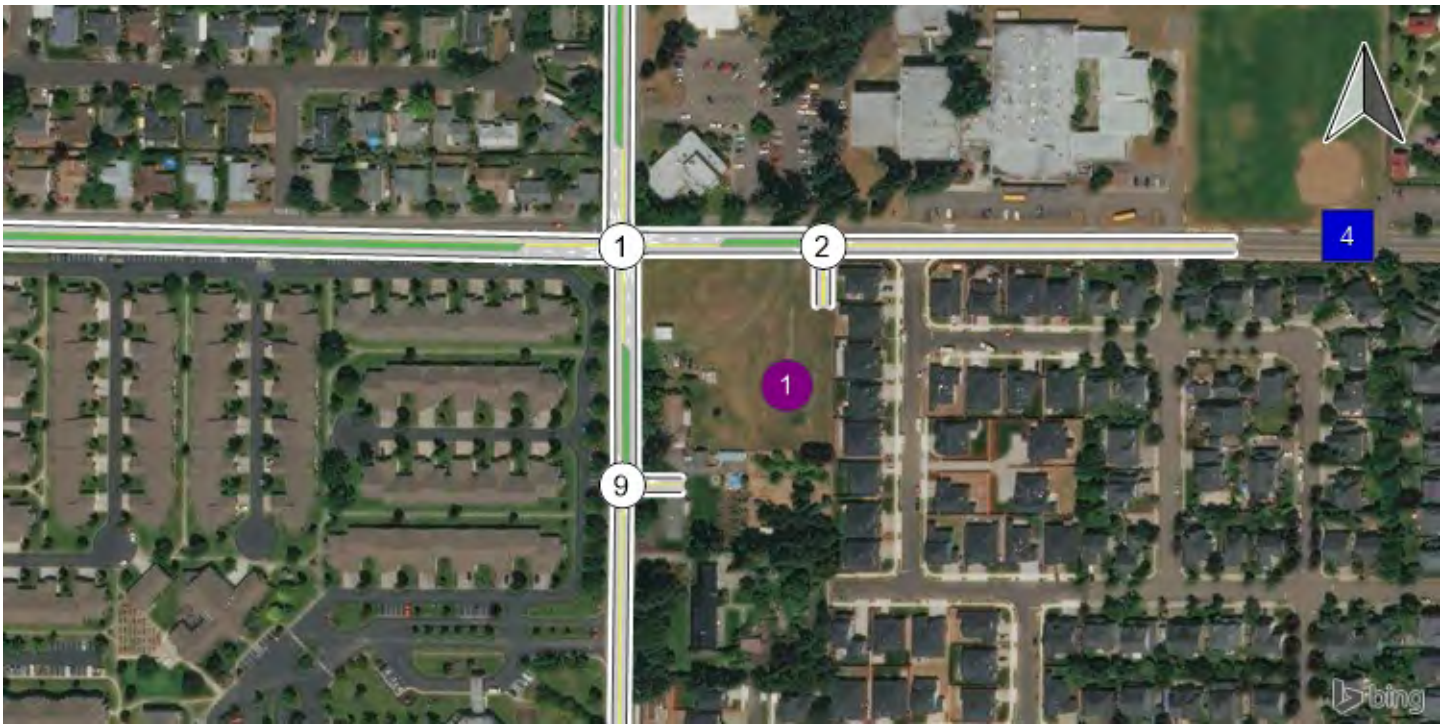


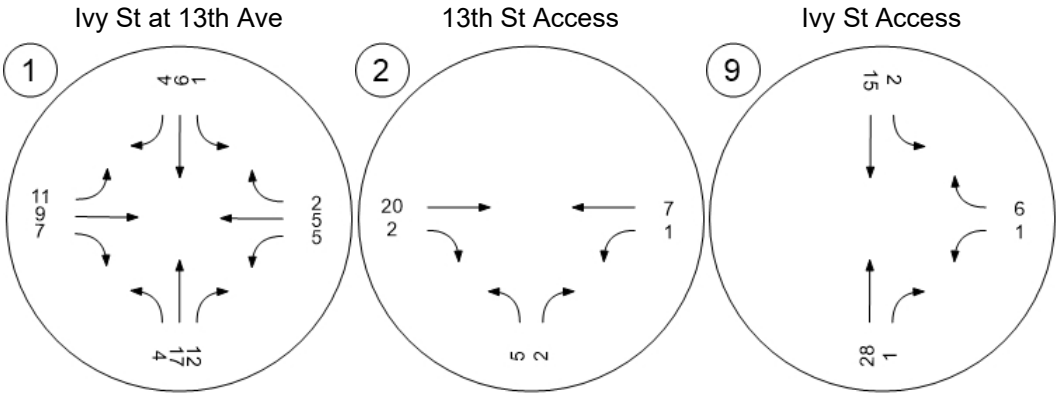
Report Figure 2a: Traffic Volume - Base Volume



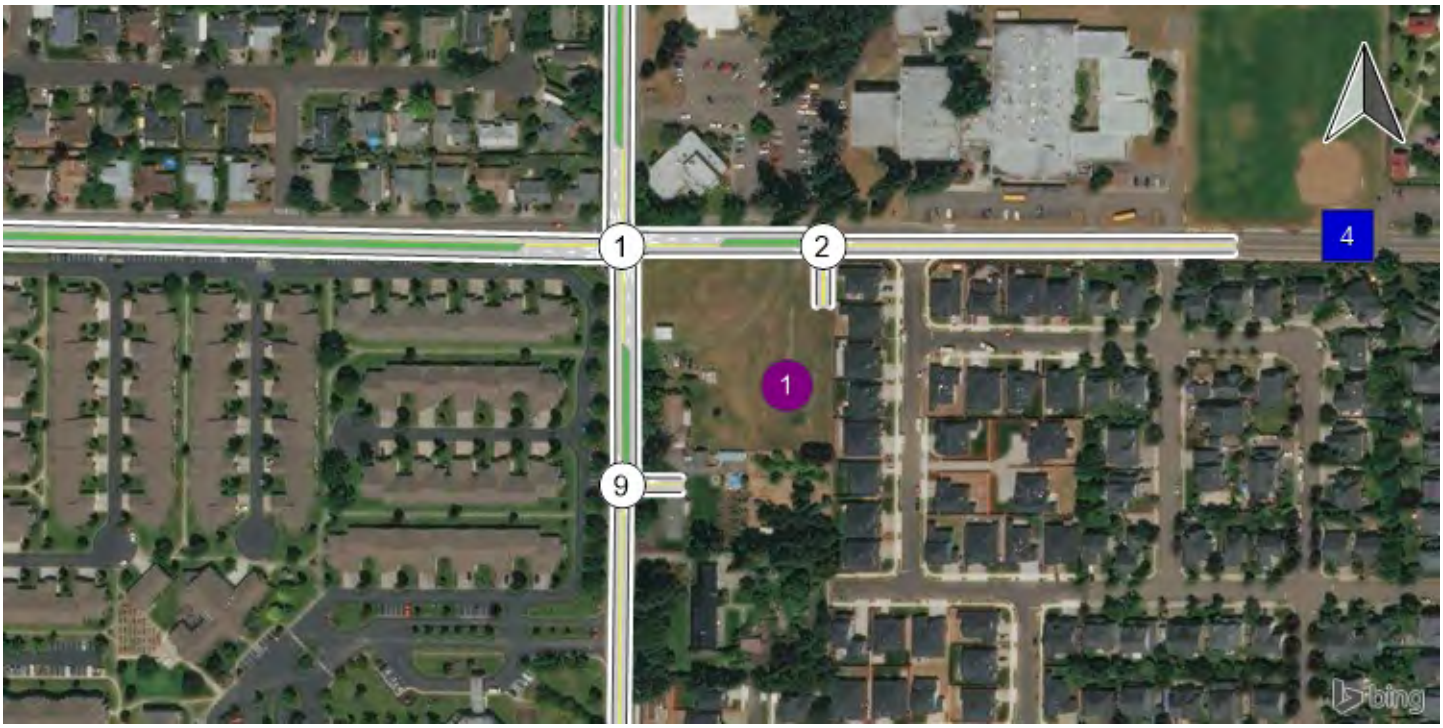


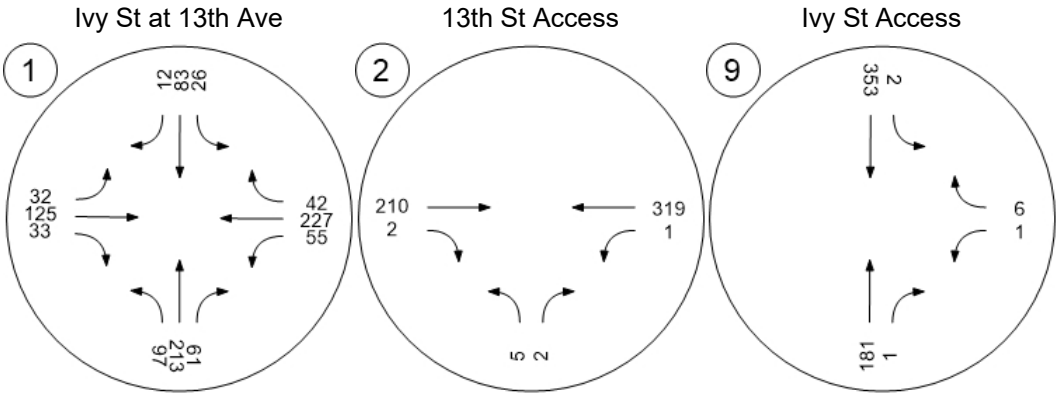
Report Figure 2d: Traffic Volume - Net New Site Trips



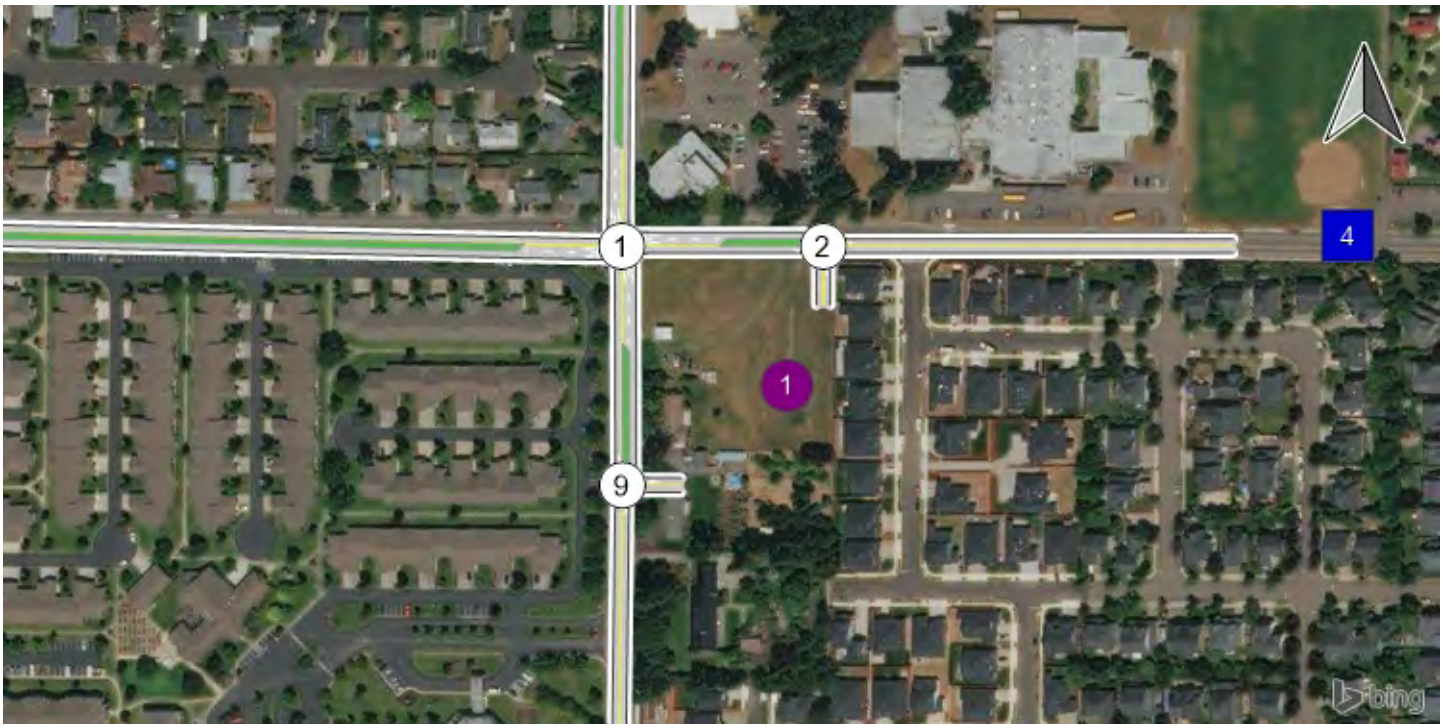


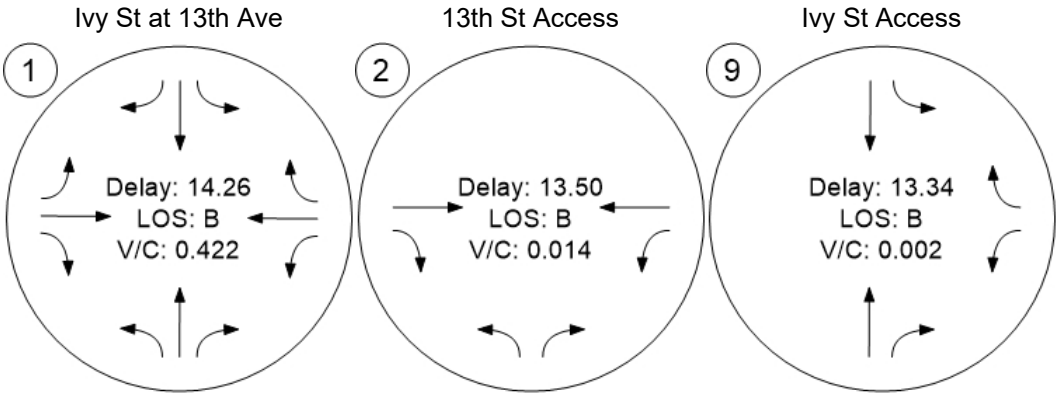
Report Figure 2f: Traffic Volume - Future Total Volume





Report Figure 3: Traffic Conditions





Ivy St Townhomes TIA - 18-387

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Scenario 6 PM Developed - 30 Homes
7/6/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ivy St at 13th Ave	Signalized	HCM 6th Edition	WB Left	0.403	15.8	B
2	13th St Access	Two-way stop	HCM 6th Edition	NB Left	0.012	13.6	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Ivy St at 13th Ave

Control Type:	Signalized	Delay (sec / veh):	15.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.403

Intersection Setup

Name				Ivy St			13th Ave			13th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name				Ivy St			13th Ave			13th Ave		
Base Volume Input [veh/h]	41	92	55	65	252	29	38	182	93	102	136	39
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	0.90	0.90	0.90	3.20	3.20	3.20	0.40	0.40	0.40
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	10	9	3	17	13	8	9	4	12	11	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	47	102	64	68	269	42	46	191	97	114	147	41
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	28	17	18	73	11	13	52	26	31	40	11
Total Analysis Volume [veh/h]	51	111	70	74	292	46	50	208	105	124	160	45
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	34	0	0	34	0	0	36	0	0	36	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	37	37	37	37	25	25	25	25
g / C, Green / Cycle	0.52	0.52	0.52	0.52	0.36	0.36	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.05	0.12	0.07	0.20	0.05	0.20	0.13	0.12
s, saturation flow rate [veh/h]	935	1570	1092	1658	1049	1574	972	1641
c, Capacity [veh/h]	466	821	590	866	343	572	258	596
d1, Uniform Delay [s]	13.84	9.02	11.53	10.02	21.83	17.71	28.31	16.22
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.47	0.62	0.44	1.32	0.19	0.82	1.38	0.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.11	0.22	0.13	0.39	0.15	0.55	0.48	0.34
d, Delay for Lane Group [s/veh]	14.32	9.64	11.97	11.35	22.02	18.54	29.70	16.56
Lane Group LOS	B	A	B	B	C	B	C	B
Critical Lane Group	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	0.55	1.45	0.70	3.03	0.67	3.93	2.04	2.34
50th-Percentile Queue Length [ft]	13.67	36.23	17.44	75.82	16.65	98.29	51.10	58.39
95th-Percentile Queue Length [veh]	0.98	2.61	1.26	5.46	1.20	7.08	3.68	4.20
95th-Percentile Queue Length [ft]	24.61	65.22	31.40	136.48	29.97	176.92	91.98	105.11

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.32	9.64	9.64	11.97	11.35	11.35	22.02	18.54	18.54	29.70	16.56	16.56
Movement LOS	B	A	A	B	B	B	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	10.67			11.46			19.02			21.51		
Approach LOS	B			B			B			C		
d_I, Intersection Delay [s/veh]	15.85											
Intersection LOS	B											
Intersection V/C	0.403											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	26.58	26.58	26.58	26.58
l_p,int, Pedestrian LOS Score for Intersection	2.350	2.201	2.170	2.219
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	857	857	914	914
d_b, Bicycle Delay [s]	11.43	11.43	10.31	10.31
l_b,int, Bicycle LOS Score for Intersection	2.493	2.790	2.893	2.837
Bicycle LOS	B	C	C	C

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: 13th St Access

Control Type:	Two-way stop	Delay (sec / veh):	13.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.012

Intersection Setup

Name			13th Ave			
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			13th Ave			
Base Volume Input [veh/h]	0	0	302	0	0	277
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.40	0.40	0.40	0.40	0.40	0.40
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	1	12	9	2	20
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	1	314	9	2	297
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	85	2	1	81
Total Analysis Volume [veh/h]	5	1	341	10	2	323
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.63	10.25	0.00	0.00	7.96	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.04	0.04	0.00	0.00	1.08	1.08
95th-Percentile Queue Length [ft]	1.01	1.01	0.00	0.00	27.07	27.07
d_A, Approach Delay [s/veh]	13.07		0.00		0.05	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.14					
Intersection LOS	B					

Ivy St Townhomes TIA - 18-387

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7/6/2018

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	47	102	64	68	269	42	46	191	97	114	147	41	1228

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
2	13th St Access	5	1	314	9	2	297	628

Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\PM Dev w 1 Access (30).pdf

Scenario 6 PM Developed - 30 Homes
7/6/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	Final Base	41	92	55	65	252	29	38	182	93	102	136	39	1124
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	6	10	9	3	17	13	8	9	4	12	11	2	104
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**47**	**102**	**64**	**68**	**269**	**42**	**46**	**191**	**97**	**114**	**147**	**41**	**1228**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
2	13th St Access	Final Base	0	0	302	0	0	277	579
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	5	1	12	9	2	20	49
		Other	0	0	0	0	0	0	0
		Future Total	**5**	**1**	**314**	**9**	**2**	**297**	**628**

Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\PM Dev w 1 Access (30).pdf

Scenario 6 PM Developed - 30 Homes
7/6/2018

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: Ivy St Townhouses	Apts	ITE 220	Units	0.560	30.000	63.00	37.00	11	6	17	9.83
7: Mayberry Group	Homes	ITE 210	Homes	0.990	89.000	63.00	37.00	55	33	88	50.87
8: Beck Pond	Homes	ite 210	Homes	0.990	69.000	63.00	37.00	43	25	68	39.31
					Added Trips Total			**109**	**64**	**173**	**100.00**

Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\PM Dev w 1 Access (30).pdf

Scenario 6 PM Developed - 30 Homes
7/6/2018

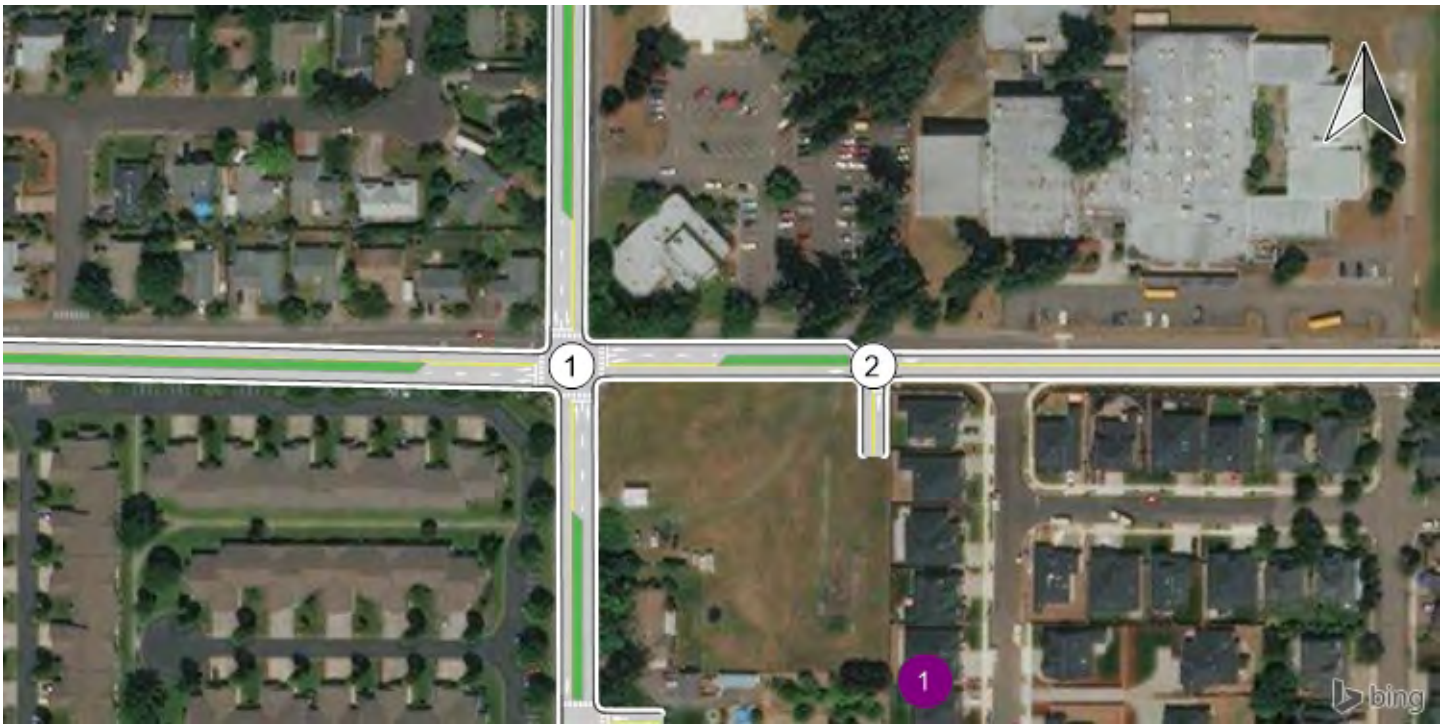
Trip Distribution summary

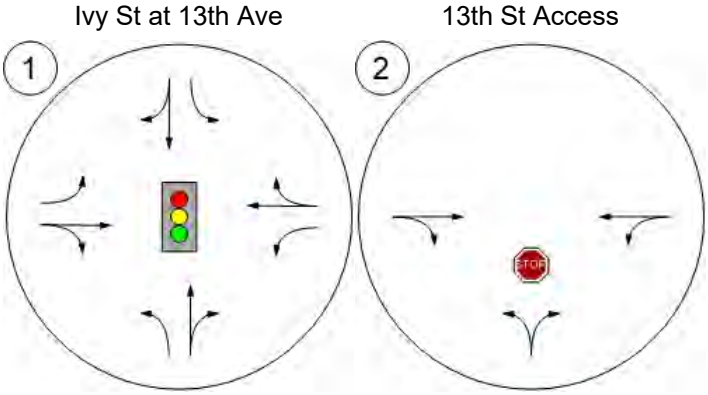
Zone / Gate	Zone 1: Ivy St Townhouses			
	To Ivy St Townhouses:		From Ivy St Townhouses:	
	Share %	Trips	Share %	Trips
7: Mayberry Group	0.00	0	0.00	0
8: Beck Pond	0.00	0	0.00	0
2: Gate	35.00	4	35.00	2
3: Gate	30.00	3	30.00	2
4: Gate	20.00	2	20.00	1
5: Gate	15.00	2	15.00	1
6: Gate	0.00	0	0.00	0
Total	**100.00**	**11**	**100.00**	**6**

Zone / Gate	Zone 7: Mayberry Group			
	To Mayberry Group:		From Mayberry Group:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
8: Beck Pond	0.00	0	0.00	0
2: Gate	35.00	19	35.00	11
3: Gate	30.00	17	30.00	10
4: Gate	20.00	11	20.00	7
5: Gate	15.00	8	15.00	5
6: Gate	0.00	0	0.00	0
Total	**100.00**	**55**	**100.00**	**33**

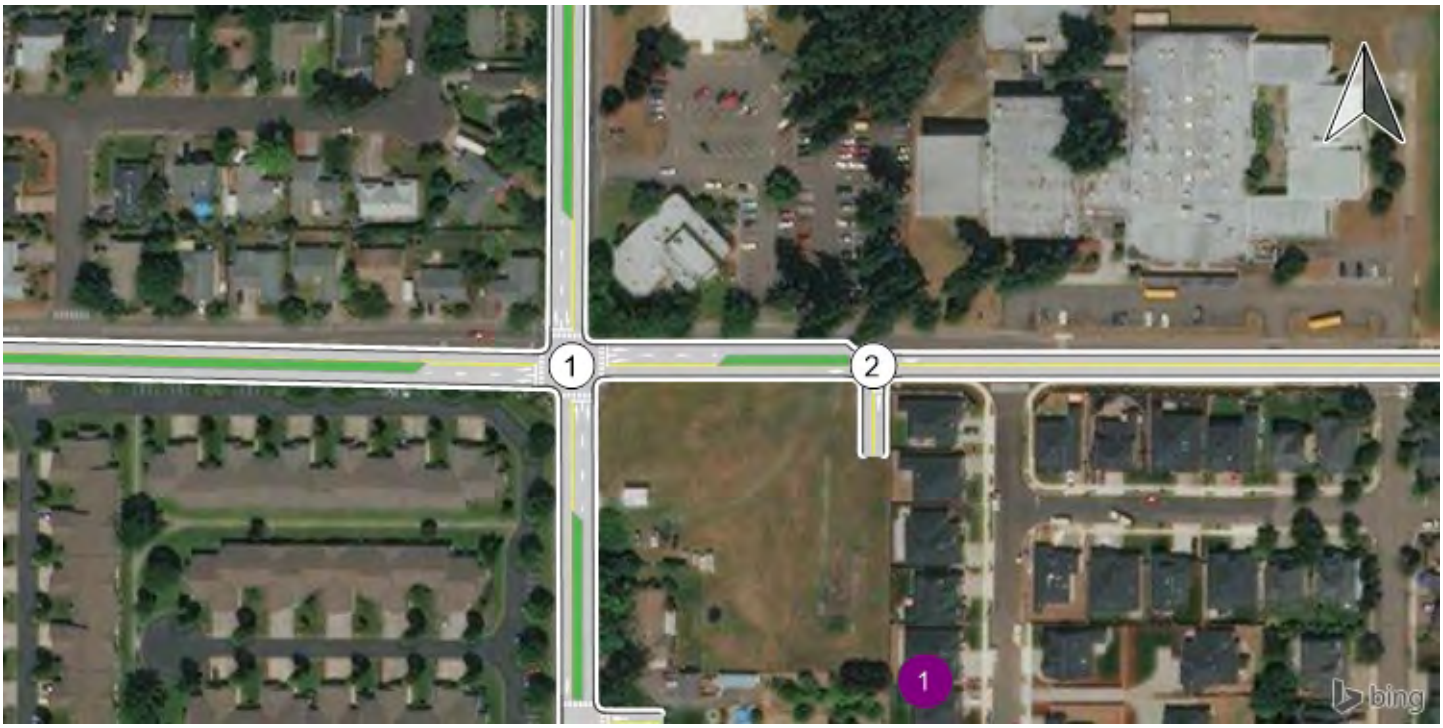
Zone / Gate	Zone 8: Beck Pond			
	To Beck Pond:		From Beck Pond:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
7: Mayberry Group	0.00	0	0.00	0
2: Gate	35.00	15	35.00	8
3: Gate	30.00	13	30.00	8
4: Gate	20.00	9	20.00	5
5: Gate	15.00	6	15.00	4
6: Gate	0.00	0	0.00	0
Total	**100.00**	**43**	**100.00**	**25**

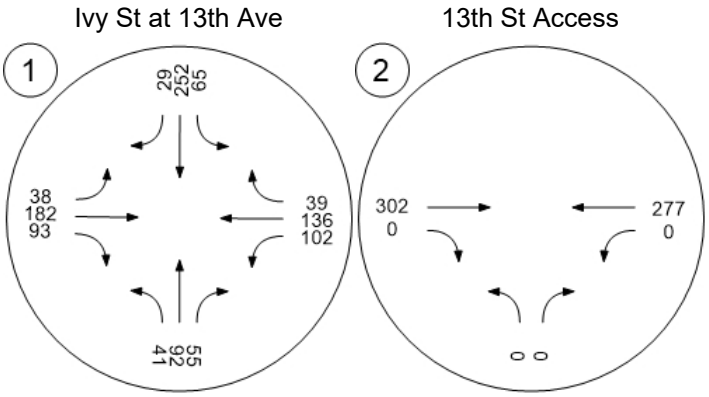
Report Figure 1: Lane Configuration and Traffic Control



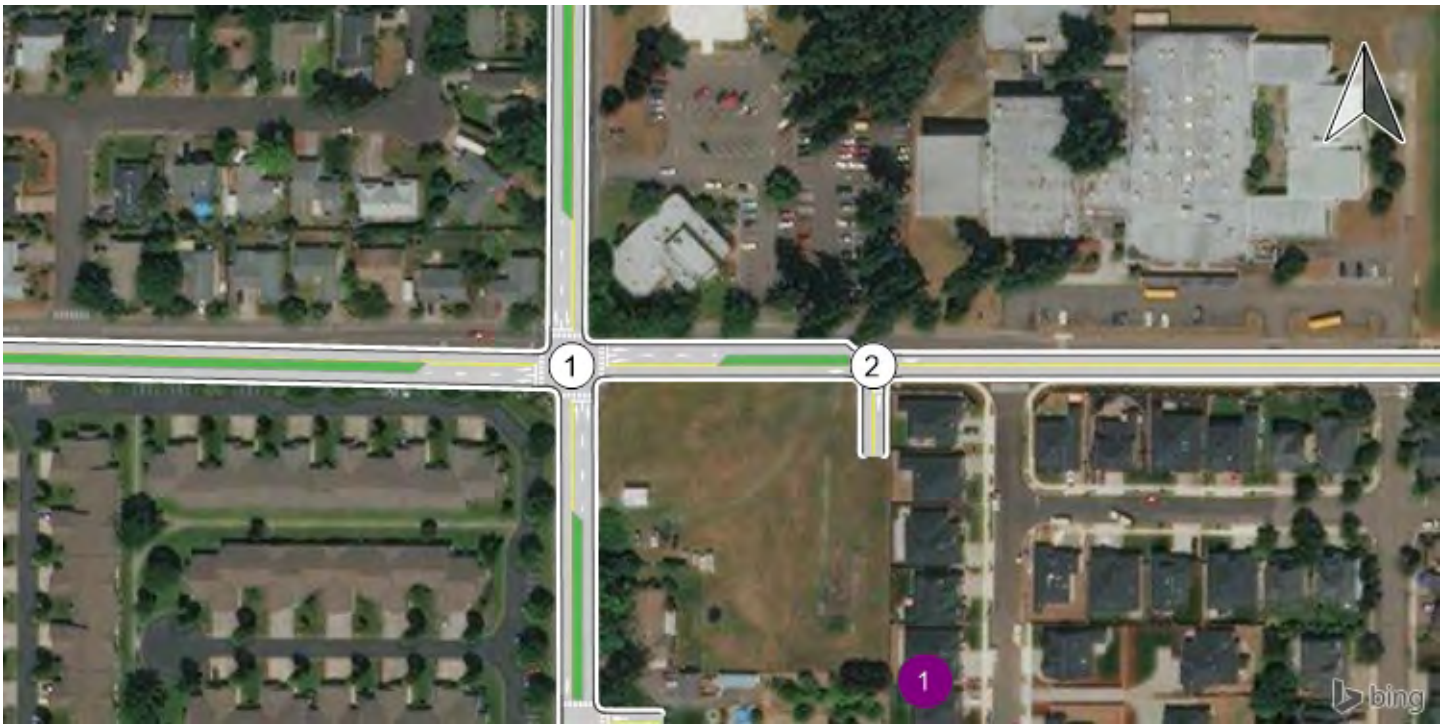


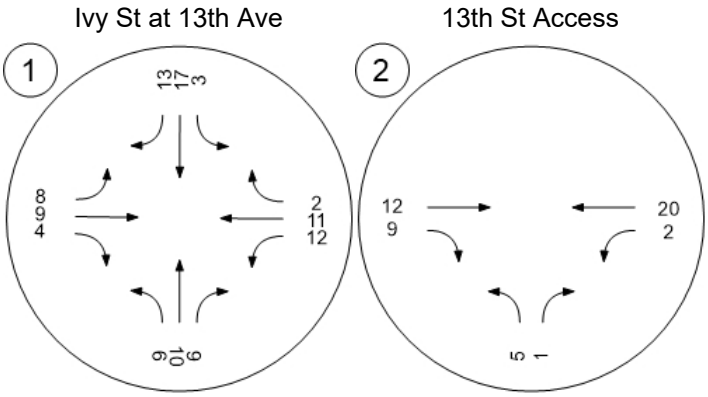
Report Figure 2a: Traffic Volume - Base Volume



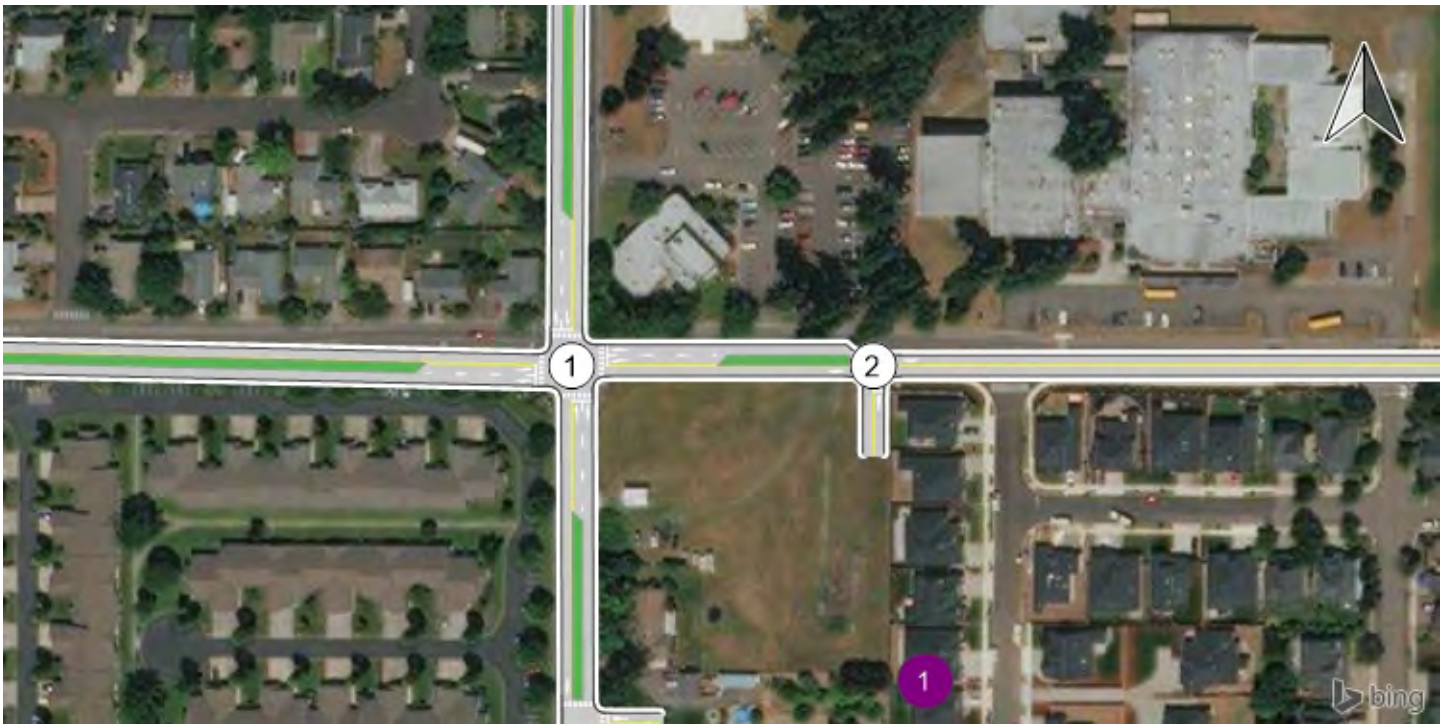


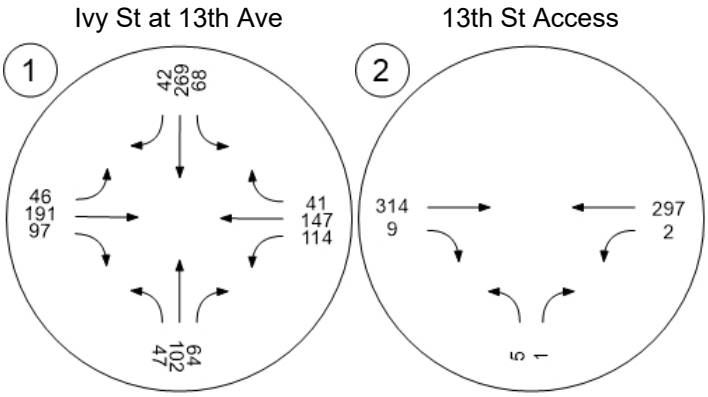
Report Figure 2d: Traffic Volume - Net New Site Trips



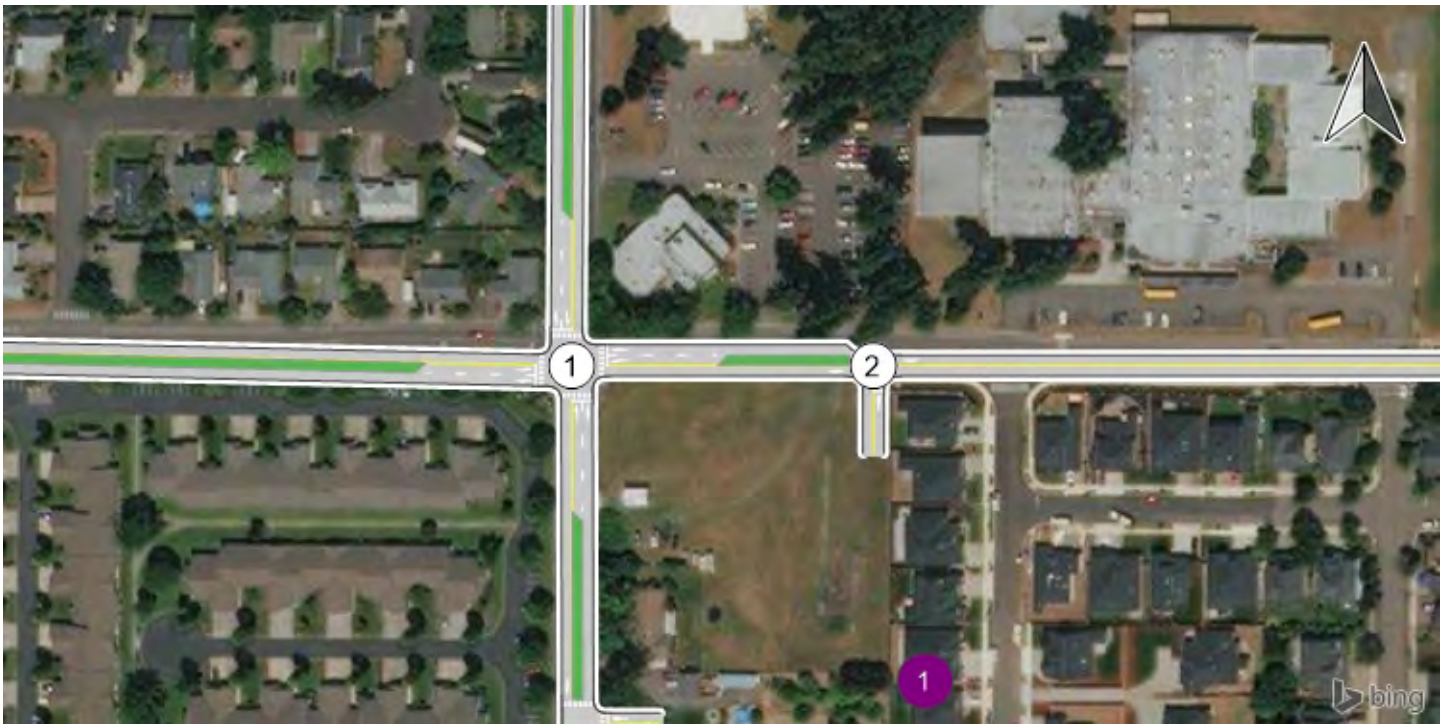


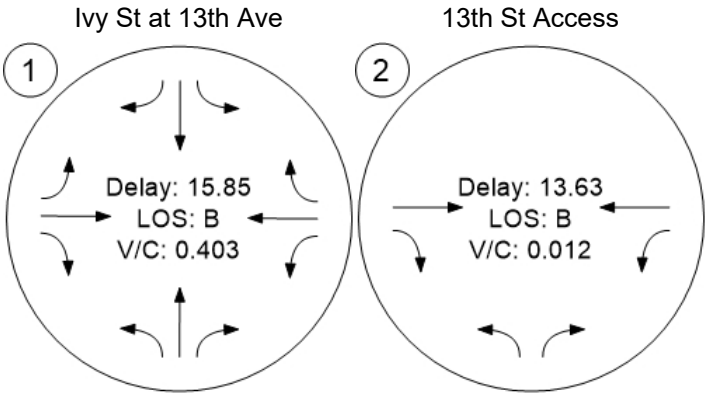
Report Figure 2f: Traffic Volume - Future Total Volume





Report Figure 3: Traffic Conditions





Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\PM Dev w 2 Access (38).pdf

Scenario 8 PM Developed - 38 Homes
7/6/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ivy St at 13th Ave	Signalized	HCM 6th Edition	WB Left	0.407	15.9	B
2	13th St Access	Two-way stop	HCM 6th Edition	NB Left	0.007	13.6	B
9	Ivy St Access	Two-way stop	HCM 6th Edition	WB Left	0.003	16.4	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Ivy St at 13th Ave

Control Type:	Signalized	Delay (sec / veh):	15.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.407

Intersection Setup

Name				Ivy St			13th Ave			13th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name				Ivy St			13th Ave			13th Ave		
Base Volume Input [veh/h]	41	92	55	65	252	29	38	182	93	102	136	39
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	0.90	0.90	0.90	3.20	3.20	3.20	0.40	0.40	0.40
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	11	9	2	19	13	8	8	7	13	11	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	49	103	64	67	271	42	46	190	100	115	147	40
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	28	17	18	74	11	13	52	27	31	40	11
Total Analysis Volume [veh/h]	53	112	70	73	295	46	50	207	109	125	160	43
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	34	0	0	34	0	0	36	0	0	36	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	36	36	36	36	26	26	26	26
g / C, Green / Cycle	0.52	0.52	0.52	0.52	0.37	0.37	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.06	0.12	0.07	0.21	0.05	0.20	0.13	0.12
s, saturation flow rate [veh/h]	932	1571	1091	1658	1051	1571	969	1643
c, Capacity [veh/h]	460	816	585	862	349	575	259	601
d1, Uniform Delay [s]	14.11	9.13	11.68	10.16	21.57	17.61	28.26	16.05
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.51	0.63	0.44	1.36	0.19	0.82	1.39	0.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.12	0.22	0.12	0.40	0.14	0.55	0.48	0.34
d, Delay for Lane Group [s/veh]	14.61	9.76	12.12	11.53	21.75	18.43	29.65	16.38
Lane Group LOS	B	A	B	B	C	B	C	B
Critical Lane Group	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	0.58	1.47	0.69	3.09	0.66	3.96	2.06	2.30
50th-Percentile Queue Length [ft]	14.40	36.75	17.34	77.32	16.52	98.98	51.50	57.41
95th-Percentile Queue Length [veh]	1.04	2.65	1.25	5.57	1.19	7.13	3.71	4.13
95th-Percentile Queue Length [ft]	25.92	66.15	31.21	139.18	29.74	178.16	92.69	103.34

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.61	9.76	9.76	12.12	11.53	11.53	21.75	18.43	18.43	29.65	16.38	16.38
Movement LOS	B	A	A	B	B	B	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	10.86			11.63			18.88			21.43		
Approach LOS	B			B			B			C		
d_I, Intersection Delay [s/veh]	15.87											
Intersection LOS	B											
Intersection V/C	0.407											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	26.58	26.58	26.58	26.58
l_p,int, Pedestrian LOS Score for Intersection	2.355	2.201	2.174	2.217
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	857	857	914	914
d_b, Bicycle Delay [s]	11.43	11.43	10.31	10.31
l_b,int, Bicycle LOS Score for Intersection	2.498	2.794	2.898	2.835
Bicycle LOS	B	C	C	C

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: 13th St Access

Control Type:	Two-way stop	Delay (sec / veh):	13.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.007

Intersection Setup

Name			13th Ave			
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			13th Ave			
Base Volume Input [veh/h]	0	0	302	0	0	277
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.40	0.40	0.40	0.40	0.40	0.40
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	1	13	6	2	22
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	1	315	6	2	299
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	86	2	1	81
Total Analysis Volume [veh/h]	3	1	342	7	2	325
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.61	10.20	0.00	0.00	7.96	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.03	0.03	0.00	0.00	1.09	1.09
95th-Percentile Queue Length [ft]	0.65	0.65	0.00	0.00	27.23	27.23
d_A, Approach Delay [s/veh]	12.76		0.00		0.05	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.10					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 9: Ivy St Access

Control Type:	Two-way stop	Delay (sec / veh):	16.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	288	0	0	447	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	2.40	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	24	1	6	33	1	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	312	1	6	480	1	4
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	85	0	2	130	0	1
Total Analysis Volume [veh/h]	339	1	7	522	1	4
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.01	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.98	0.00	16.41	10.18
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.00	0.00	2.25	2.25	0.03	0.03
95th-Percentile Queue Length [ft]	0.00	0.00	56.21	56.21	0.67	0.67
d_A, Approach Delay [s/veh]	0.00		0.11		11.43	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.13					
Intersection LOS	C					

Ivy St Townhomes TIA - 18-387

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Report File: J:\...\PM Dev w 2 Access (38).pdf

Scenario 8 PM Developed - 38 Homes
7/6/2018

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	49	103	64	67	271	42	46	190	100	115	147	40	1234

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
2	13th St Access	3	1	315	6	2	299	626

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
9	Ivy St Access	312	1	6	480	1	4	804

Ivy St Townhomes TIA - 18-387

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Report File: J:\...\PM Dev w 2 Access (38).pdf

Scenario 8 PM Developed - 38 Homes
7/6/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	Final Base	41	92	55	65	252	29	38	182	93	102	136	39	1124
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	8	11	9	2	19	13	8	8	7	13	11	1	110
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**49**	**103**	**64**	**67**	**271**	**42**	**46**	**190**	**100**	**115**	**147**	**40**	**1234**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
2	13th St Access	Final Base	0	0	302	0	0	277	579
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	3	1	13	6	2	22	47
		Other	0	0	0	0	0	0	0
		Future Total	**3**	**1**	**315**	**6**	**2**	**299**	**626**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
9	Ivy St Access	Final Base	288	0	0	447	0	0	735
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	24	1	6	33	1	4	69
		Other	0	0	0	0	0	0	0
		Future Total	**312**	**1**	**6**	**480**	**1**	**4**	**804**

Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\PM Dev w 2 Access (38).pdf

Scenario 8 PM Developed - 38 Homes
7/6/2018

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: Ivy St Townhouses	Apts	ITE 220	Units	0.560	38.000	63.00	37.00	13	8	21	11.86
7: Mayberry Group	Homes	ITE 210	Homes	0.990	89.000	63.00	37.00	55	33	88	49.72
8: Beck Pond	Homes	ite 210	Homes	0.990	69.000	63.00	37.00	43	25	68	38.42
					Added Trips Total			**111**	**66**	**177**	**100.00**

Ivy St Townhomes TIA - 18-387

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Report File: J:\...\PM Dev w 2 Access (38).pdf

Scenario 8 PM Developed - 38 Homes
7/6/2018

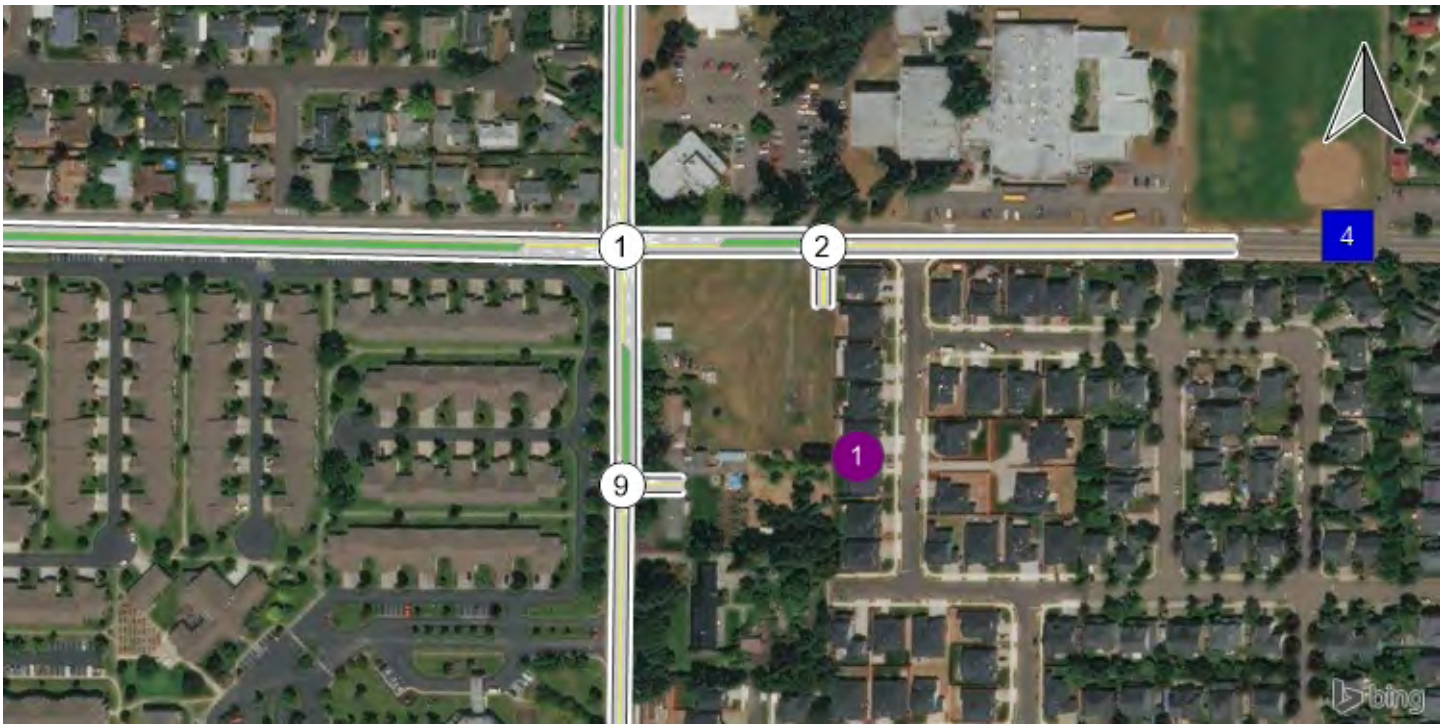
Trip Distribution summary

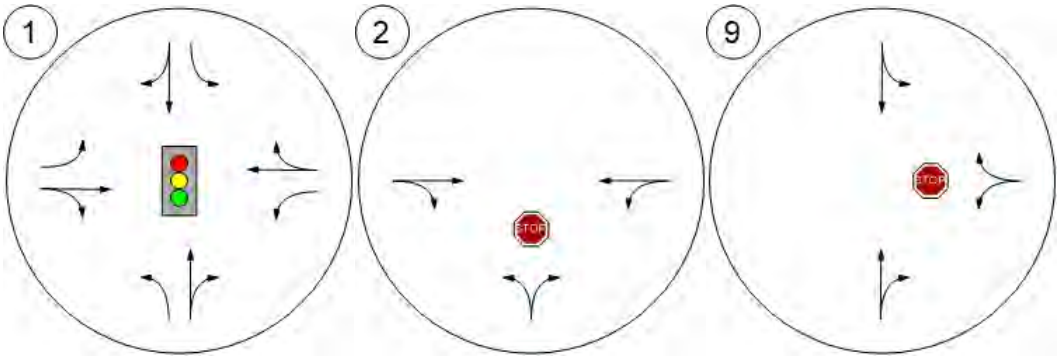
Zone / Gate	Zone 1: Ivy St Townhouses			
	To Ivy St Townhouses:		From Ivy St Townhouses:	
	Share %	Trips	Share %	Trips
7: Mayberry Group	0.00	0	0.00	0
8: Beck Pond	0.00	0	0.00	0
2: Gate	35.00	5	35.00	3
3: Gate	30.00	4	30.00	2
4: Gate	20.00	3	20.00	2
5: Gate	15.00	2	15.00	1
6: Gate	0.00	0	0.00	0
Total	**100.00**	**14**	**100.00**	**8**

Zone / Gate	Zone 7: Mayberry Group			
	To Mayberry Group:		From Mayberry Group:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
8: Beck Pond	0.00	0	0.00	0
2: Gate	35.00	19	35.00	11
3: Gate	30.00	17	30.00	10
4: Gate	20.00	11	20.00	7
5: Gate	15.00	8	15.00	5
6: Gate	0.00	0	0.00	0
Total	**100.00**	**55**	**100.00**	**33**

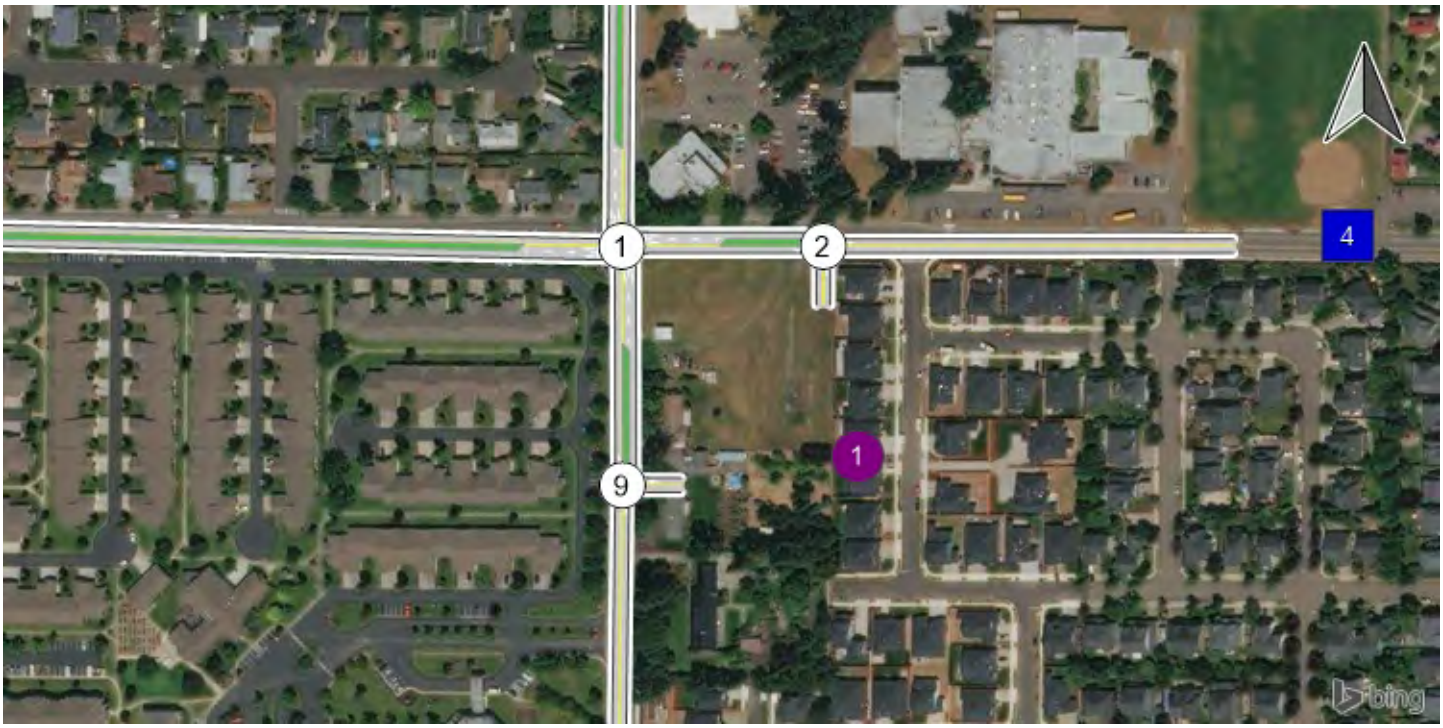
Zone / Gate	Zone 8: Beck Pond			
	To Beck Pond:		From Beck Pond:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
7: Mayberry Group	0.00	0	0.00	0
2: Gate	35.00	15	35.00	8
3: Gate	30.00	13	30.00	8
4: Gate	20.00	9	20.00	5
5: Gate	15.00	6	15.00	4
6: Gate	0.00	0	0.00	0
Total	**100.00**	**43**	**100.00**	**25**

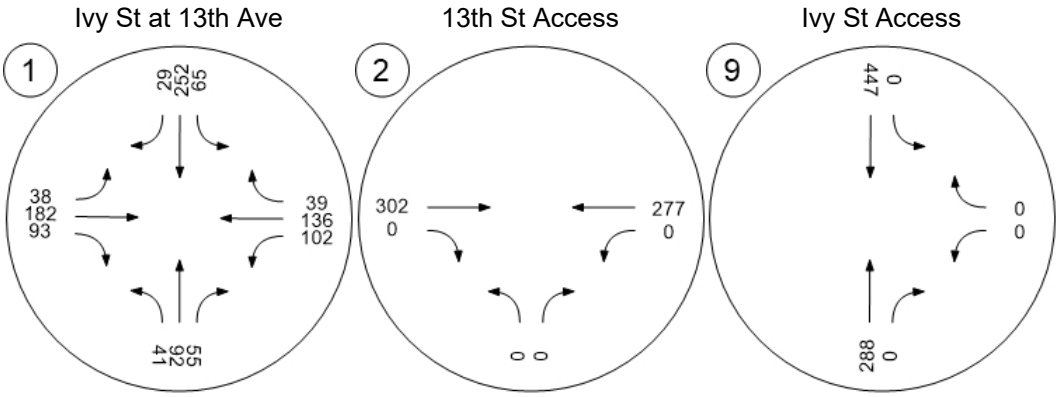
Report Figure 1: Lane Configuration and Traffic Control



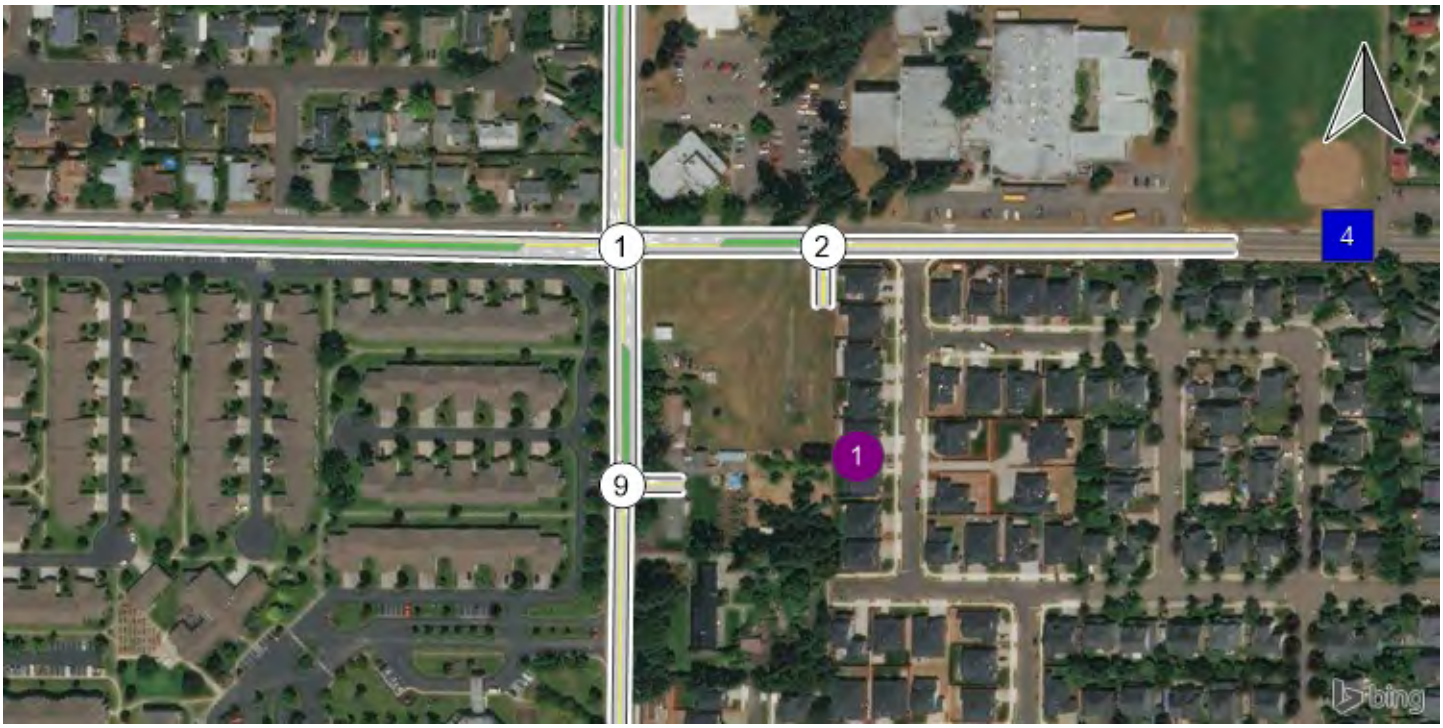


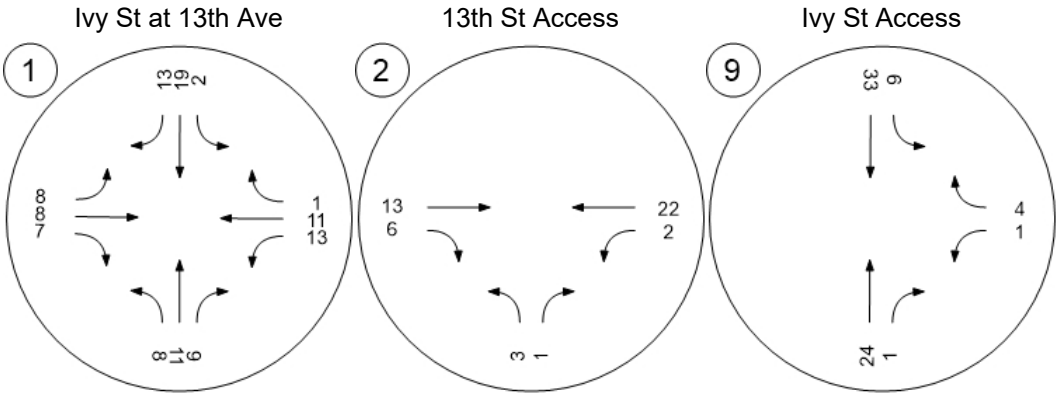
Report Figure 2a: Traffic Volume - Base Volume



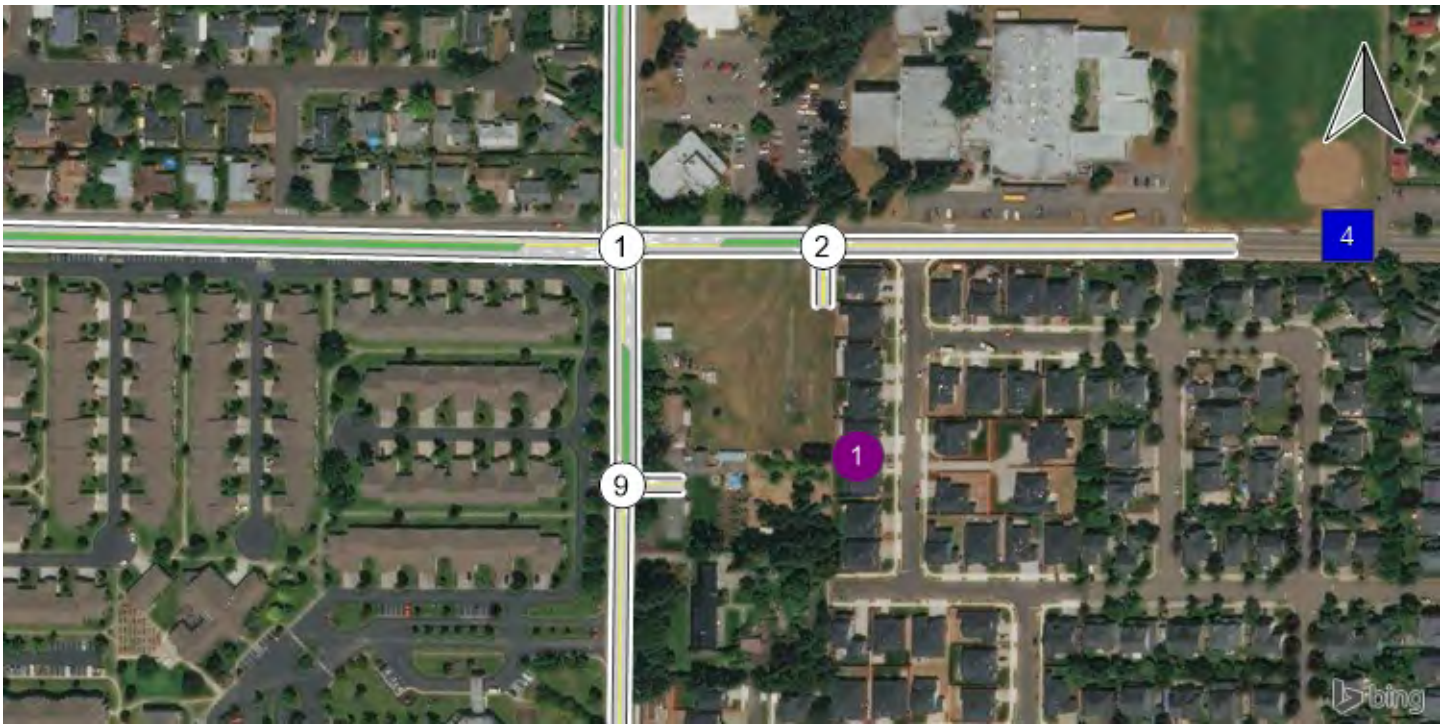


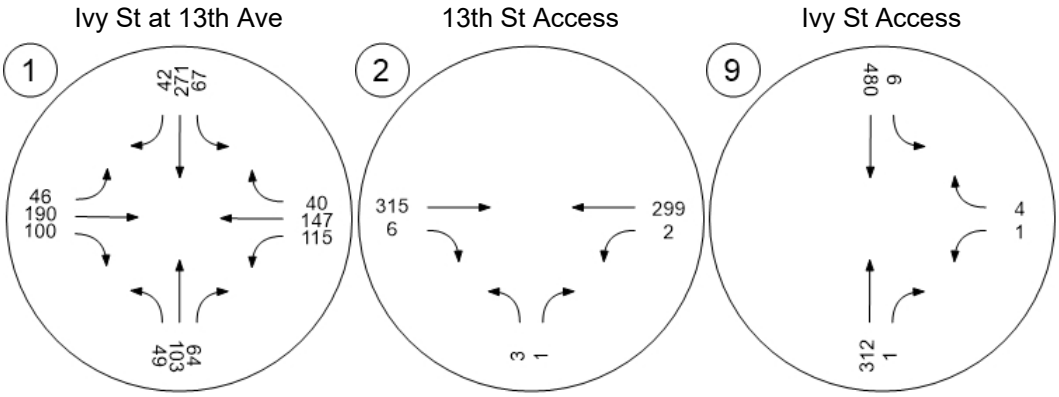
Report Figure 2d: Traffic Volume - Net New Site Trips



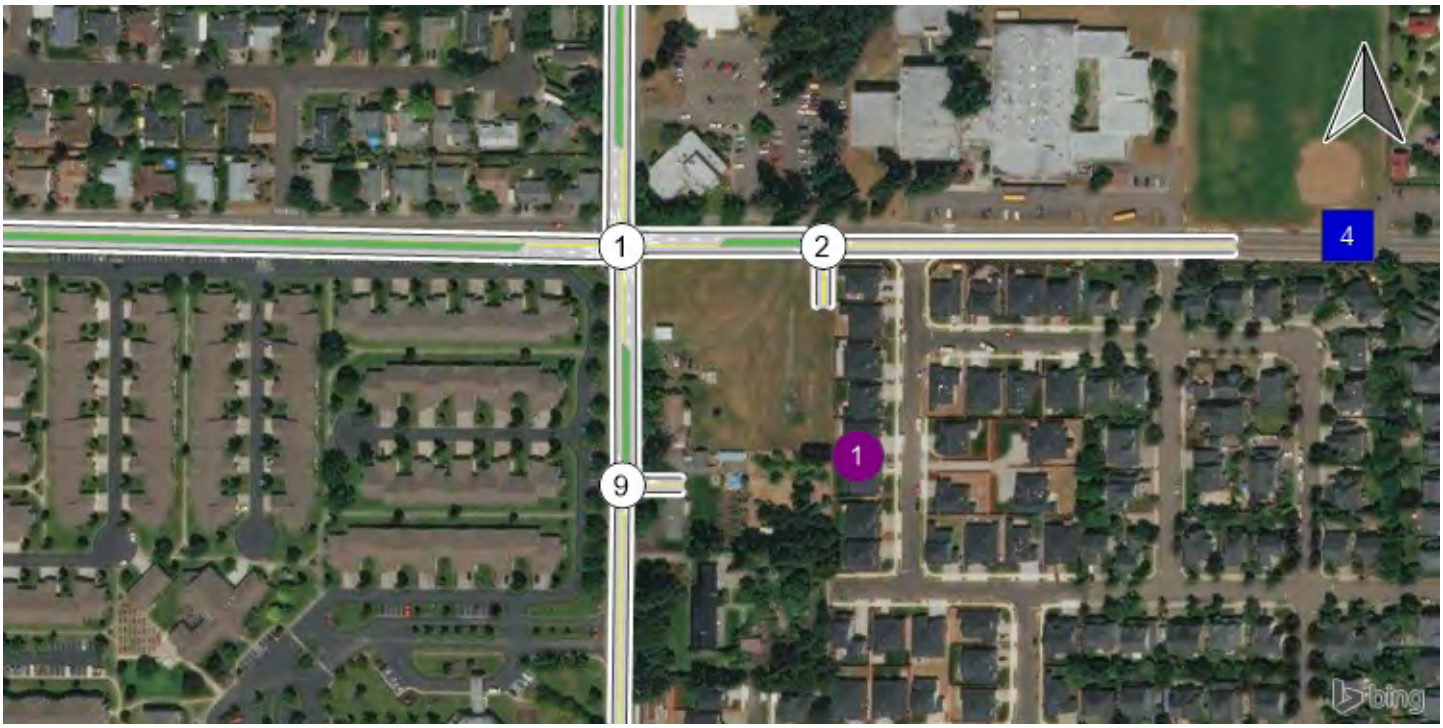


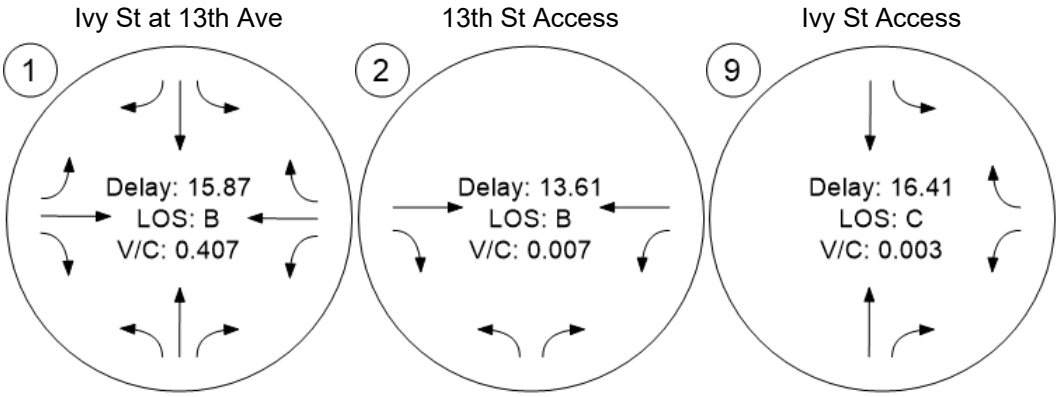
Report Figure 2f: Traffic Volume - Future Total Volume





Report Figure 3: Traffic Conditions





Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\AM Future w 1 Access (30).pdf

Scenario 15 AM Future 1 Access (30)
7/6/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ivy St at 13th Ave	Signalized	HCM 6th Edition	EB Left	0.603	16.4	B
2	13th St Access	Two-way stop	HCM 6th Edition	NB Left	0.037	17.7	C
9	Ivy St Access	Two-way stop	HCM 6th Edition	WB Left	0.000	16.9	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Ivy St at 13th Ave

Control Type:	Signalized	Delay (sec / veh):	16.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.603

Intersection Setup

Name				Ivy St			13th Ave			13th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name				Ivy St			13th Ave			13th Ave		
Base Volume Input [veh/h]	93	196	49	25	77	8	21	116	26	50	222	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	8.30	8.30	8.30	9.10	9.10	9.10	5.50	5.50	5.50	8.00	8.00	8.00
Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	15	10	1	5	4	11	9	6	5	7	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	138	301	82	38	117	16	42	178	44	78	331	61
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	91	25	11	35	5	13	54	13	23	100	18
Total Analysis Volume [veh/h]	166	363	99	46	141	19	51	214	53	94	399	73
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	25	0	0	25	0	0	35	0	0	35	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	27	27	27	27	25	25	25	25
g / C, Green / Cycle	0.46	0.46	0.46	0.46	0.41	0.41	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.16	0.30	0.06	0.10	0.06	0.17	0.10	0.30
s, saturation flow rate [veh/h]	1048	1540	789	1554	806	1580	953	1559
c, Capacity [veh/h]	515	705	288	712	200	646	349	637
d1, Uniform Delay [s]	13.85	12.60	19.74	9.83	26.04	12.63	19.20	15.05
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.15
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.65	4.71	1.18	0.73	0.67	0.42	0.41	2.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.32	0.66	0.16	0.22	0.26	0.41	0.27	0.74
d, Delay for Lane Group [s/veh]	15.51	17.31	20.93	10.56	26.70	13.06	19.61	17.39
Lane Group LOS	B	B	C	B	C	B	B	B
Critical Lane Group	No	Yes	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.72	5.00	0.60	1.25	0.71	2.38	1.08	5.27
50th-Percentile Queue Length [ft]	43.03	124.93	14.90	31.15	17.74	59.58	27.02	131.86
95th-Percentile Queue Length [veh]	3.10	8.66	1.07	2.24	1.28	4.29	1.95	9.04
95th-Percentile Queue Length [ft]	77.46	216.58	26.81	56.06	31.93	107.24	48.64	226.03

Movement, Approach, & Intersection Results

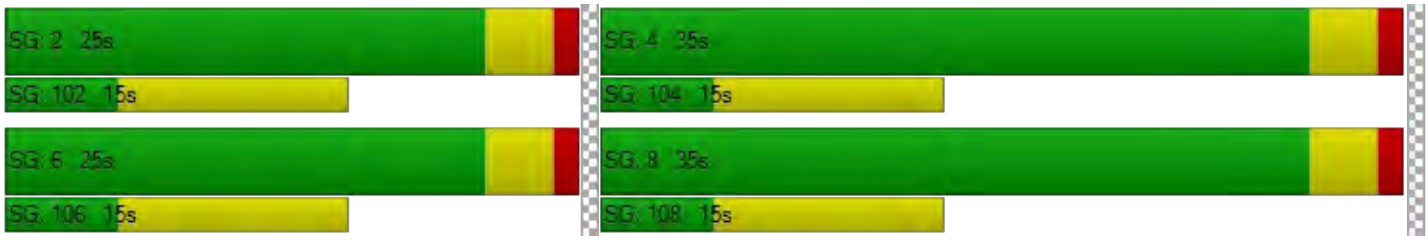
d_M, Delay for Movement [s/veh]	15.51	17.31	17.31	20.93	10.56	10.56	26.70	13.06	13.06	19.61	17.39	17.39
Movement LOS	B	B	B	C	B	B	C	B	B	B	B	B
d_A, Approach Delay [s/veh]	16.83			12.88			15.24			17.76		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	16.37											
Intersection LOS	B											
Intersection V/C	0.603											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.352	2.219	2.401	2.237
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	700	700	1033	1033
d_b, Bicycle Delay [s]	12.68	12.68	7.01	7.01
l_b,int, Bicycle LOS Score for Intersection	3.147	2.450	2.819	3.228
Bicycle LOS	C	B	C	C

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: 13th St Access

Control Type:	Two-way stop	Delay (sec / veh):	17.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.037

Intersection Setup

Name			13th Ave			
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			13th Ave			
Base Volume Input [veh/h]	0	0	190	0	0	312
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	8.00	8.00	8.00	8.00	8.00	8.00
Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	2	18	2	1	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	2	295	2	1	462
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	1	89	1	0	139
Total Analysis Volume [veh/h]	11	2	355	2	1	557
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.00	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	17.67	10.80	0.00	0.00	8.08	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.13	0.13	0.00	0.00	2.65	2.65
95th-Percentile Queue Length [ft]	3.13	3.13	0.00	0.00	66.18	66.18
d_A, Approach Delay [s/veh]	16.61		0.00		0.01	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.24					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 9: Ivy St Access

Control Type:	Two-way stop	Delay (sec / veh):	16.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	153	0	0	338	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.38	0.38	0.38	0.38	2.00	2.00
Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	27	0	0	16	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	250	0	0	509	0	0
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	75	0	0	153	0	0
Total Analysis Volume [veh/h]	301	0	0	613	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.84	0.00	16.87	9.87
Movement LOS	A	A	A	A	C	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		13.37	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	C					

Ivy St Townhomes TIA - 18-387

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Scenario 15 AM Future 1 Access (30)
7/6/2018

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	138	301	82	38	117	16	42	178	44	78	331	61	1426

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
2	13th St Access	9	2	295	2	1	462	771

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
9	Ivy St Access	250	0	0	509	0	0	759

Ivy St Townhomes TIA - 18-387

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Scenario 15 AM Future 1 Access (30)
7/6/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	Final Base	93	196	49	25	77	8	21	116	26	50	222	40	923
		Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	2	15	10	1	5	4	11	9	6	5	7	3	78
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**138**	**301**	**82**	**38**	**117**	**16**	**42**	**178**	**44**	**78**	**331**	**61**	**1426**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
2	13th St Access	Final Base	0	0	190	0	0	312	502
		Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	9	2	18	2	1	6	38
		Other	0	0	0	0	0	0	0
		Future Total	**9**	**2**	**295**	**2**	**1**	**462**	**771**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
9	Ivy St Access	Final Base	153	0	0	338	0	0	491
		Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	27	0	0	16	0	0	43
		Other	0	0	0	0	0	0	0
		Future Total	**250**	**0**	**0**	**509**	**0**	**0**	**759**

Ivy St Townhomes TIA - 18-387

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Report File: J:\...\AM Future w 1 Access (30).pdf

Scenario 15 AM Future 1 Access (30)
7/6/2018

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: Ivy St Townhouses	Apts	ITE 220	Units	0.460	30.000	23.00	77.00	3	11	14	10.69
7: Mayberry Group	Homes	ITE 210	Homes	0.740	89.000	25.00	75.00	16	50	66	50.38
8: Beck Pond	Homes	ite 210	Homes	0.740	69.000	25.00	75.00	13	38	51	38.93
					Added Trips Total			**32**	**99**	**131**	**100.00**

Ivy St Townhomes TIA - 18-387

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Scenario 15 AM Future 1 Access (30)
7/6/2018

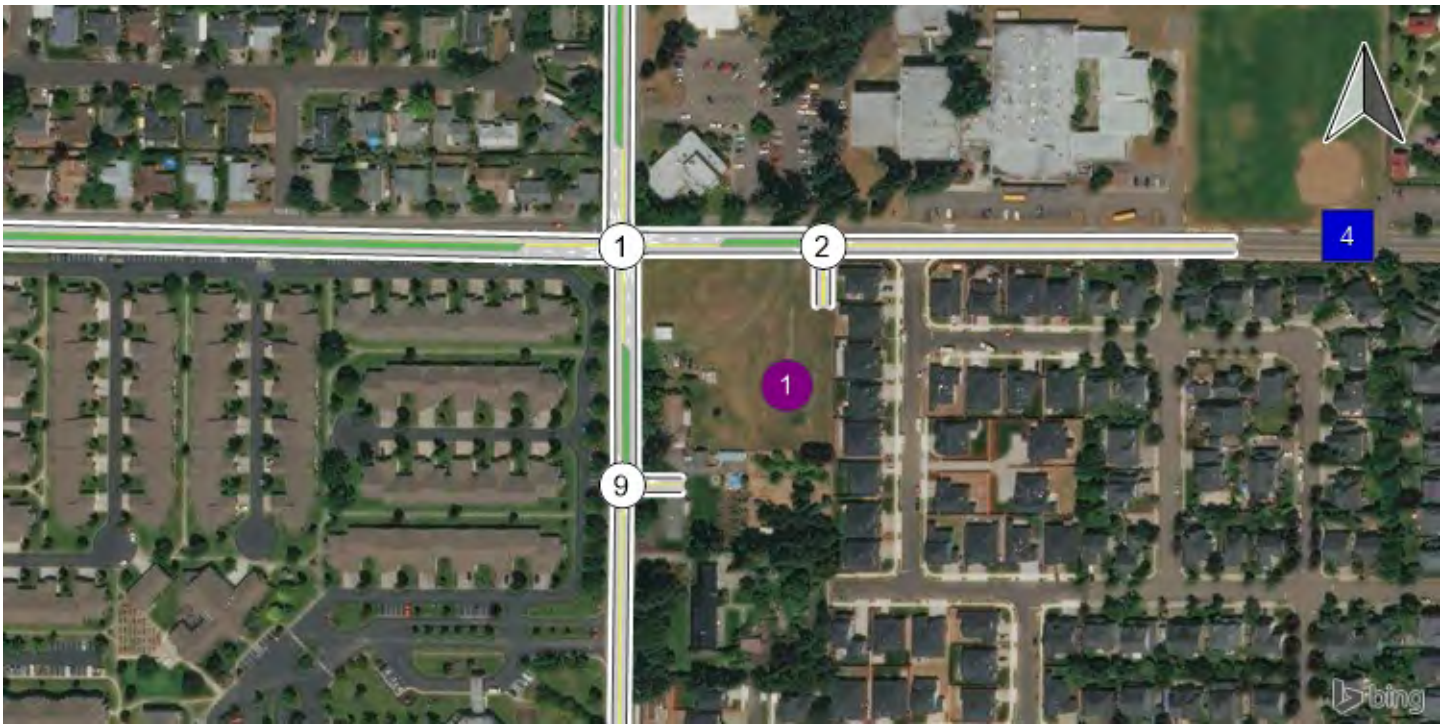
Trip Distribution summary

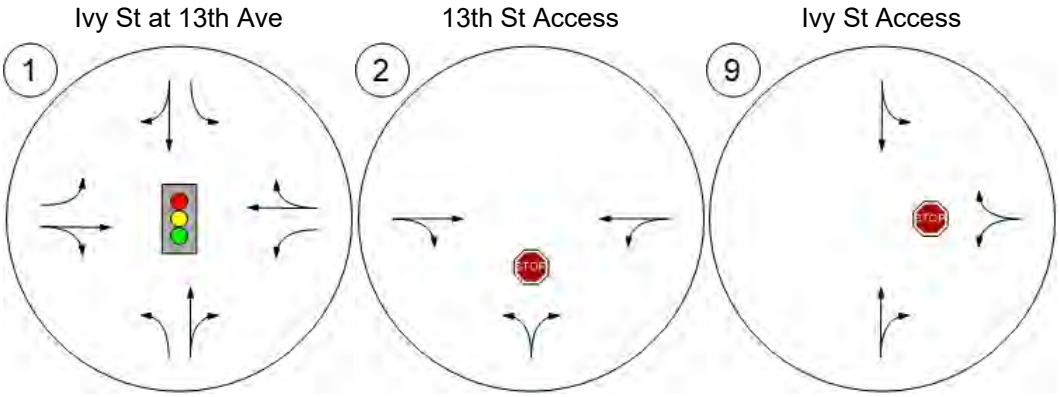
Zone / Gate	Zone 1: Ivy St Townhouses			
	To Ivy St Townhouses:		From Ivy St Townhouses:	
	Share %	Trips	Share %	Trips
7: Mayberry Group	0.00	0	0.00	0
8: Beck Pond	0.00	0	0.00	0
2: Gate	35.00	1	35.00	4
3: Gate	30.00	1	30.00	3
4: Gate	20.00	1	20.00	2
5: Gate	15.00	0	15.00	2
6: Gate	0.00	0	0.00	0
Total	**100.00**	**3**	**100.00**	**11**

Zone / Gate	Zone 7: Mayberry Group			
	To Mayberry Group:		From Mayberry Group:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
8: Beck Pond	0.00	0	0.00	0
2: Gate	35.00	6	35.00	17
3: Gate	30.00	5	30.00	15
4: Gate	20.00	3	20.00	10
5: Gate	15.00	2	15.00	8
6: Gate	0.00	0	0.00	0
Total	**100.00**	**16**	**100.00**	**50**

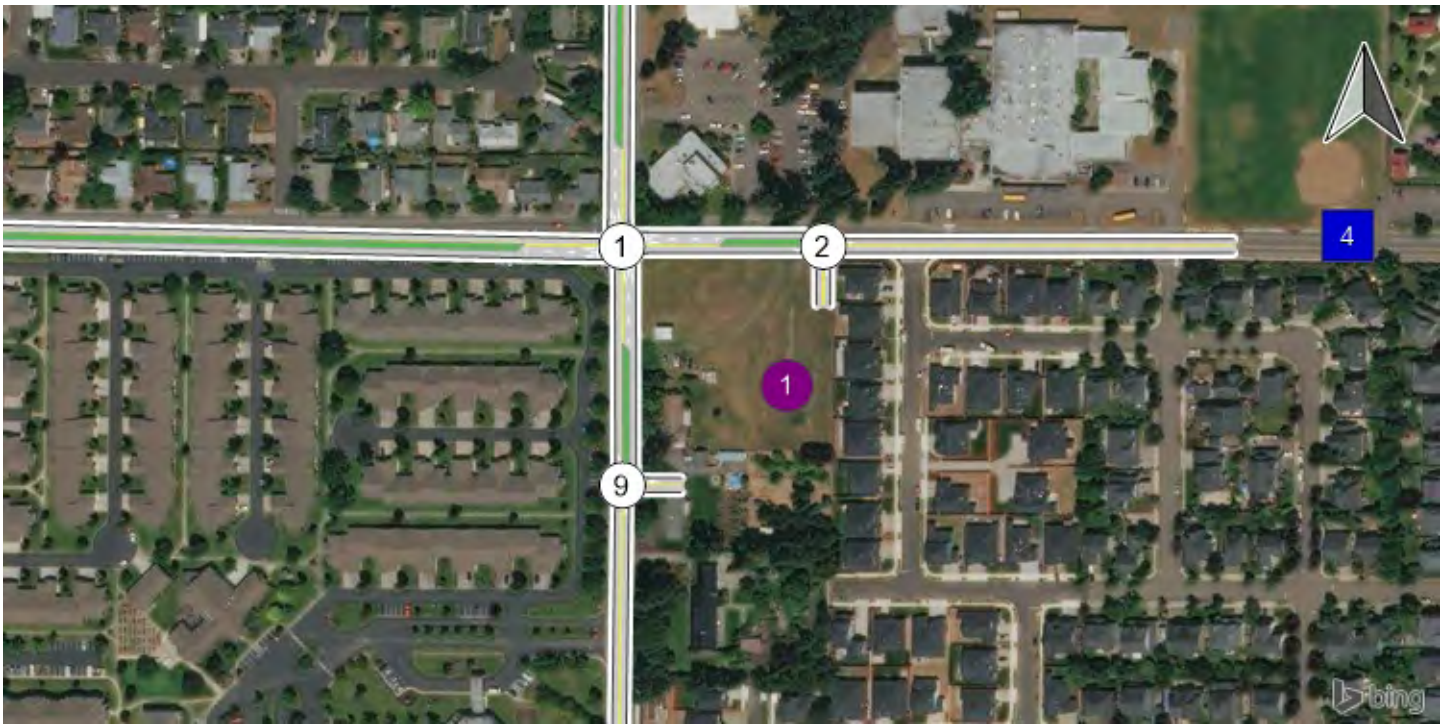
Zone / Gate	Zone 8: Beck Pond			
	To Beck Pond:		From Beck Pond:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
7: Mayberry Group	0.00	0	0.00	0
2: Gate	35.00	5	35.00	13
3: Gate	30.00	4	30.00	11
4: Gate	20.00	3	20.00	8
5: Gate	15.00	2	15.00	6
6: Gate	0.00	0	0.00	0
Total	**100.00**	**14**	**100.00**	**38**

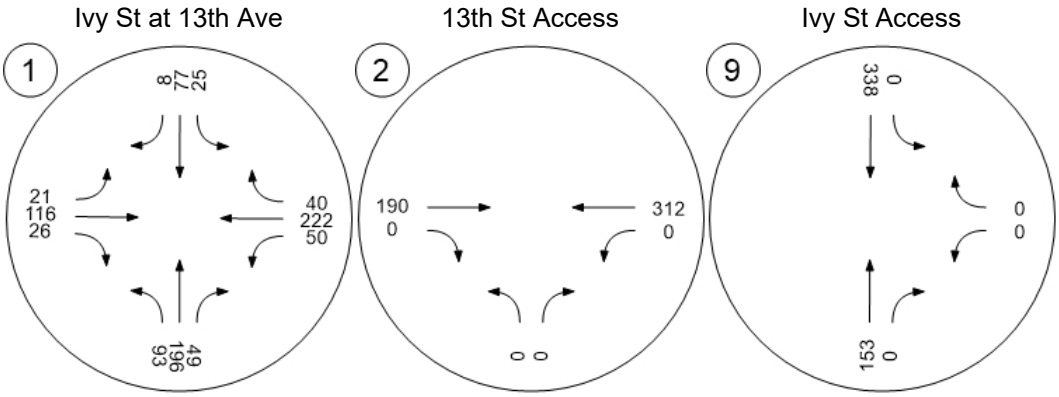
Report Figure 1: Lane Configuration and Traffic Control



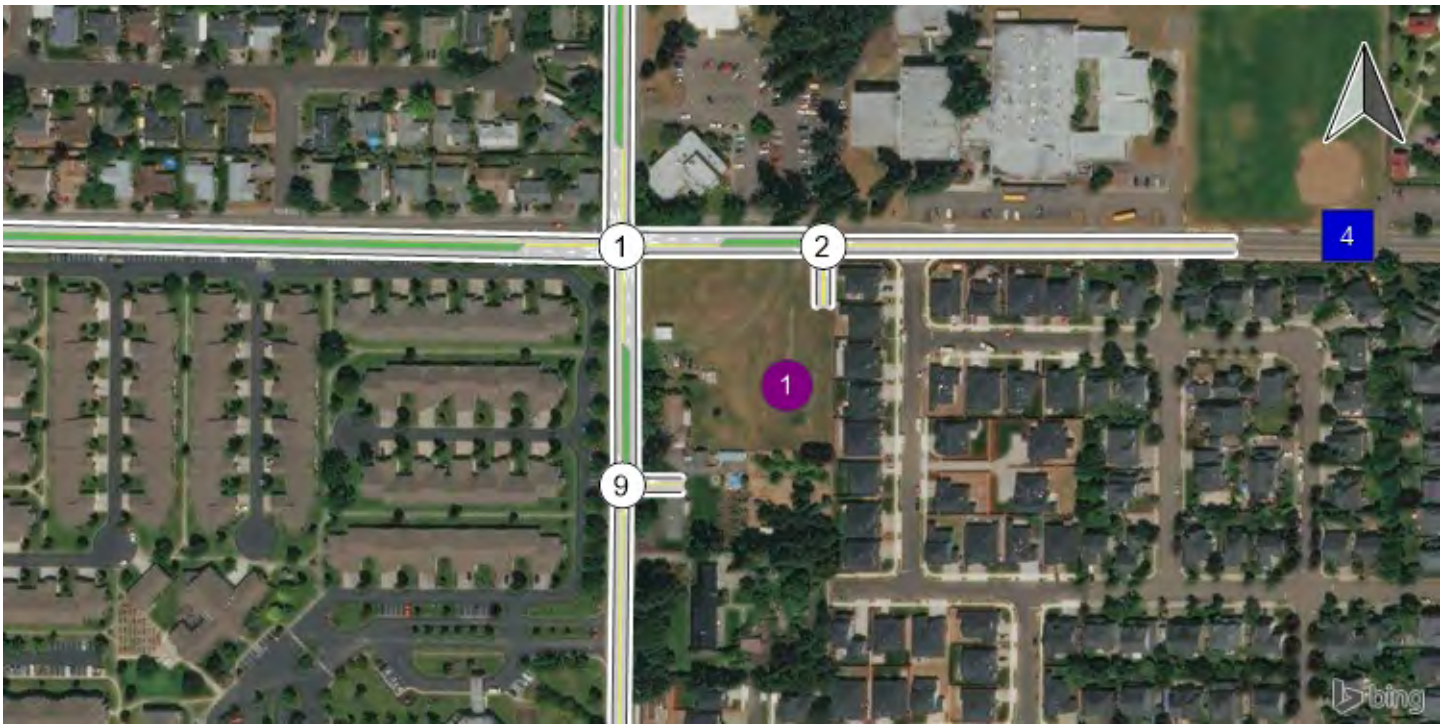


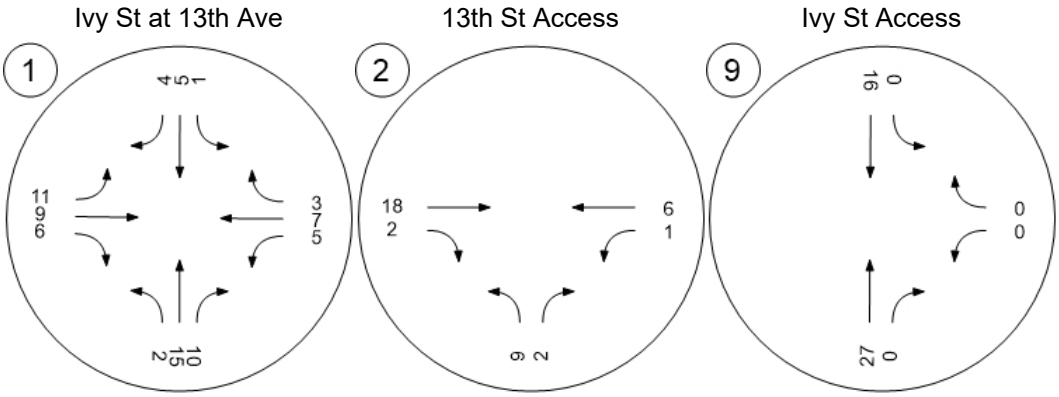
Report Figure 2a: Traffic Volume - Base Volume



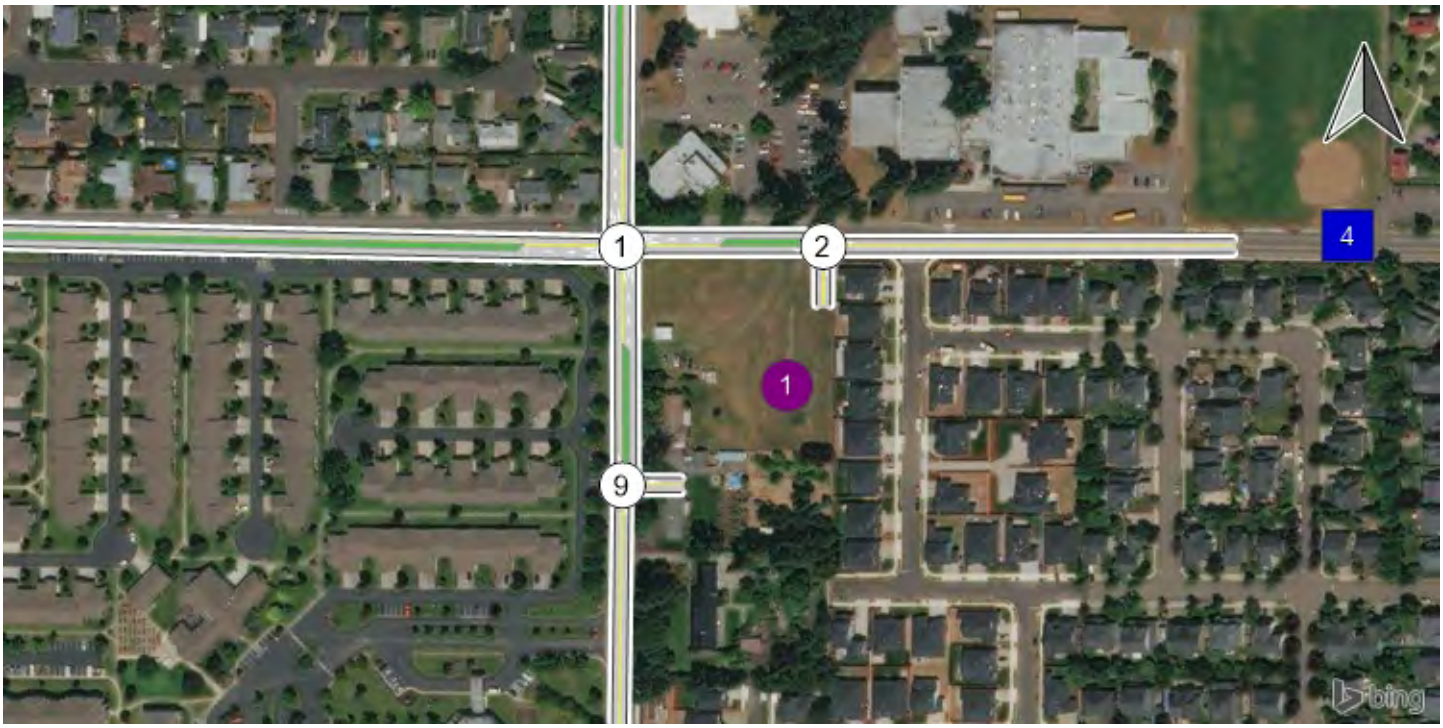


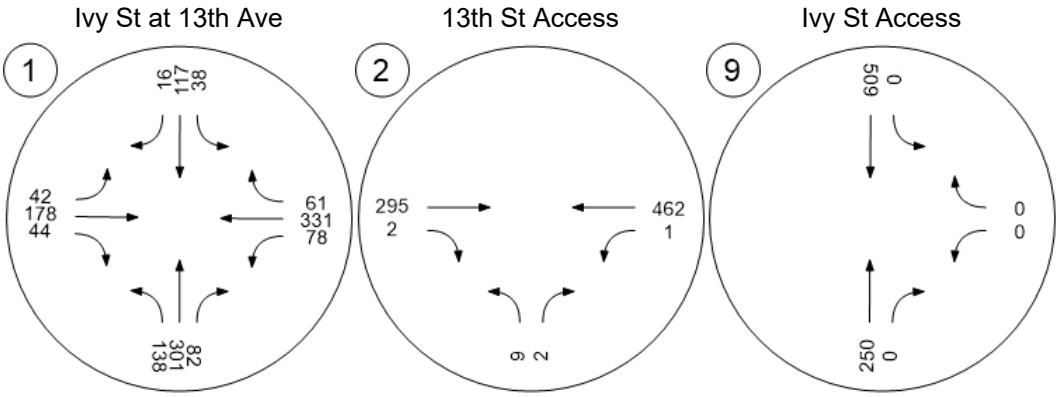
Report Figure 2d: Traffic Volume - Net New Site Trips



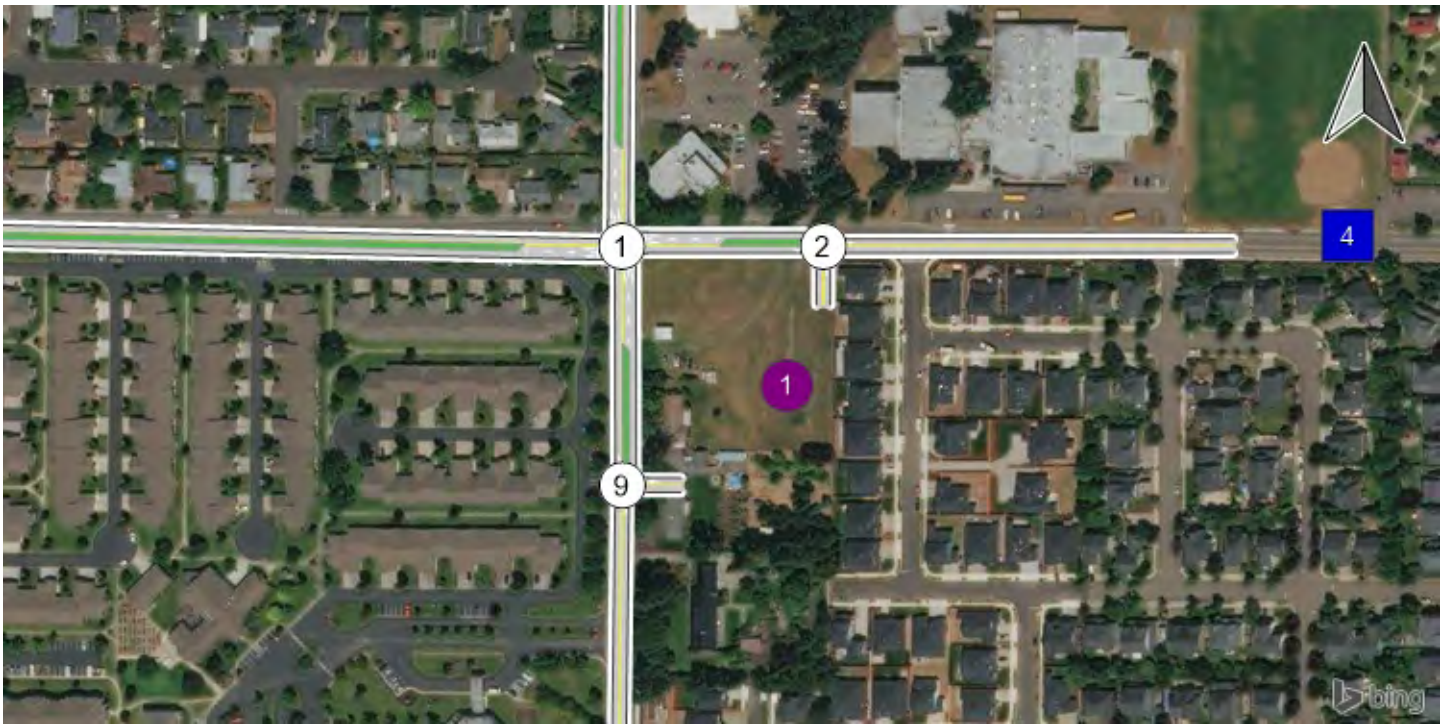


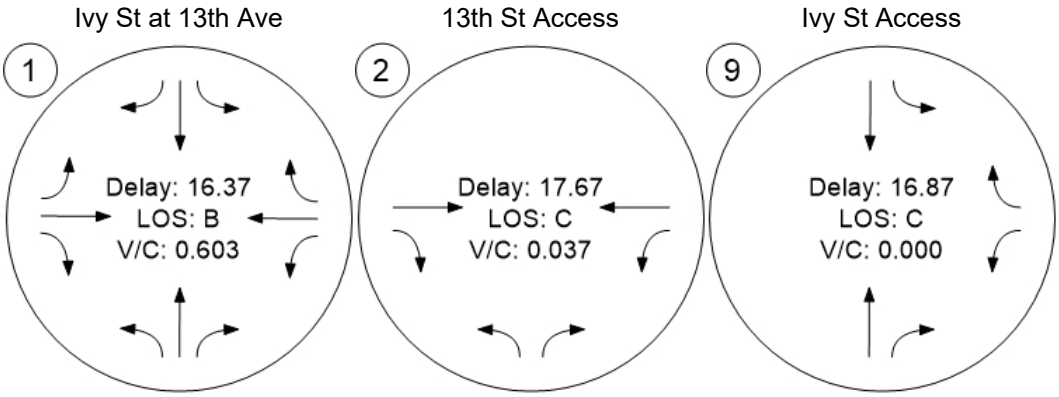
Report Figure 2f: Traffic Volume - Future Total Volume





Report Figure 3: Traffic Conditions





Ivy St Townhomes TIA - 18-387

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Scenario 16 PM Future 1 Access (30)
7/6/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ivy St at 13th Ave	Signalized	HCM 6th Edition	WB Left	0.574	22.2	C
2	13th St Access	Two-way stop	HCM 6th Edition	NB Left	0.018	17.9	C
9	Ivy St Access	Two-way stop	HCM 6th Edition	WB Left	0.000	23.4	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Ivy St at 13th Ave

Control Type:	Signalized	Delay (sec / veh):	22.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.574

Intersection Setup

Name				Ivy St			13th Ave			13th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name				Ivy St			13th Ave			13th Ave		
Base Volume Input [veh/h]	41	92	55	65	252	29	38	182	93	102	136	39
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	0.90	0.90	0.90	3.20	3.20	3.20	0.40	0.40	0.40
Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	10	9	3	17	13	8	9	4	12	11	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	66	144	89	98	385	55	63	275	140	161	210	59
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	39	24	27	105	15	17	75	38	44	57	16
Total Analysis Volume [veh/h]	72	157	97	107	418	60	68	299	152	175	228	64
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	42	0	0	42	0	0	48	0	0	48	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	41	41	41	41	41	41	41	41
g / C, Green / Cycle	0.45	0.45	0.45	0.45	0.46	0.46	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.09	0.16	0.10	0.29	0.07	0.29	0.20	0.18
s, saturation flow rate [veh/h]	822	1572	1022	1661	969	1573	856	1641
c, Capacity [veh/h]	246	708	406	749	395	724	274	755
d1, Uniform Delay [s]	31.44	16.19	23.32	19.06	22.03	18.37	33.86	15.94
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.16	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.01	1.41	1.58	4.14	0.20	1.27	2.48	0.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.29	0.36	0.26	0.64	0.17	0.62	0.64	0.39
d, Delay for Lane Group [s/veh]	34.44	17.60	24.90	23.20	22.24	19.64	36.34	16.27
Lane Group LOS	C	B	C	C	C	B	D	B
Critical Lane Group	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	1.55	3.57	1.87	8.15	1.06	7.10	3.86	3.91
50th-Percentile Queue Length [ft]	38.83	89.18	46.75	203.66	26.52	177.47	96.42	97.82
95th-Percentile Queue Length [veh]	2.80	6.42	3.37	12.83	1.91	11.47	6.94	7.04
95th-Percentile Queue Length [ft]	69.90	160.52	84.14	320.69	47.74	286.70	173.55	176.07

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.44	17.60	17.60	24.90	23.20	23.20	22.24	19.64	19.64	36.34	16.27	16.27
Movement LOS	C	B	B	C	C	C	C	B	B	D	B	B
d_A, Approach Delay [s/veh]	21.32			23.51			19.98			23.79		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	22.24											
Intersection LOS	C											
Intersection V/C	0.574											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	2.539	2.322	2.282	2.357
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	844	844	978	978
d_b, Bicycle Delay [s]	15.02	15.02	11.76	11.76
l_b,int, Bicycle LOS Score for Intersection	2.648	3.076	3.150	3.065
Bicycle LOS	B	C	C	C

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: 13th St Access

Control Type:	Two-way stop	Delay (sec / veh):	17.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.018

Intersection Setup

Name			13th Ave			
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			13th Ave			
Base Volume Input [veh/h]	0	0	302	0	0	277
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.40	0.40	0.40	0.40	0.40	0.40
Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	1	12	9	2	20
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	1	453	9	2	424
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	123	2	1	115
Total Analysis Volume [veh/h]	5	1	492	10	2	461
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	17.85	11.47	0.00	0.00	8.37	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.06	0.06	0.00	0.00	2.22	2.22
95th-Percentile Queue Length [ft]	1.47	1.47	0.00	0.00	55.52	55.52
d_A, Approach Delay [s/veh]	16.79		0.00		0.04	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.12					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 9: Ivy St Access

Control Type:	Two-way stop	Delay (sec / veh):	23.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	288	0	0	447	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	2.40	2.00	2.00
Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	25	0	0	33	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	445	0	0	686	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	121	0	0	186	0	0
Total Analysis Volume [veh/h]	484	0	0	746	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.34	0.00	23.35	11.18
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		17.27	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	C					

Ivy St Townhomes TIA - 18-387

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Scenario 16 PM Future 1 Access (30)
7/6/2018

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	66	144	89	98	385	55	63	275	140	161	210	59	1745

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
2	13th St Access	5	1	453	9	2	424	894

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
9	Ivy St Access	445	0	0	686	0	0	1131

Ivy St Townhomes TIA - 18-387

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Scenario 16 PM Future 1 Access (30)
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Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	Final Base	41	92	55	65	252	29	38	182	93	102	136	39	1124
		Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	6	10	9	3	17	13	8	9	4	12	11	2	104
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**66**	**144**	**89**	**98**	**385**	**55**	**63**	**275**	**140**	**161**	**210**	**59**	**1745**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
2	13th St Access	Final Base	0	0	302	0	0	277	579
		Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	5	1	12	9	2	20	49
		Other	0	0	0	0	0	0	0
		Future Total	**5**	**1**	**453**	**9**	**2**	**424**	**894**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
9	Ivy St Access	Final Base	288	0	0	447	0	0	735
		Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	25	0	0	33	0	0	58
		Other	0	0	0	0	0	0	0
		Future Total	**445**	**0**	**0**	**686**	**0**	**0**	**1131**

Ivy St Townhomes TIA - 18-387

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Scenario 16 PM Future 1 Access (30)
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Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: Ivy St Townhouses	Apts	ITE 220	Units	0.560	30.000	63.00	37.00	11	6	17	9.83
7: Mayberry Group	Homes	ITE 210	Homes	0.990	89.000	63.00	37.00	55	33	88	50.87
8: Beck Pond	Homes	ite 210	Homes	0.990	69.000	63.00	37.00	43	25	68	39.31
					Added Trips Total			**109**	**64**	**173**	**100.00**

Ivy St Townhomes TIA - 18-387

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Scenario 16 PM Future 1 Access (30)
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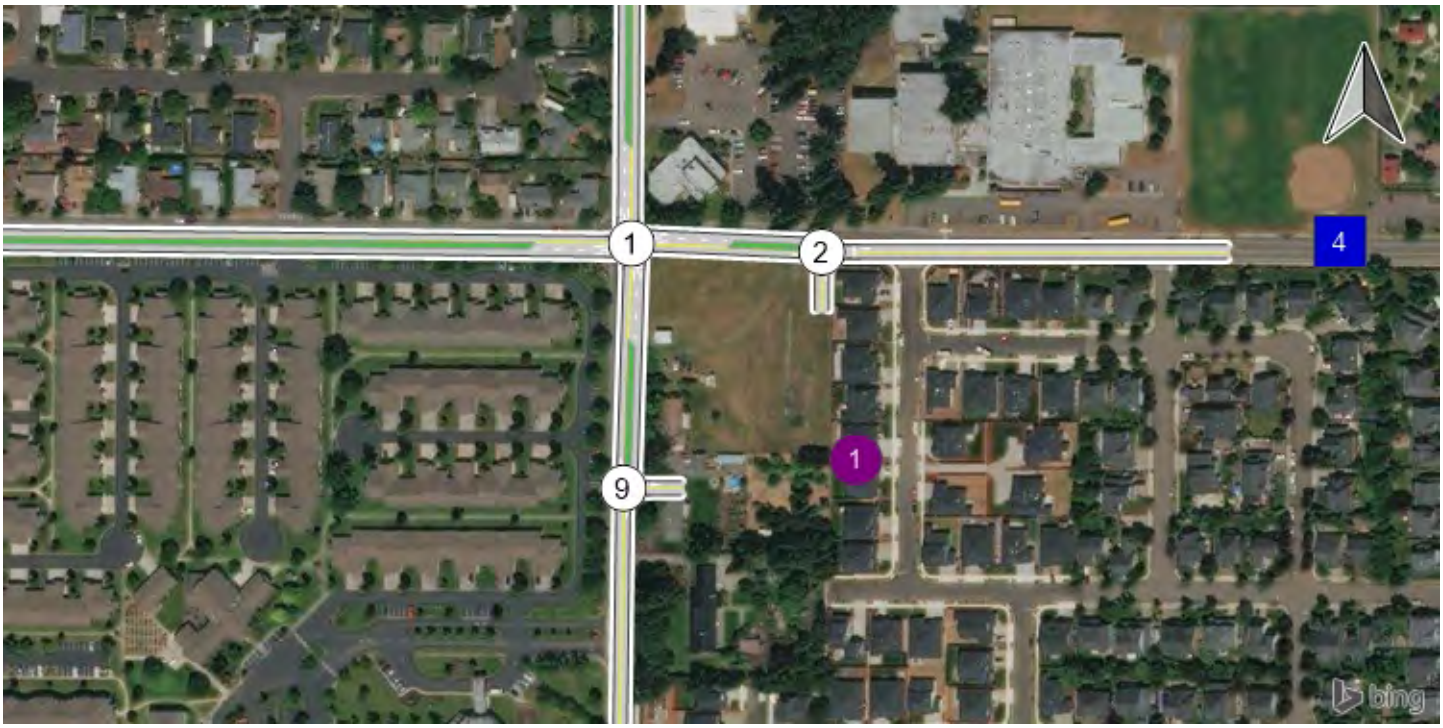
Trip Distribution summary

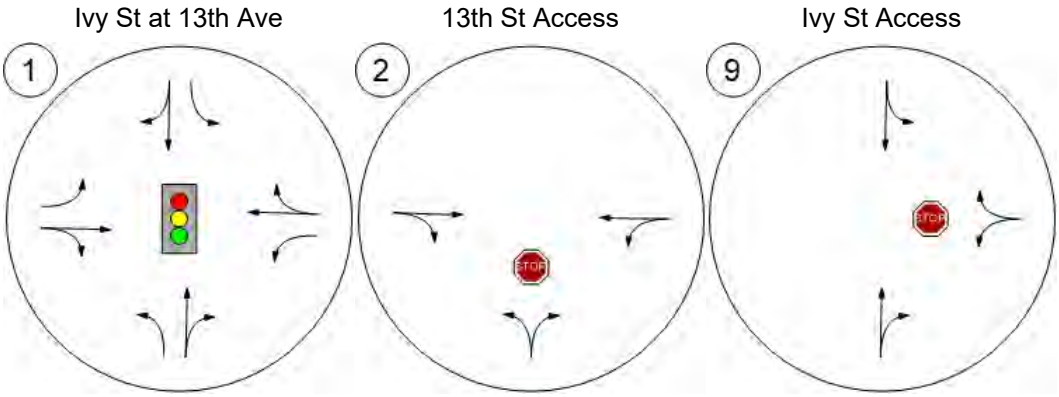
Zone / Gate	Zone 1: Ivy St Townhouses			
	To Ivy St Townhouses:		From Ivy St Townhouses:	
	Share %	Trips	Share %	Trips
7: Mayberry Group	0.00	0	0.00	0
8: Beck Pond	0.00	0	0.00	0
2: Gate	35.00	4	35.00	2
3: Gate	30.00	3	30.00	2
4: Gate	20.00	2	20.00	1
5: Gate	15.00	2	15.00	1
6: Gate	0.00	0	0.00	0
Total	**100.00**	**11**	**100.00**	**6**

Zone / Gate	Zone 7: Mayberry Group			
	To Mayberry Group:		From Mayberry Group:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
8: Beck Pond	0.00	0	0.00	0
2: Gate	35.00	19	35.00	11
3: Gate	30.00	17	30.00	10
4: Gate	20.00	11	20.00	7
5: Gate	15.00	8	15.00	5
6: Gate	0.00	0	0.00	0
Total	**100.00**	**55**	**100.00**	**33**

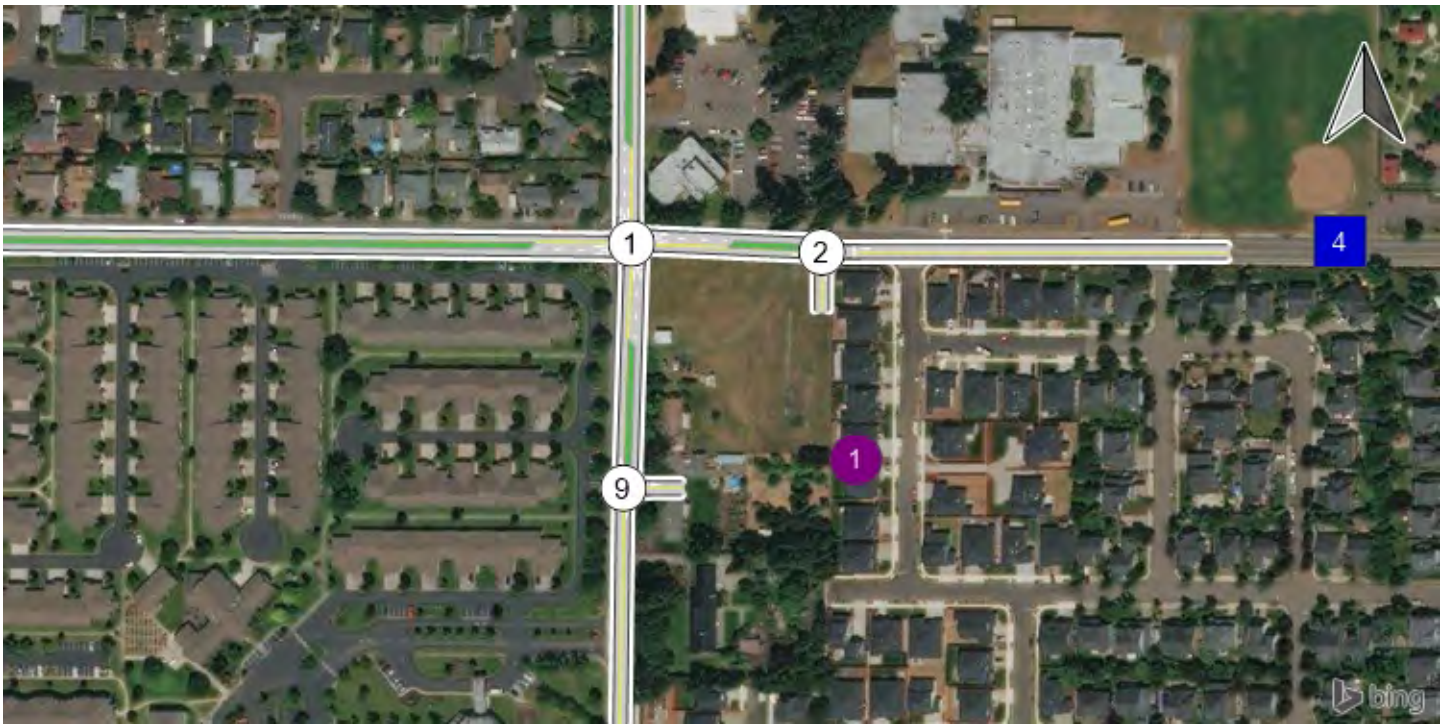
Zone / Gate	Zone 8: Beck Pond			
	To Beck Pond:		From Beck Pond:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
7: Mayberry Group	0.00	0	0.00	0
2: Gate	35.00	15	35.00	8
3: Gate	30.00	13	30.00	8
4: Gate	20.00	9	20.00	5
5: Gate	15.00	6	15.00	4
6: Gate	0.00	0	0.00	0
Total	**100.00**	**43**	**100.00**	**25**

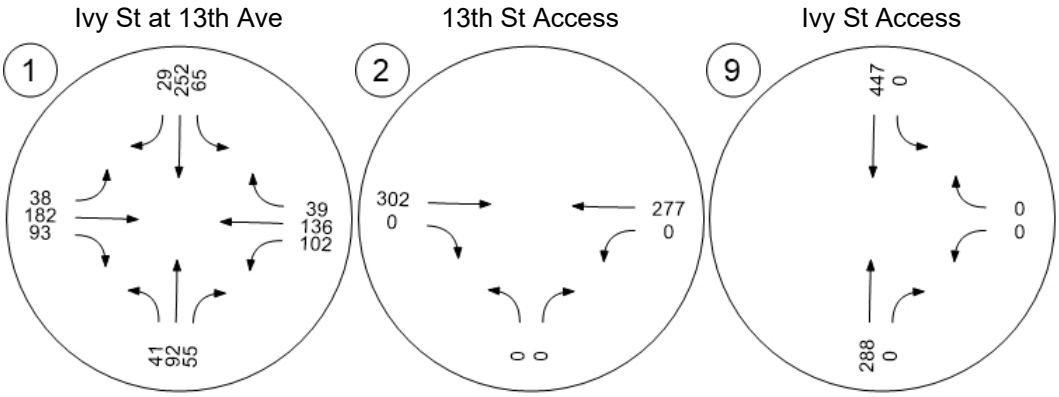
Report Figure 1: Lane Configuration and Traffic Control



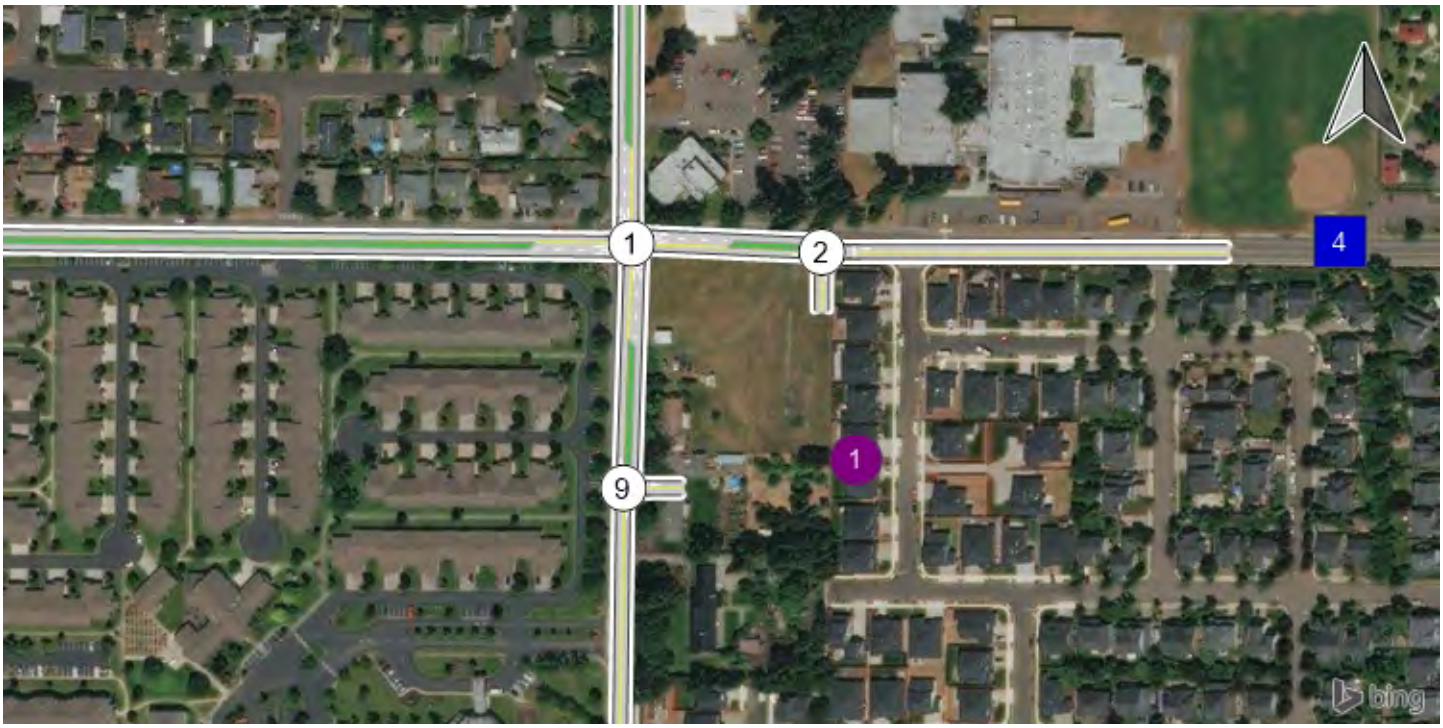


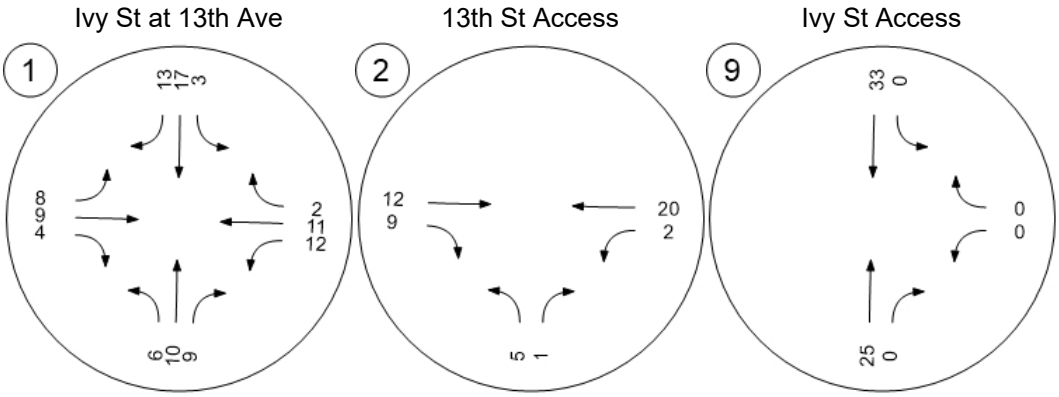
Report Figure 2a: Traffic Volume - Base Volume



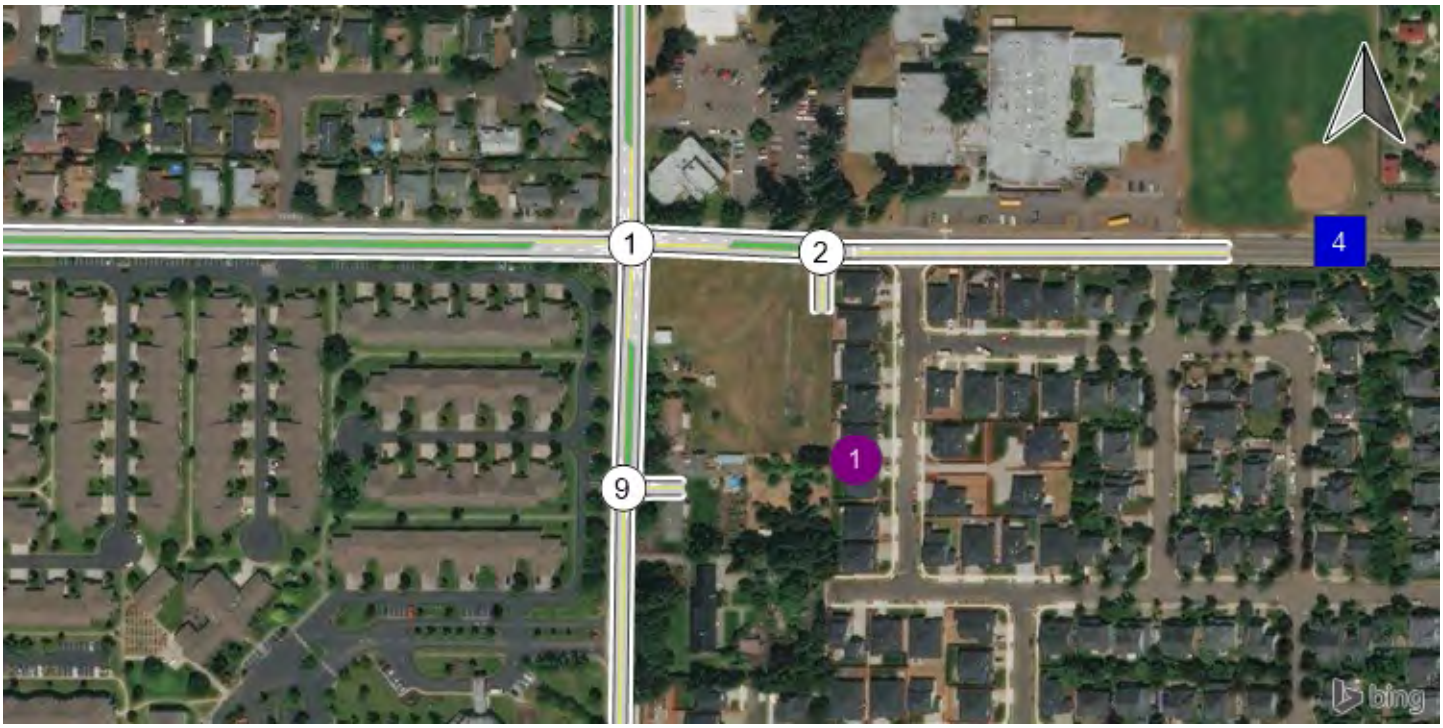


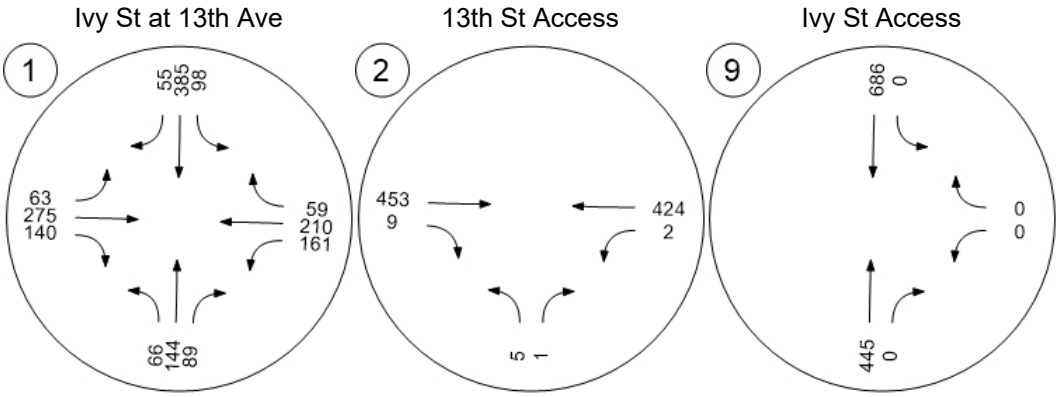
Report Figure 2d: Traffic Volume - Net New Site Trips



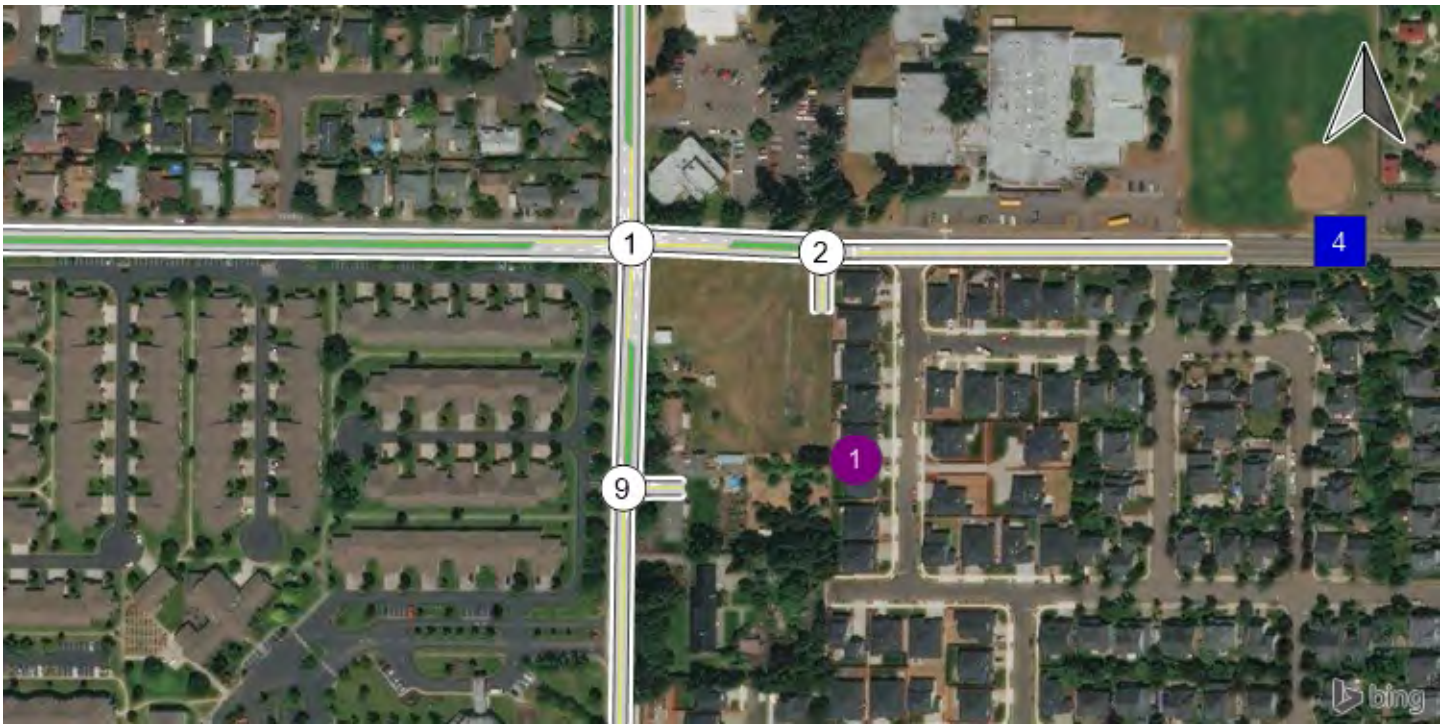


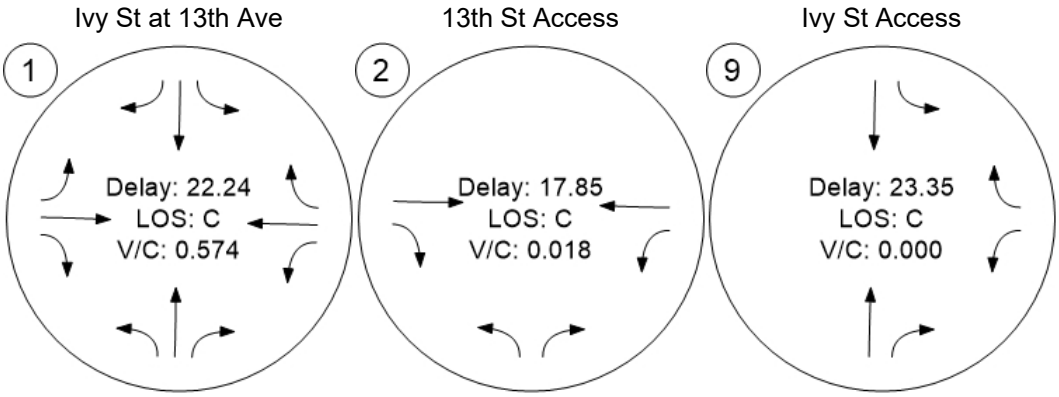
Report Figure 2f: Traffic Volume - Future Total Volume





Report Figure 3: Traffic Conditions





Ivy St Townhomes TIA - 18-387

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Scenario 11 AM Future w 1 Access (38)
7/6/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ivy St at 13th Ave	Signalized	HCM 6th Edition	EB Left	0.605	16.4	B
2	13th St Access	Two-way stop	HCM 6th Edition	NB Left	0.041	17.7	C
9	Ivy St Access	Two-way stop	HCM 6th Edition	WB Left	0.000	16.9	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Ivy St at 13th Ave

Control Type:	Signalized	Delay (sec / veh):	16.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.605

Intersection Setup

Name				Ivy St			13th Ave			13th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name				Ivy St			13th Ave			13th Ave		
Base Volume Input [veh/h]	93	196	49	25	77	8	21	116	26	50	222	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	8.30	8.30	8.30	9.10	9.10	9.10	5.50	5.50	5.50	8.00	8.00	8.00
Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	15	11	1	5	4	11	9	6	5	7	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	138	301	83	38	117	16	42	178	44	78	331	62
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	91	25	11	35	5	13	54	13	23	100	19
Total Analysis Volume [veh/h]	166	363	100	46	141	19	51	214	53	94	399	75
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	25	0	0	25	0	0	35	0	0	35	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	27	27	27	27	25	25	25	25
g / C, Green / Cycle	0.46	0.46	0.46	0.46	0.41	0.41	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.16	0.30	0.06	0.10	0.06	0.17	0.10	0.30
s, saturation flow rate [veh/h]	1048	1539	789	1554	804	1580	953	1558
c, Capacity [veh/h]	513	703	286	710	200	648	351	639
d1, Uniform Delay [s]	13.93	12.68	19.89	9.89	26.02	12.57	19.11	15.01
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.15
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.67	4.80	1.21	0.74	0.67	0.42	0.40	2.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.32	0.66	0.16	0.23	0.26	0.41	0.27	0.74
d, Delay for Lane Group [s/veh]	15.60	17.48	21.10	10.62	26.68	12.99	19.52	17.39
Lane Group LOS	B	B	C	B	C	B	B	B
Critical Lane Group	No	Yes	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.73	5.04	0.60	1.25	0.71	2.38	1.08	5.30
50th-Percentile Queue Length [ft]	43.19	125.98	14.98	31.26	17.73	59.39	26.94	132.45
95th-Percentile Queue Length [veh]	3.11	8.72	1.08	2.25	1.28	4.28	1.94	9.07
95th-Percentile Queue Length [ft]	77.74	218.02	26.96	56.27	31.92	106.90	48.50	226.83

Movement, Approach, & Intersection Results

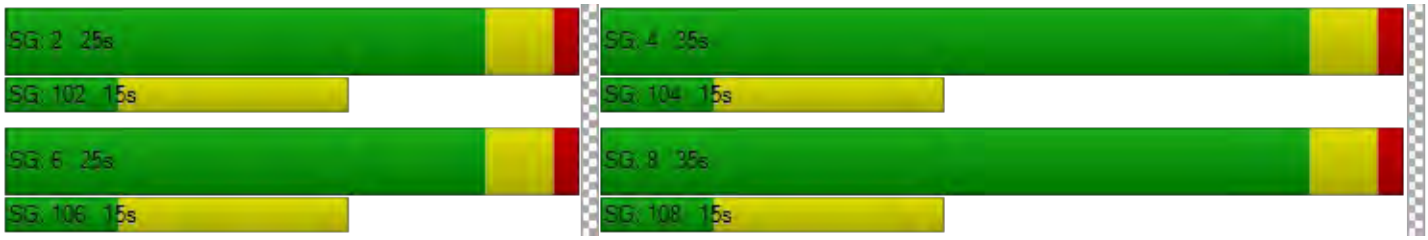
d_M, Delay for Movement [s/veh]	15.60	17.48	17.48	21.10	10.62	10.62	26.68	12.99	12.99	19.52	17.39	17.39
Movement LOS	B	B	B	C	B	B	C	B	B	B	B	B
d_A, Approach Delay [s/veh]	16.98			12.96			15.19			17.74		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	16.42											
Intersection LOS	B											
Intersection V/C	0.605											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.353	2.219	2.401	2.238
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	700	700	1033	1033
d_b, Bicycle Delay [s]	12.68	12.68	7.01	7.01
l_b,int, Bicycle LOS Score for Intersection	3.148	2.450	2.819	3.231
Bicycle LOS	C	B	C	C

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: 13th St Access

Control Type:	Two-way stop	Delay (sec / veh):	17.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.041

Intersection Setup

Name			13th Ave			
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			13th Ave			
Base Volume Input [veh/h]	0	0	190	0	0	312
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	8.00	8.00	8.00	8.00	8.00	8.00
Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	10	3	18	3	1	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	3	295	3	1	462
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	1	89	1	0	139
Total Analysis Volume [veh/h]	12	4	355	4	1	557
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.01	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	17.73	10.86	0.00	0.00	8.09	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.15	0.15	0.00	0.00	2.66	2.66
95th-Percentile Queue Length [ft]	3.66	3.66	0.00	0.00	66.39	66.39
d_A, Approach Delay [s/veh]	16.01		0.00		0.01	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.28					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 9: Ivy St Access

Control Type:	Two-way stop	Delay (sec / veh):	16.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	153	0	0	338	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.38	0.38	0.38	0.38	2.00	2.00
Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	28	0	0	16	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	251	0	0	509	0	0
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	76	0	0	153	0	0
Total Analysis Volume [veh/h]	302	0	0	613	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.84	0.00	16.89	9.88
Movement LOS	A	A	A	A	C	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		13.38	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	C					

Ivy St Townhomes TIA - 18-387

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Scenario 11 AM Future w 1 Access (38)
7/6/2018

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	138	301	83	38	117	16	42	178	44	78	331	62	1428

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
2	13th St Access	10	3	295	3	1	462	774

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
9	Ivy St Access	251	0	0	509	0	0	760

Ivy St Townhomes TIA - 18-387

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Scenario 11 AM Future w 1 Access (38)
7/6/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	Final Base	93	196	49	25	77	8	21	116	26	50	222	40	923
		Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	2	15	11	1	5	4	11	9	6	5	7	4	80
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**138**	**301**	**83**	**38**	**117**	**16**	**42**	**178**	**44**	**78**	**331**	**62**	**1428**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
2	13th St Access	Final Base	0	0	190	0	0	312	502
		Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	10	3	18	3	1	6	41
		Other	0	0	0	0	0	0	0
		Future Total	**10**	**3**	**295**	**3**	**1**	**462**	**774**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
9	Ivy St Access	Final Base	153	0	0	338	0	0	491
		Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	28	0	0	16	0	0	44
		Other	0	0	0	0	0	0	0
		Future Total	**251**	**0**	**0**	**509**	**0**	**0**	**760**

Ivy St Townhomes TIA - 18-387

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Scenario 11 AM Future w 1 Access (38)
7/6/2018

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: Ivy St Townhouses	Apts	ITE 220	Units	0.460	38.000	23.00	77.00	4	13	17	12.69
7: Mayberry Group	Homes	ITE 210	Homes	0.740	89.000	25.00	75.00	16	50	66	49.25
8: Beck Pond	Homes	ite 210	Homes	0.740	69.000	25.00	75.00	13	38	51	38.06
					Added Trips Total			**33**	**101**	**134**	**100.00**

Ivy St Townhomes TIA - 18-387

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Report File: J:\...\AM Future w 1 Access (38).pdf

Scenario 11 AM Future w 1 Access (38)
7/6/2018

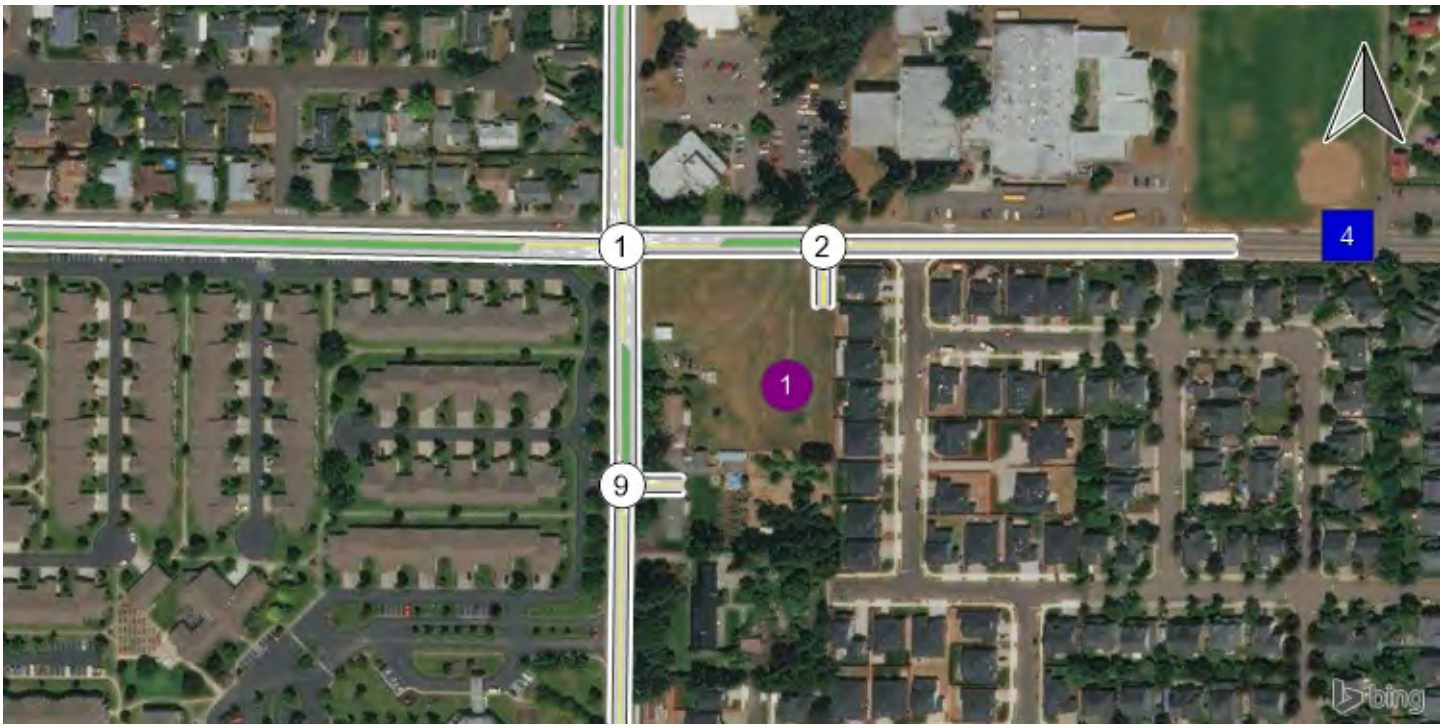
Trip Distribution summary

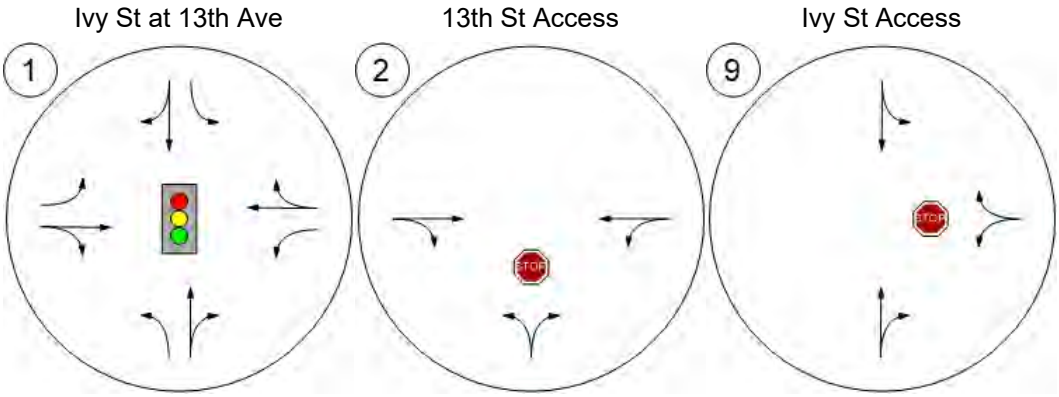
Zone / Gate	Zone 1: Ivy St Townhouses			
	To Ivy St Townhouses:		From Ivy St Townhouses:	
	Share %	Trips	Share %	Trips
7: Mayberry Group	0.00	0	0.00	0
8: Beck Pond	0.00	0	0.00	0
2: Gate	35.00	1	35.00	4
3: Gate	30.00	1	30.00	4
4: Gate	20.00	1	20.00	3
5: Gate	15.00	1	15.00	2
6: Gate	0.00	0	0.00	0
Total	**100.00**	**4**	**100.00**	**13**

Zone / Gate	Zone 7: Mayberry Group			
	To Mayberry Group:		From Mayberry Group:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
8: Beck Pond	0.00	0	0.00	0
2: Gate	35.00	6	35.00	17
3: Gate	30.00	5	30.00	15
4: Gate	20.00	3	20.00	10
5: Gate	15.00	2	15.00	8
6: Gate	0.00	0	0.00	0
Total	**100.00**	**16**	**100.00**	**50**

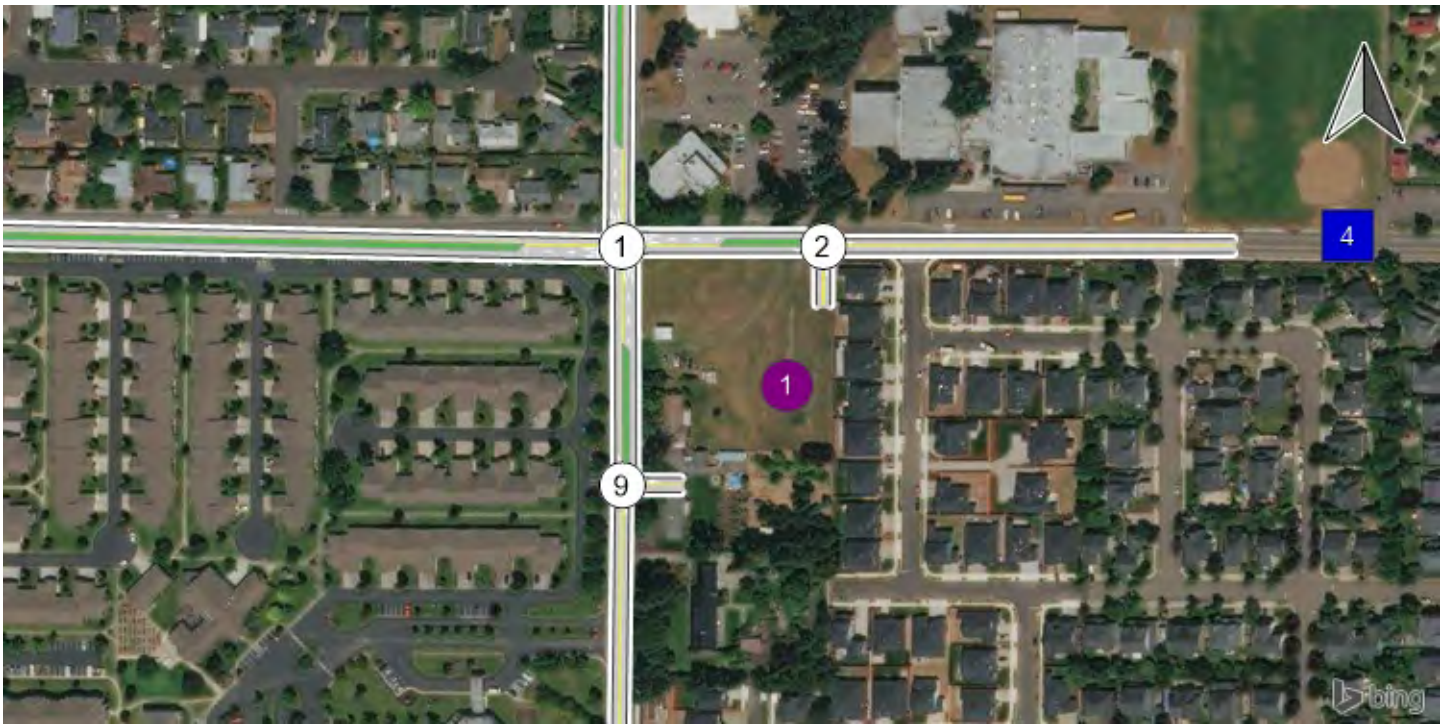
Zone / Gate	Zone 8: Beck Pond			
	To Beck Pond:		From Beck Pond:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
7: Mayberry Group	0.00	0	0.00	0
2: Gate	35.00	5	35.00	13
3: Gate	30.00	4	30.00	11
4: Gate	20.00	3	20.00	8
5: Gate	15.00	2	15.00	6
6: Gate	0.00	0	0.00	0
Total	**100.00**	**14**	**100.00**	**38**

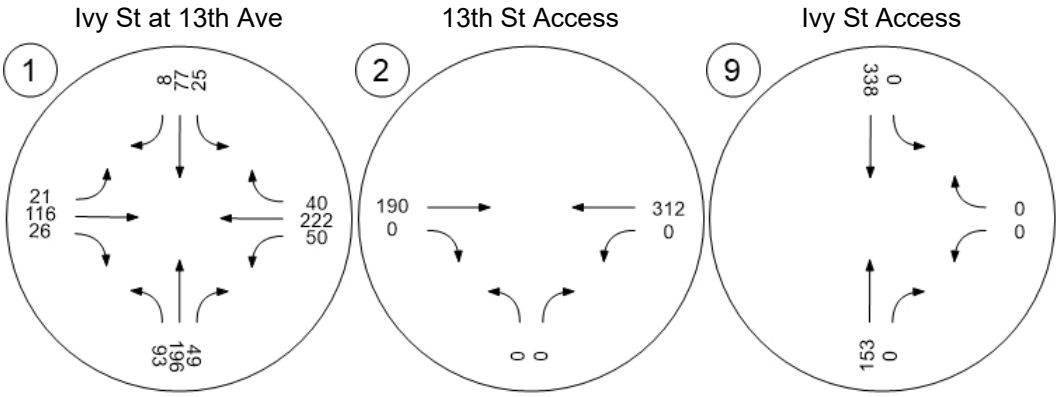
Report Figure 1: Lane Configuration and Traffic Control



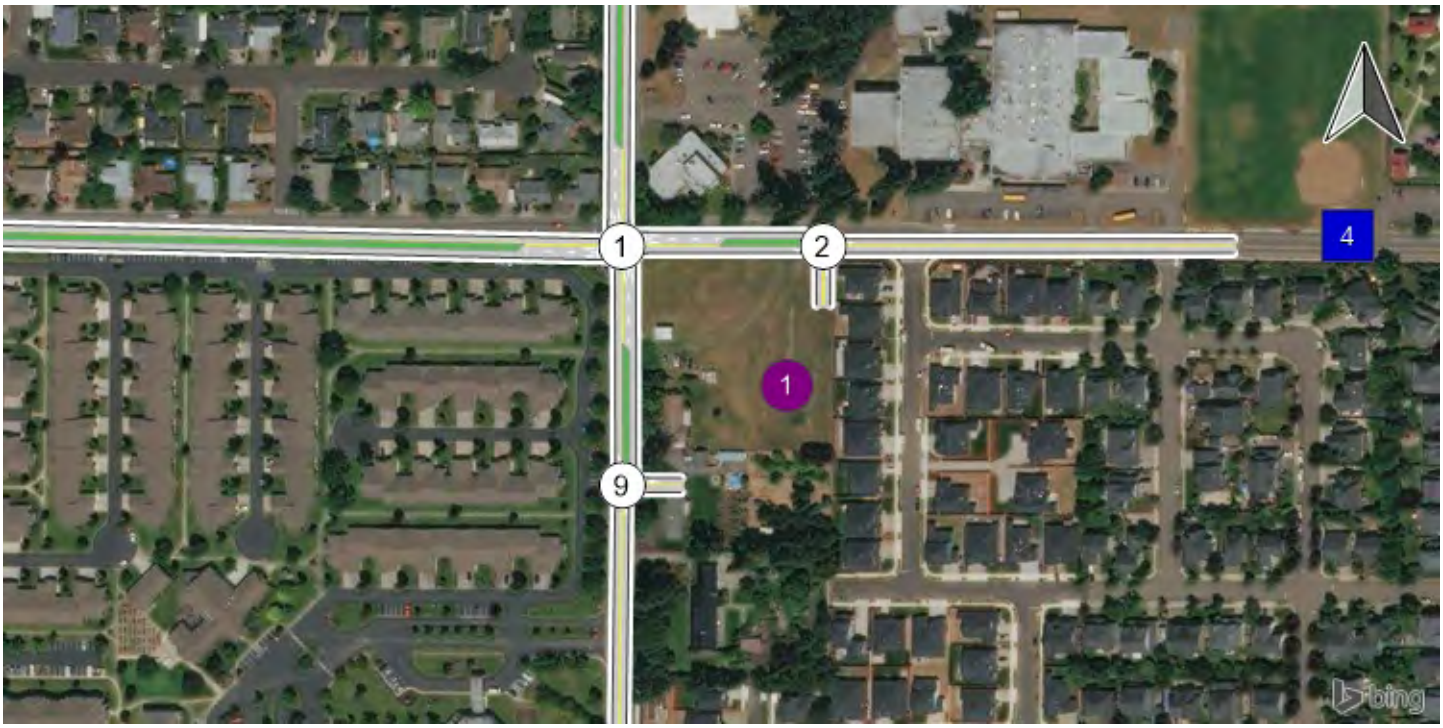


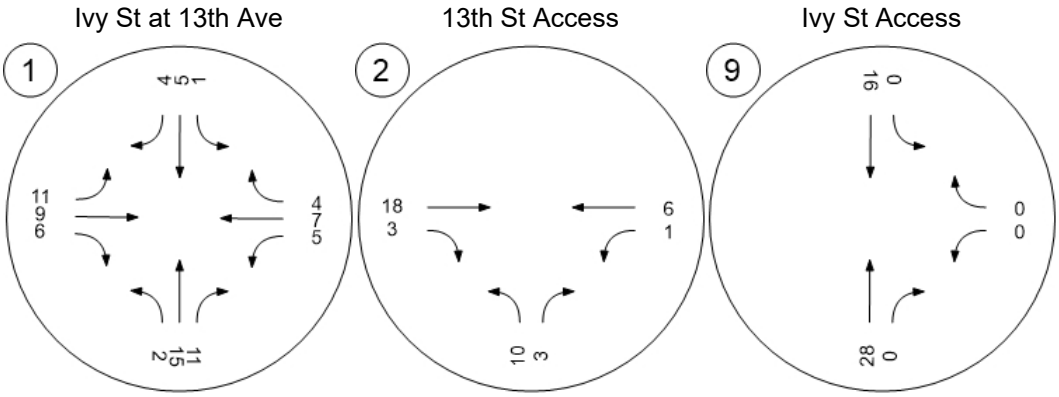
Report Figure 2a: Traffic Volume - Base Volume



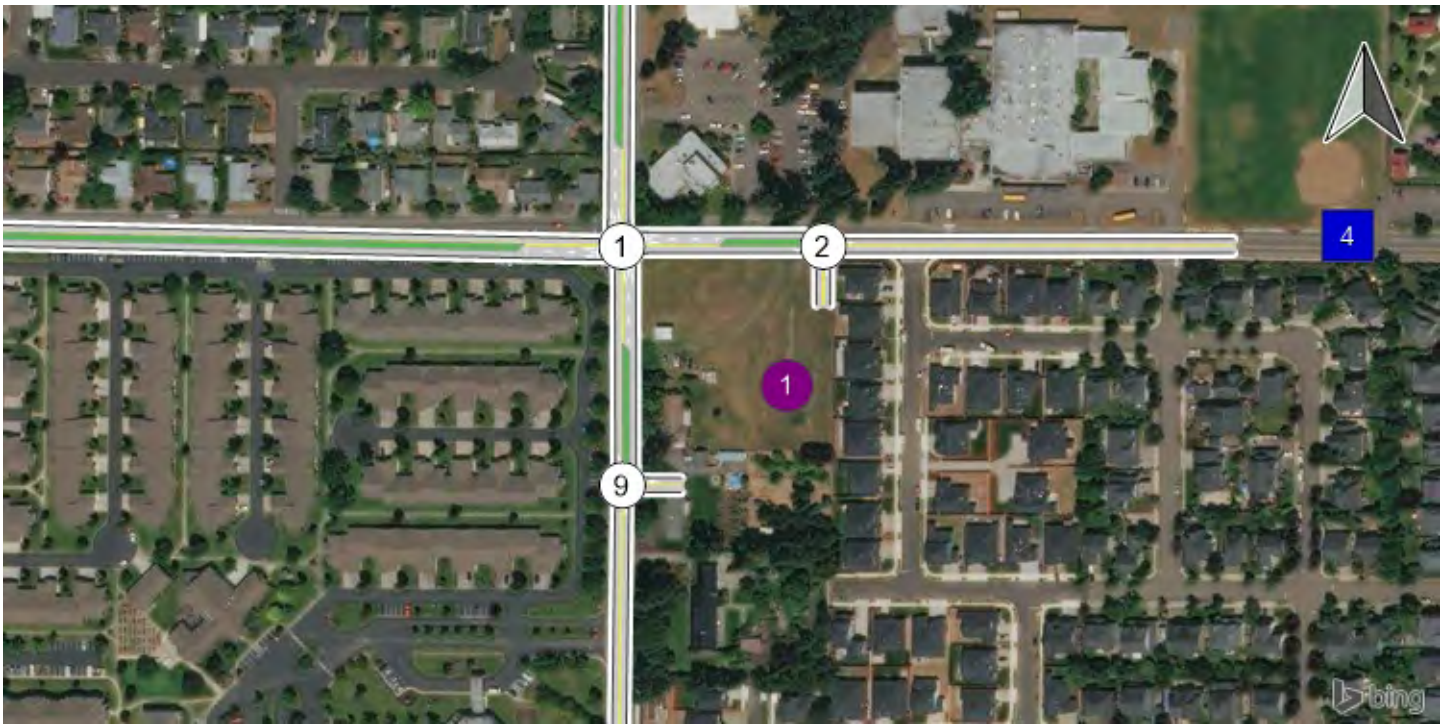


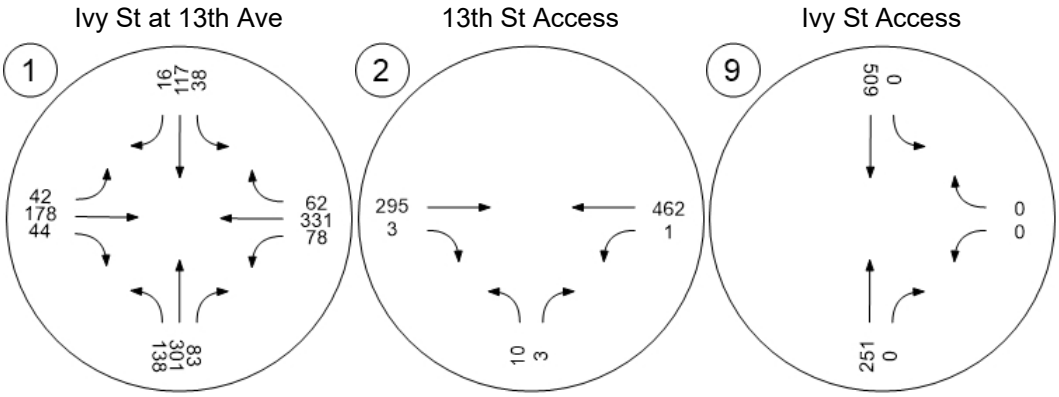
Report Figure 2d: Traffic Volume - Net New Site Trips



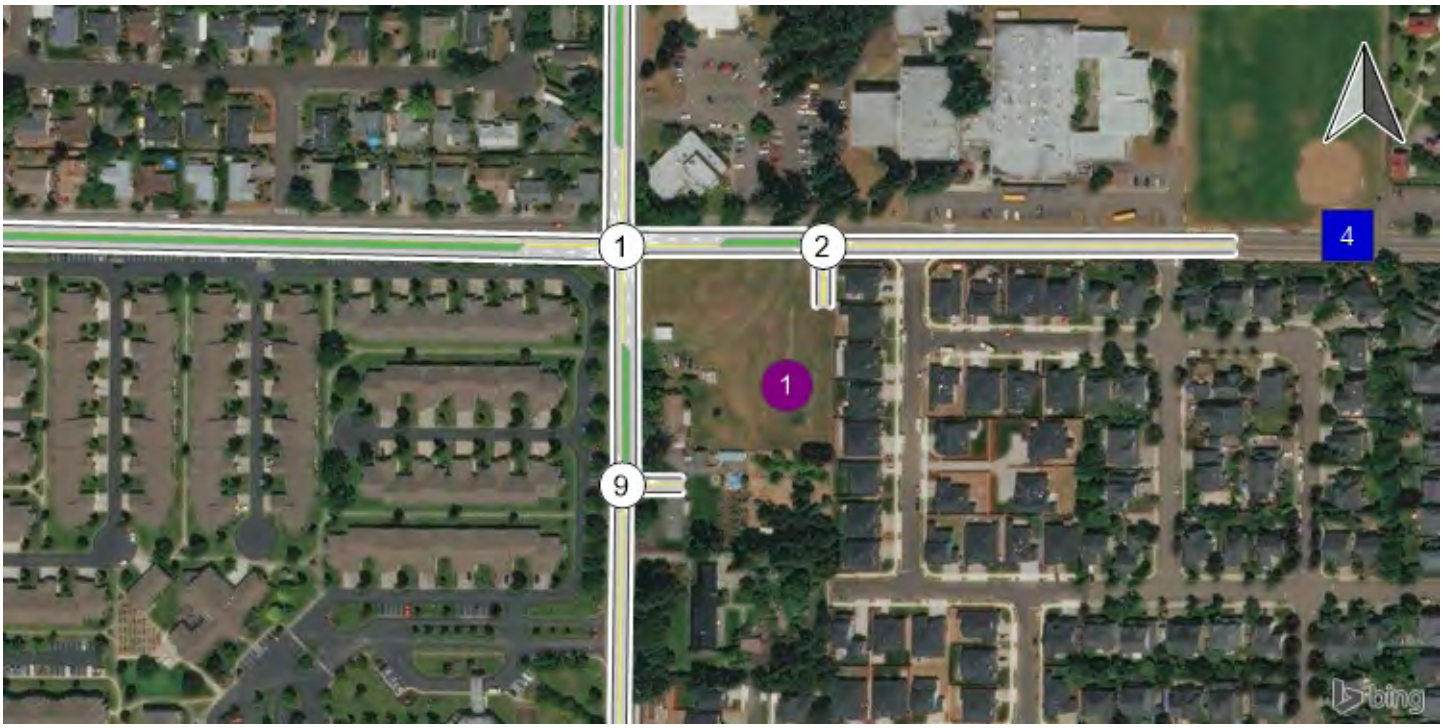


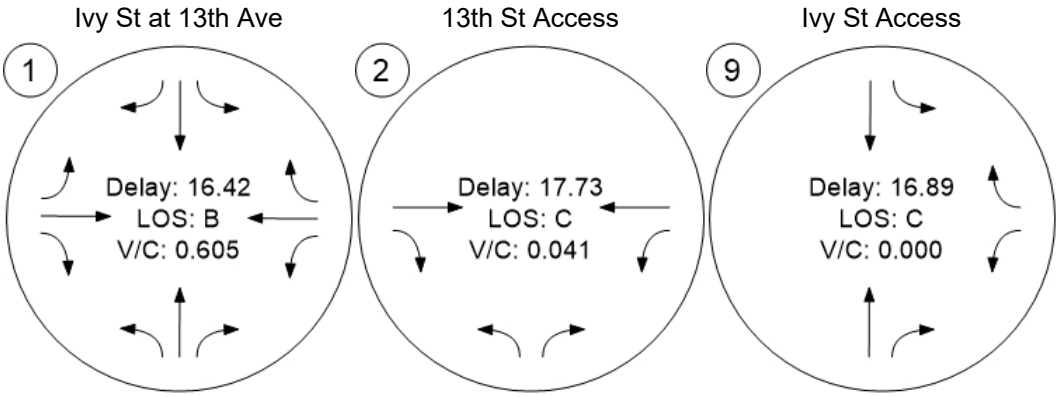
Report Figure 2f: Traffic Volume - Future Total Volume





Report Figure 3: Traffic Conditions





Ivy St Townhomes TIA - 18-387

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Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ivy St at 13th Ave	Signalized	HCM 6th Edition	WB Left	0.575	22.2	C
2	13th St Access	Two-way stop	HCM 6th Edition	NB Left	0.025	18.0	C
9	Ivy St Access	Two-way stop	HCM 6th Edition	WB Left	0.000	23.3	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Ivy St at 13th Ave

Control Type:	Signalized	Delay (sec / veh):	22.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.575

Intersection Setup

Name				Ivy St			13th Ave			13th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name				Ivy St			13th Ave			13th Ave		
Base Volume Input [veh/h]	41	92	55	65	252	29	38	182	93	102	136	39
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	0.90	0.90	0.90	3.20	3.20	3.20	0.40	0.40	0.40
Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	10	7	4	17	13	8	10	4	12	12	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	66	144	87	99	385	55	63	276	140	161	211	59
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	39	24	27	105	15	17	75	38	44	57	16
Total Analysis Volume [veh/h]	72	157	95	108	418	60	68	300	152	175	229	64
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	42	0	0	42	0	0	48	0	0	48	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	40	40	40	40	42	42	42	42
g / C, Green / Cycle	0.45	0.45	0.45	0.45	0.46	0.46	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.09	0.16	0.11	0.29	0.07	0.29	0.20	0.18
s, saturation flow rate [veh/h]	822	1573	1024	1661	968	1573	856	1641
c, Capacity [veh/h]	245	708	407	748	395	725	274	756
d1, Uniform Delay [s]	31.49	16.20	23.31	19.10	22.02	18.35	33.86	15.92
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.16	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.02	1.40	1.59	4.16	0.20	1.28	2.48	0.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.29	0.36	0.27	0.64	0.17	0.62	0.64	0.39
d, Delay for Lane Group [s/veh]	34.52	17.59	24.90	23.25	22.23	19.63	36.34	16.25
Lane Group LOS	C	B	C	C	C	B	D	B
Critical Lane Group	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	1.56	3.54	1.89	8.16	1.06	7.11	3.86	3.92
50th-Percentile Queue Length [ft]	38.89	88.42	47.18	203.97	26.52	177.82	96.43	98.10
95th-Percentile Queue Length [veh]	2.80	6.37	3.40	12.84	1.91	11.49	6.94	7.06
95th-Percentile Queue Length [ft]	70.00	159.15	84.93	321.08	47.73	287.17	173.57	176.57

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.52	17.59	17.59	24.90	23.25	23.25	22.23	19.63	19.63	36.34	16.25	16.25
Movement LOS	C	B	B	C	C	C	C	B	B	D	B	B
d_A, Approach Delay [s/veh]	21.36			23.56			19.97			23.76		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	22.25											
Intersection LOS	C											
Intersection V/C	0.575											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	2.538	2.323	2.283	2.358
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	844	844	978	978
d_b, Bicycle Delay [s]	15.02	15.02	11.76	11.76
l_b,int, Bicycle LOS Score for Intersection	2.645	3.077	3.152	3.066
Bicycle LOS	B	C	C	C

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: 13th St Access

Control Type:	Two-way stop	Delay (sec / veh):	18.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.025

Intersection Setup

Name			13th Ave			
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			13th Ave			
Base Volume Input [veh/h]	0	0	302	0	0	277
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.40	0.40	0.40	0.40	0.40	0.40
Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	2	12	9	3	20
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	2	453	9	3	424
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	1	123	2	1	115
Total Analysis Volume [veh/h]	7	2	492	10	3	461
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	18.00	11.57	0.00	0.00	8.37	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.09	0.09	0.00	0.00	2.23	2.23
95th-Percentile Queue Length [ft]	2.17	2.17	0.00	0.00	55.73	55.73
d_A, Approach Delay [s/veh]	16.57		0.00		0.05	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.18					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 9: Ivy St Access

Control Type:	Two-way stop	Delay (sec / veh):	23.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	288	0	0	447	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	2.40	2.00	2.00
Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	23	2	0	33	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	443	2	0	686	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	120	1	0	186	0	0
Total Analysis Volume [veh/h]	482	2	0	746	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.34	0.00	23.33	11.17
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		17.25	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	C					

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Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	66	144	87	99	385	55	63	276	140	161	211	59	1746

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
2	13th St Access	6	2	453	9	3	424	897

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
9	Ivy St Access	443	2	0	686	0	0	1131

Ivy St Townhomes TIA - 18-387

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Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	Final Base	41	92	55	65	252	29	38	182	93	102	136	39	1124
		Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	6	10	7	4	17	13	8	10	4	12	12	2	105
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**66**	**144**	**87**	**99**	**385**	**55**	**63**	**276**	**140**	**161**	**211**	**59**	**1746**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
2	13th St Access	Final Base	0	0	302	0	0	277	579
		Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	6	2	12	9	3	20	52
		Other	0	0	0	0	0	0	0
		Future Total	**6**	**2**	**453**	**9**	**3**	**424**	**897**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
9	Ivy St Access	Final Base	288	0	0	447	0	0	735
		Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	23	2	0	33	0	0	58
		Other	0	0	0	0	0	0	0
		Future Total	**443**	**2**	**0**	**686**	**0**	**0**	**1131**

Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\PM Future w 1 Access (38).pdf

Scenario 12 PM Future w 1 Access (38)
7/6/2018

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: Ivy St Townhouses	Apts	ITE 220	Units	0.560	38.000	63.00	37.00	13	8	21	11.86
7: Mayberry Group	Homes	ITE 210	Homes	0.990	89.000	63.00	37.00	55	33	88	49.72
8: Beck Pond	Homes	ite 210	Homes	0.990	69.000	63.00	37.00	43	25	68	38.42
					Added Trips Total			**111**	**66**	**177**	**100.00**

Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\PM Future w 1 Access (38).pdf

Scenario 12 PM Future w 1 Access (38)
7/6/2018

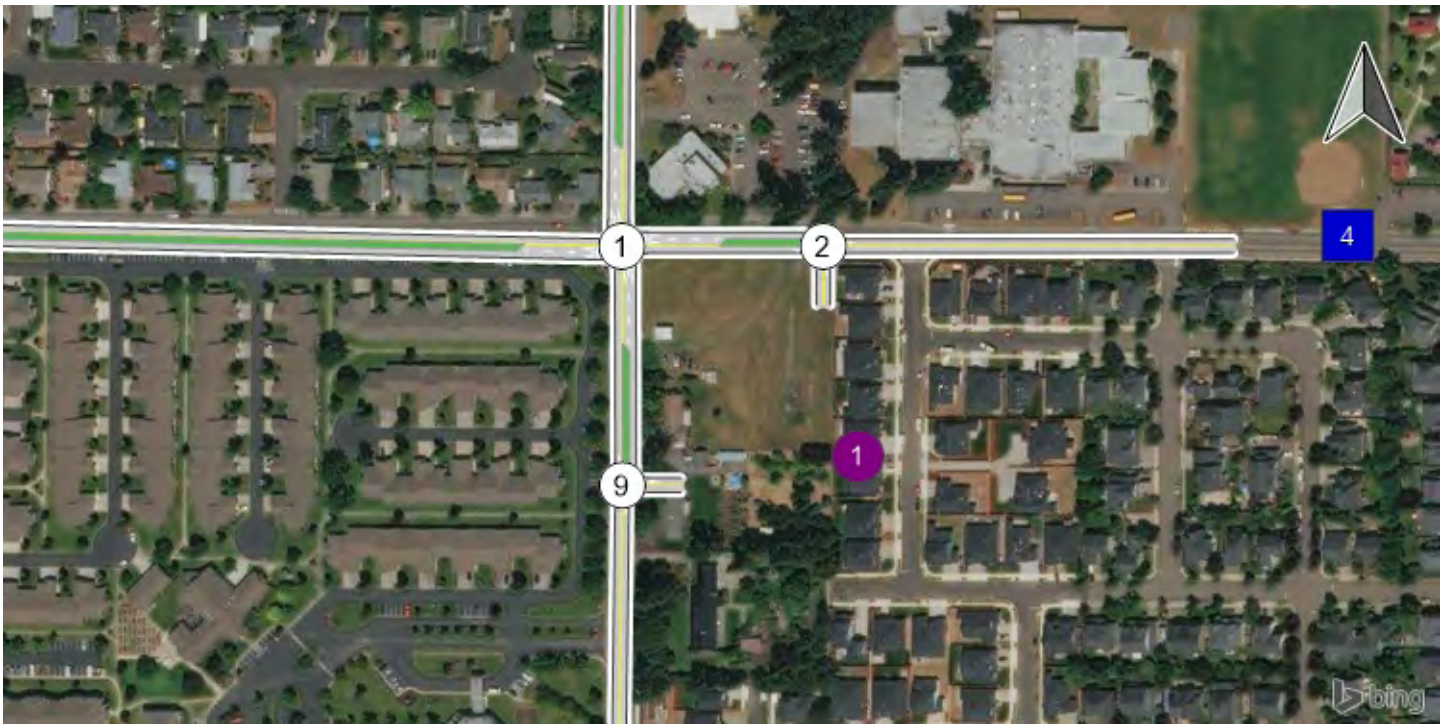
Trip Distribution summary

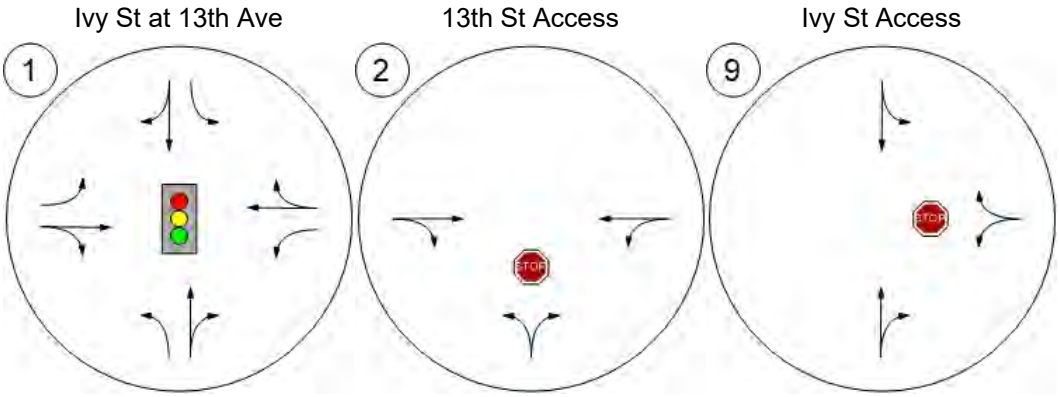
Zone / Gate	Zone 1: Ivy St Townhouses			
	To Ivy St Townhouses:		From Ivy St Townhouses:	
	Share %	Trips	Share %	Trips
7: Mayberry Group	0.00	0	0.00	0
8: Beck Pond	0.00	0	0.00	0
2: Gate	35.00	5	35.00	3
3: Gate	30.00	4	30.00	2
4: Gate	20.00	3	20.00	2
5: Gate	15.00	2	15.00	1
6: Gate	0.00	0	0.00	0
Total	**100.00**	**14**	**100.00**	**8**

Zone / Gate	Zone 7: Mayberry Group			
	To Mayberry Group:		From Mayberry Group:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
8: Beck Pond	0.00	0	0.00	0
2: Gate	35.00	19	35.00	11
3: Gate	30.00	17	30.00	10
4: Gate	20.00	11	20.00	7
5: Gate	15.00	8	15.00	5
6: Gate	0.00	0	0.00	0
Total	**100.00**	**55**	**100.00**	**33**

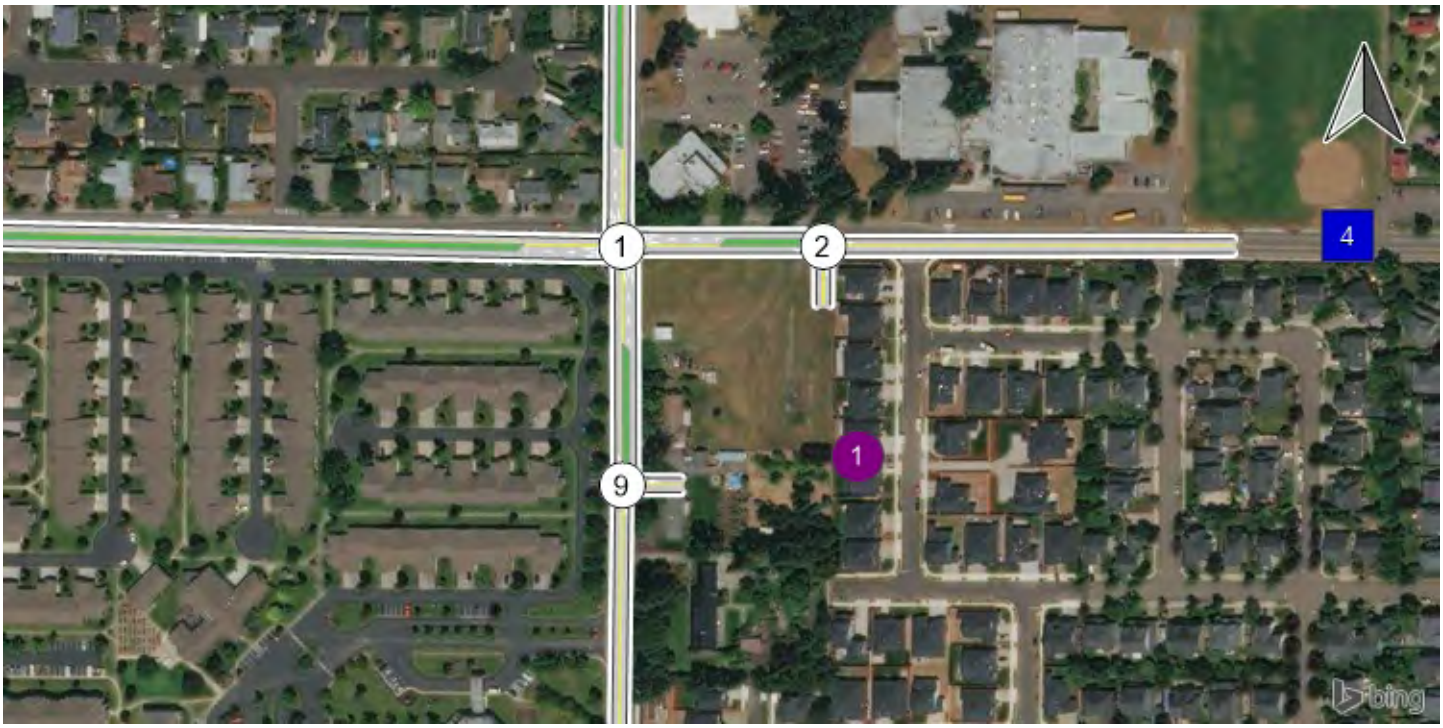
Zone / Gate	Zone 8: Beck Pond			
	To Beck Pond:		From Beck Pond:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
7: Mayberry Group	0.00	0	0.00	0
2: Gate	35.00	15	35.00	8
3: Gate	30.00	13	30.00	8
4: Gate	20.00	9	20.00	5
5: Gate	15.00	6	15.00	4
6: Gate	0.00	0	0.00	0
Total	**100.00**	**43**	**100.00**	**25**

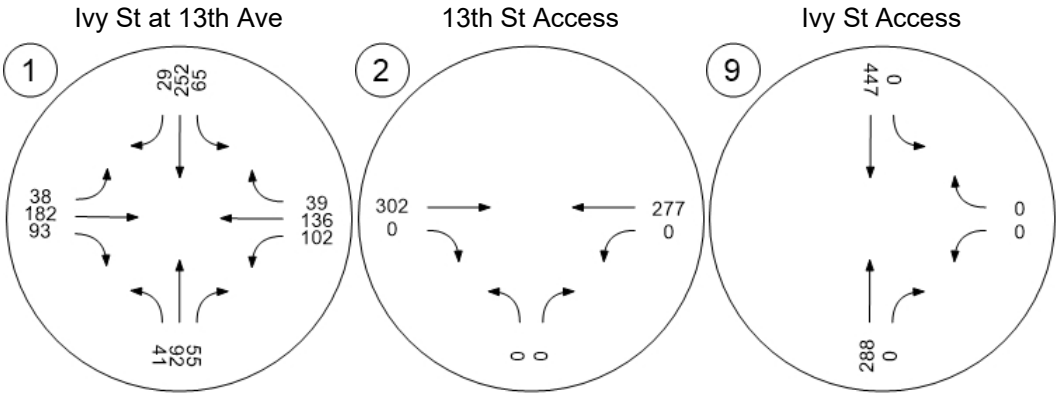
Report Figure 1: Lane Configuration and Traffic Control



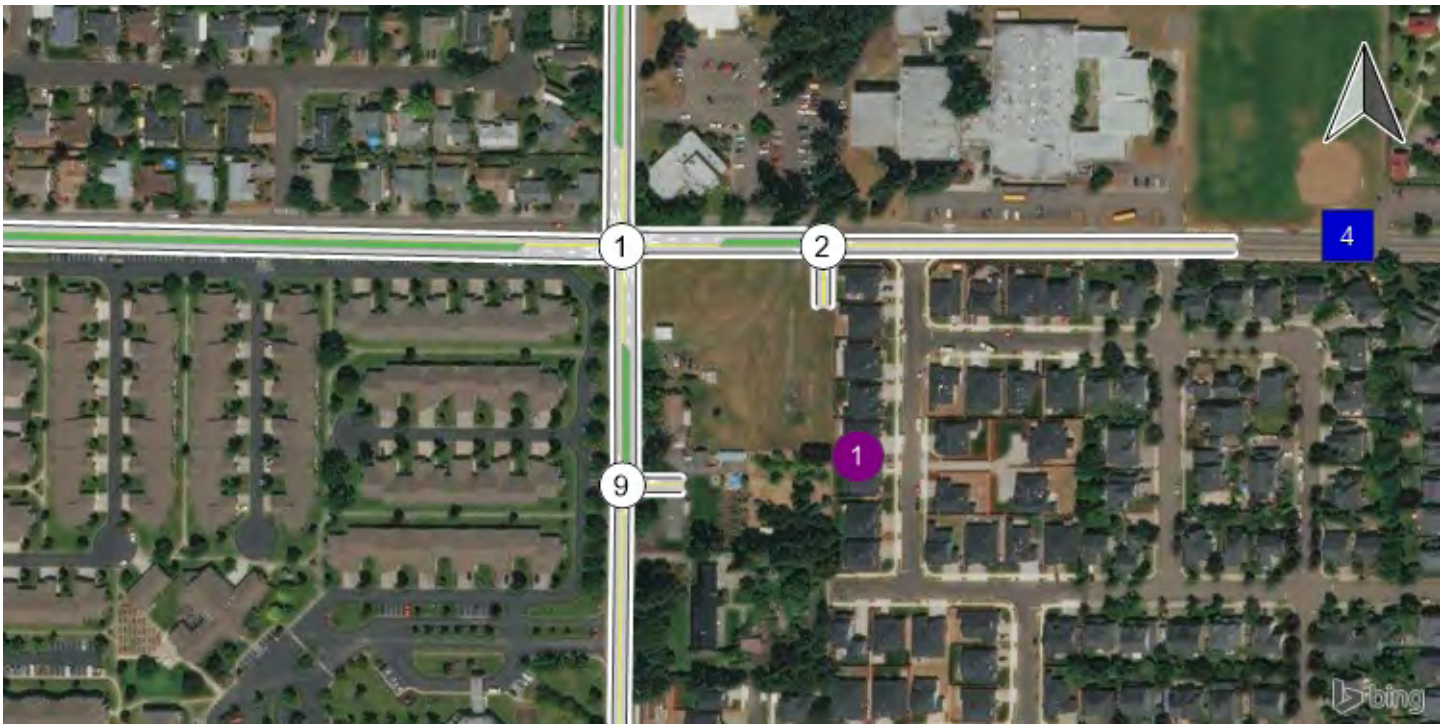


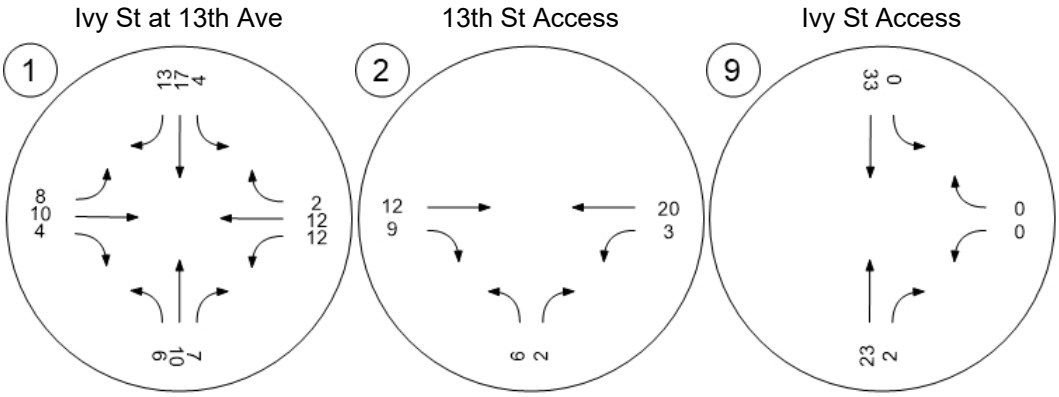
Report Figure 2a: Traffic Volume - Base Volume



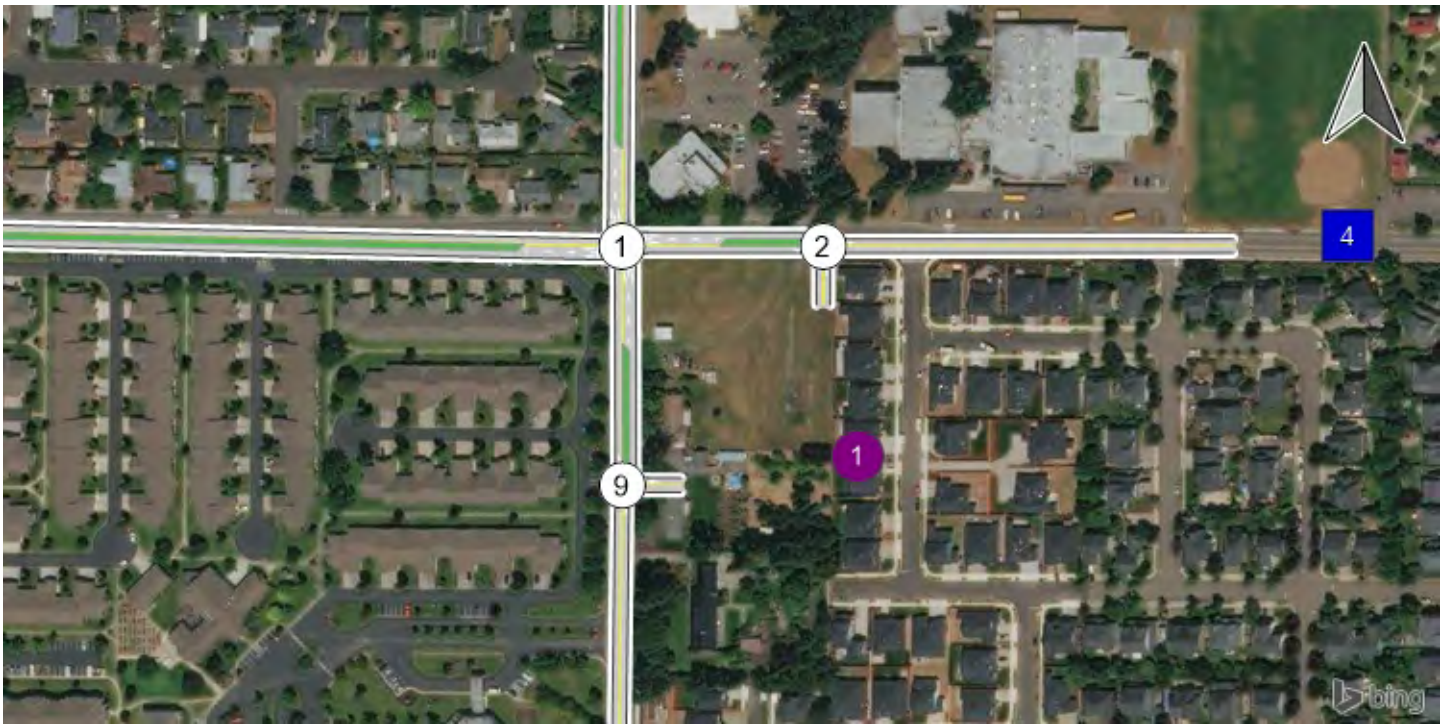


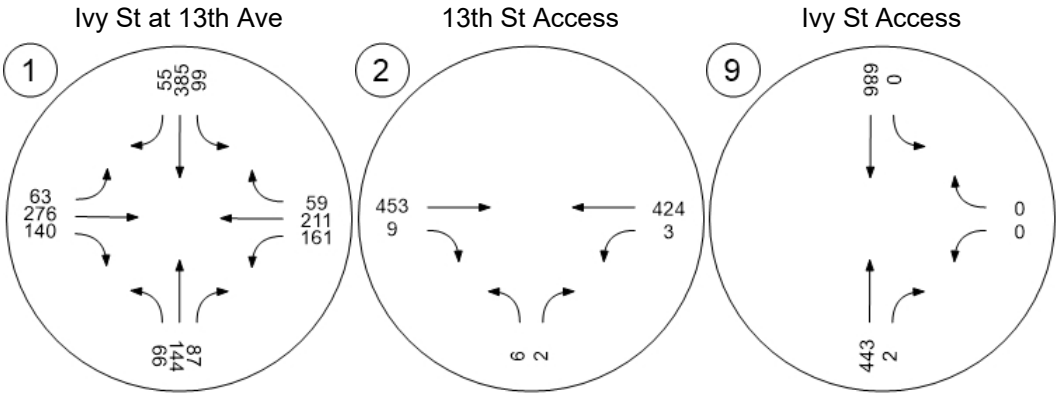
Report Figure 2d: Traffic Volume - Net New Site Trips



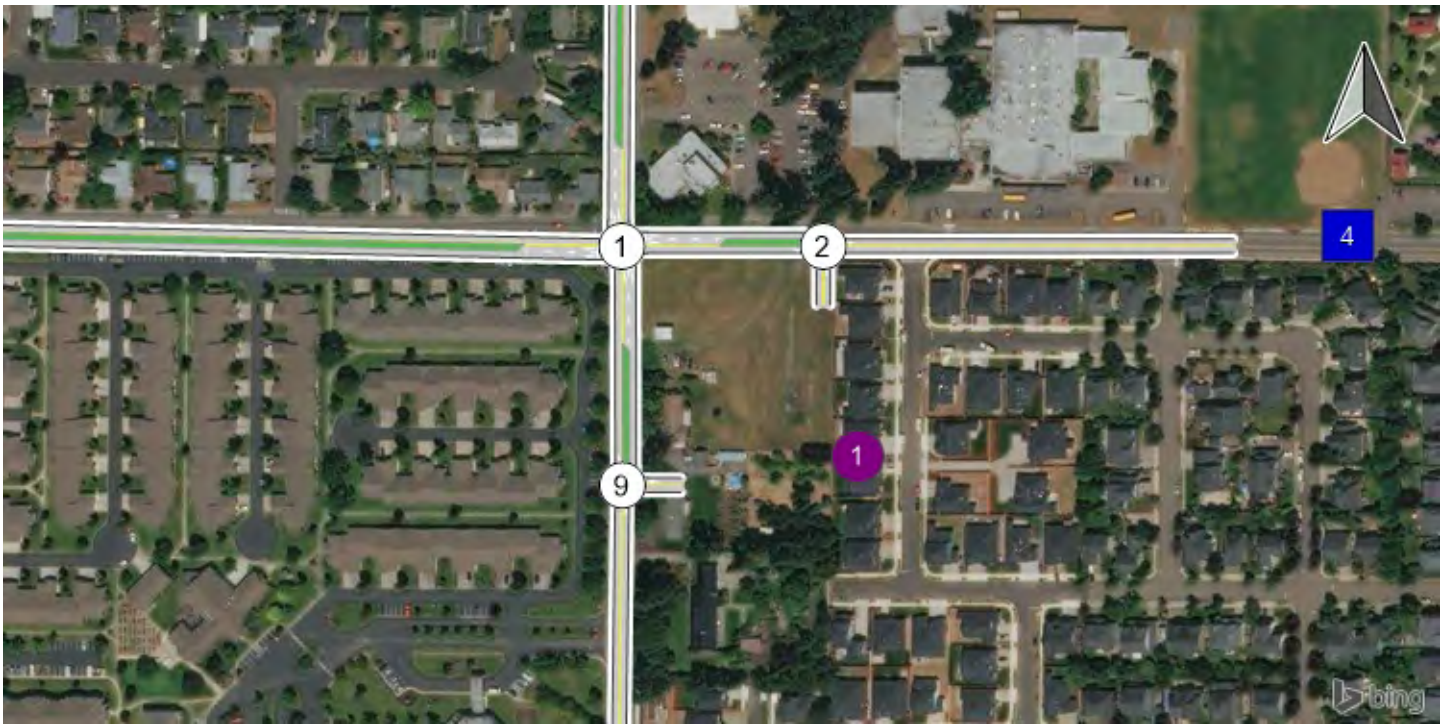


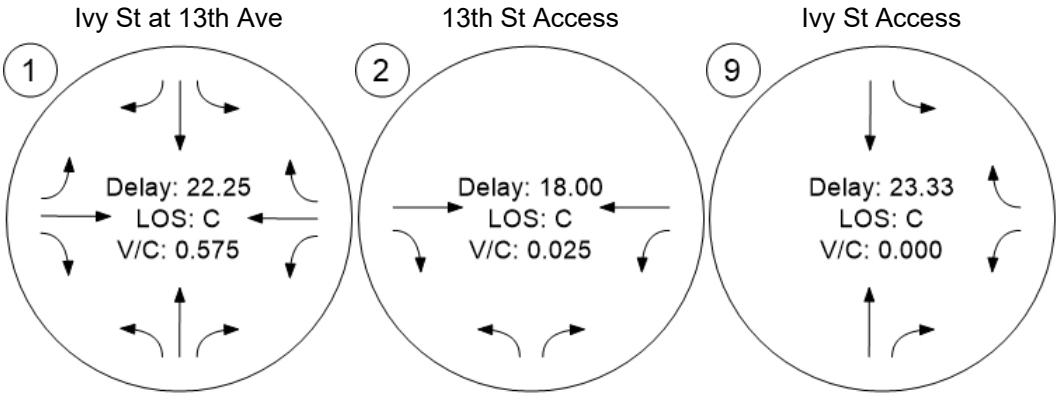
Report Figure 2f: Traffic Volume - Future Total Volume





Report Figure 3: Traffic Conditions





Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\AM Future w 2 Access (30).pdf

Scenario 17 AM Future w 2 Accesses (30)
7/6/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ivy St at 13th Ave	Signalized	HCM 6th Edition	EB Left	0.602	17.8	B
2	13th St Access	Two-way stop	HCM 6th Edition	NB Left	0.020	17.5	C
9	Ivy St Access	Two-way stop	HCM 6th Edition	WB Left	0.003	17.0	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Ivy St at 13th Ave

Control Type:	Signalized	Delay (sec / veh):	17.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.602

Intersection Setup

Name				Ivy St			13th Ave			13th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name				Ivy St			13th Ave			13th Ave		
Base Volume Input [veh/h]	93	196	49	25	77	8	21	116	26	50	222	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	8.30	8.30	8.30	9.10	9.10	9.10	5.50	5.50	5.50	8.00	8.00	8.00
Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	17	11	1	6	4	11	9	7	5	5	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	140	303	83	38	118	16	42	178	45	78	329	60
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	91	25	11	36	5	13	54	14	23	99	18
Total Analysis Volume [veh/h]	169	365	100	46	142	19	51	214	54	94	396	72
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	22	0	0	22	0	0	48	0	0	48	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	34	34	34	34	28	28	28	28
g / C, Green / Cycle	0.48	0.48	0.48	0.48	0.41	0.41	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.16	0.30	0.06	0.10	0.06	0.17	0.10	0.30
s, saturation flow rate [veh/h]	1047	1539	787	1555	809	1580	952	1560
c, Capacity [veh/h]	528	739	299	746	184	641	330	633
d1, Uniform Delay [s]	14.72	13.57	20.93	10.56	30.26	14.88	22.53	17.65
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.60	4.04	1.09	0.66	0.81	0.43	0.47	1.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.32	0.63	0.15	0.22	0.28	0.42	0.29	0.74
d, Delay for Lane Group [s/veh]	16.32	17.61	22.02	11.23	31.07	15.31	23.00	19.36
Lane Group LOS	B	B	C	B	C	B	C	B
Critical Lane Group	No	Yes	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.98	5.65	0.66	1.44	0.85	2.95	1.31	6.25
50th-Percentile Queue Length [ft]	49.50	141.14	16.56	35.89	21.23	73.71	32.77	156.23
95th-Percentile Queue Length [veh]	3.56	9.54	1.19	2.58	1.53	5.31	2.36	10.35
95th-Percentile Queue Length [ft]	89.10	238.56	29.81	64.60	38.22	132.68	58.98	258.73

Movement, Approach, & Intersection Results

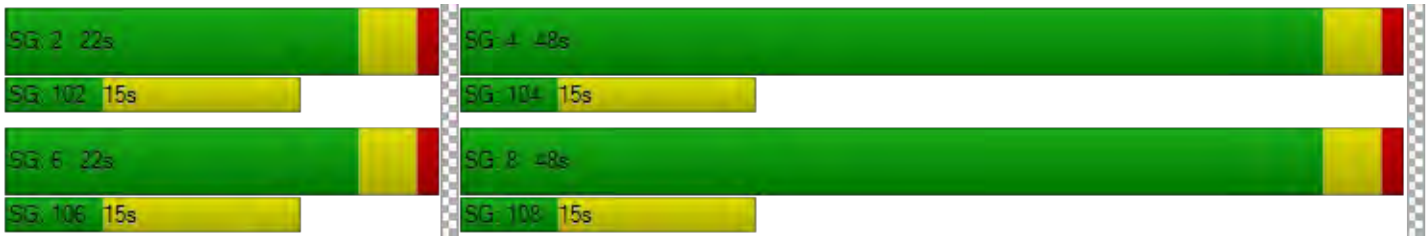
d_M, Delay for Movement [s/veh]	16.32	17.61	17.61	22.02	11.23	11.23	31.07	15.31	15.31	23.00	19.36	19.36
Movement LOS	B	B	B	C	B	B	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	17.27			13.63			17.83			19.97		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	17.82											
Intersection LOS	B											
Intersection V/C	0.602											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	26.58	26.58	26.58	26.58
l_p,int, Pedestrian LOS Score for Intersection	2.363	2.227	2.414	2.244
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	514	514	1257	1257
d_b, Bicycle Delay [s]	19.31	19.31	4.83	4.83
l_b,int, Bicycle LOS Score for Intersection	3.157	2.452	2.820	3.221
Bicycle LOS	C	B	C	C

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: 13th St Access

Control Type:	Two-way stop	Delay (sec / veh):	17.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.020

Intersection Setup

Name			13th Ave			
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			13th Ave			
Base Volume Input [veh/h]	0	0	190	0	0	312
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	8.00	8.00	8.00	8.00	8.00	8.00
Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	1	19	1	1	7
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	1	296	1	1	463
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	89	0	0	139
Total Analysis Volume [veh/h]	6	1	357	1	1	558
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	17.50	10.60	0.00	0.00	8.08	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.07	0.07	0.00	0.00	2.66	2.66
95th-Percentile Queue Length [ft]	1.68	1.68	0.00	0.00	66.50	66.50
d_A, Approach Delay [s/veh]	16.51		0.00		0.01	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.13					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 9: Ivy St Access

Control Type:	Two-way stop	Delay (sec / veh):	17.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	153	0	0	338	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.38	0.38	0.38	0.38	2.00	2.00
Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	27	0	2	15	1	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	250	0	2	508	1	5
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	75	0	1	153	0	2
Total Analysis Volume [veh/h]	301	0	2	612	1	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.84	0.00	17.02	9.94
Movement LOS	A	A	A	A	C	A
95th-Percentile Queue Length [veh]	0.00	0.00	2.72	2.72	0.03	0.03
95th-Percentile Queue Length [ft]	0.00	0.00	68.01	68.01	0.87	0.87
d_A, Approach Delay [s/veh]	0.00		0.03		10.95	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.10					
Intersection LOS	C					

Ivy St Townhomes TIA - 18-387

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Report File: J:\...\AM Future w 2 Access (30).pdf

Scenario 17 AM Future w 2 Accesses (30)
7/6/2018

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	140	303	83	38	118	16	42	178	45	78	329	60	1430

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
2	13th St Access	5	1	296	1	1	463	767

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
9	Ivy St Access	250	0	2	508	1	5	766

Ivy St Townhomes TIA - 18-387

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Scenario 17 AM Future w 2 Accesses (30)
7/6/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	Final Base	93	196	49	25	77	8	21	116	26	50	222	40	923
		Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	4	17	11	1	6	4	11	9	7	5	5	2	82
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**140**	**303**	**83**	**38**	**118**	**16**	**42**	**178**	**45**	**78**	**329**	**60**	**1430**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
2	13th St Access	Final Base	0	0	190	0	0	312	502
		Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	5	1	19	1	1	7	34
		Other	0	0	0	0	0	0	0
		Future Total	**5**	**1**	**296**	**1**	**1**	**463**	**767**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
9	Ivy St Access	Final Base	153	0	0	338	0	0	491
		Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	27	0	2	15	1	5	50
		Other	0	0	0	0	0	0	0
		Future Total	**250**	**0**	**2**	**508**	**1**	**5**	**766**

Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\AM Future w 2 Access (30).pdf

Scenario 17 AM Future w 2 Accesses (30)
7/6/2018

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: Ivy St Townhouses	Apts	ITE 220	Units	0.460	30.000	23.00	77.00	3	11	14	10.69
7: Mayberry Group	Homes	ITE 210	Homes	0.740	89.000	25.00	75.00	16	50	66	50.38
8: Beck Pond	Homes	ite 210	Homes	0.740	69.000	25.00	75.00	13	38	51	38.93
					Added Trips Total			**32**	**99**	**131**	**100.00**

Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\AM Future w 2 Access (30).pdf

Scenario 17 AM Future w 2 Accesses (30)
7/6/2018

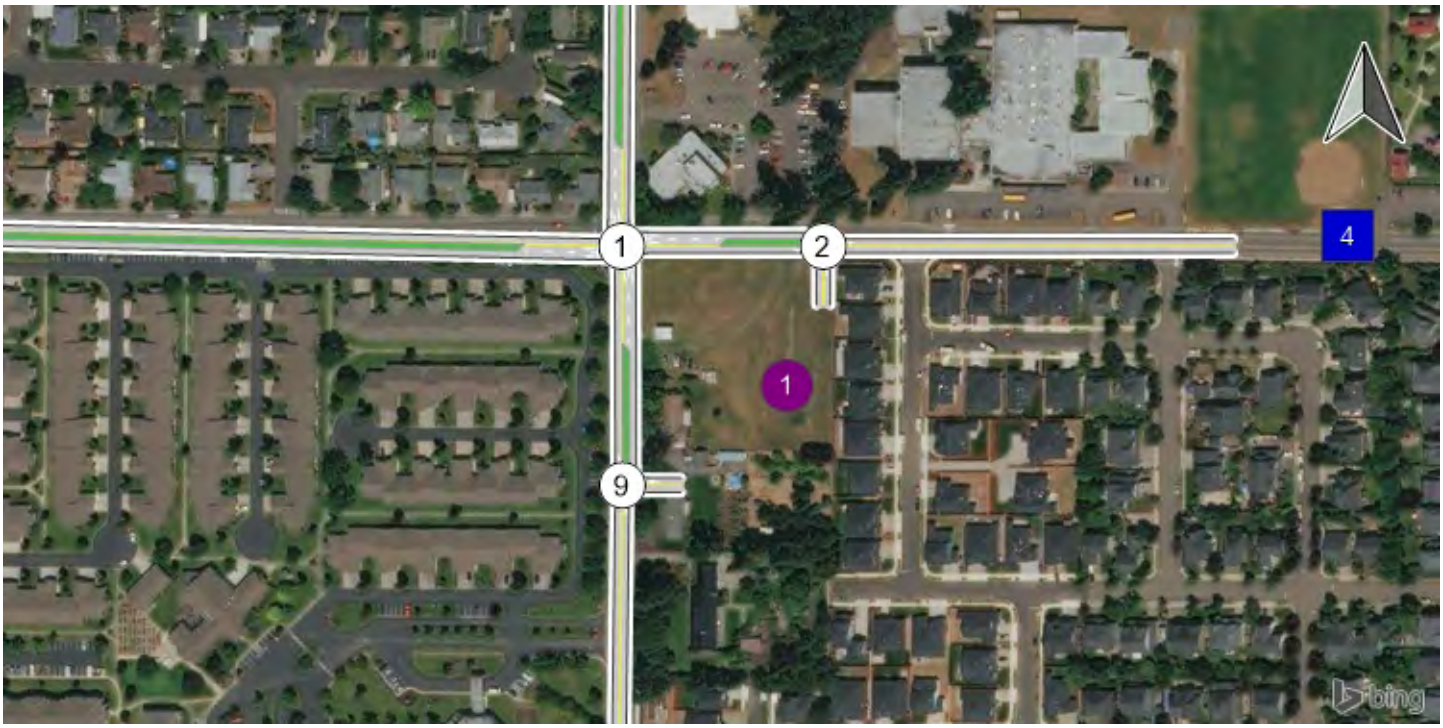
Trip Distribution summary

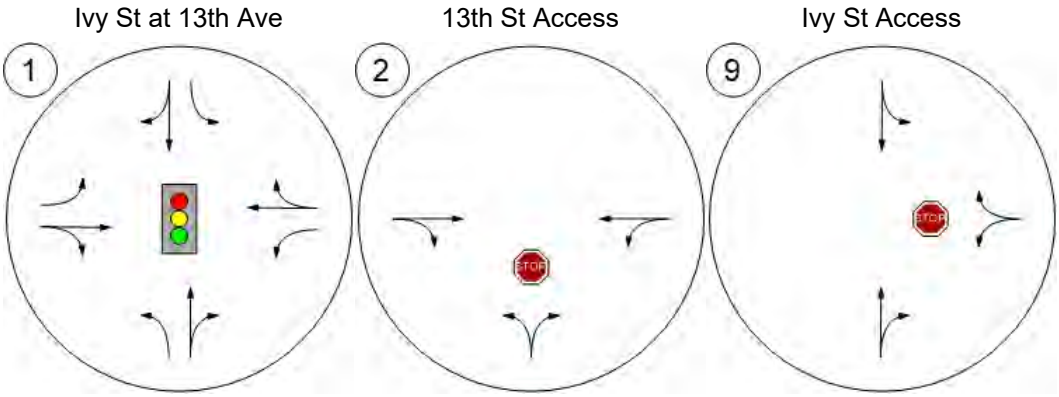
Zone / Gate	Zone 1: Ivy St Townhouses			
	To Ivy St Townhouses:		From Ivy St Townhouses:	
	Share %	Trips	Share %	Trips
7: Mayberry Group	0.00	0	0.00	0
8: Beck Pond	0.00	0	0.00	0
2: Gate	35.00	1	35.00	4
3: Gate	30.00	1	30.00	3
4: Gate	20.00	1	20.00	2
5: Gate	15.00	0	15.00	2
6: Gate	0.00	0	0.00	0
Total	**100.00**	**3**	**100.00**	**11**

Zone / Gate	Zone 7: Mayberry Group			
	To Mayberry Group:		From Mayberry Group:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
8: Beck Pond	0.00	0	0.00	0
2: Gate	35.00	6	35.00	17
3: Gate	30.00	5	30.00	15
4: Gate	20.00	3	20.00	10
5: Gate	15.00	2	15.00	8
6: Gate	0.00	0	0.00	0
Total	**100.00**	**16**	**100.00**	**50**

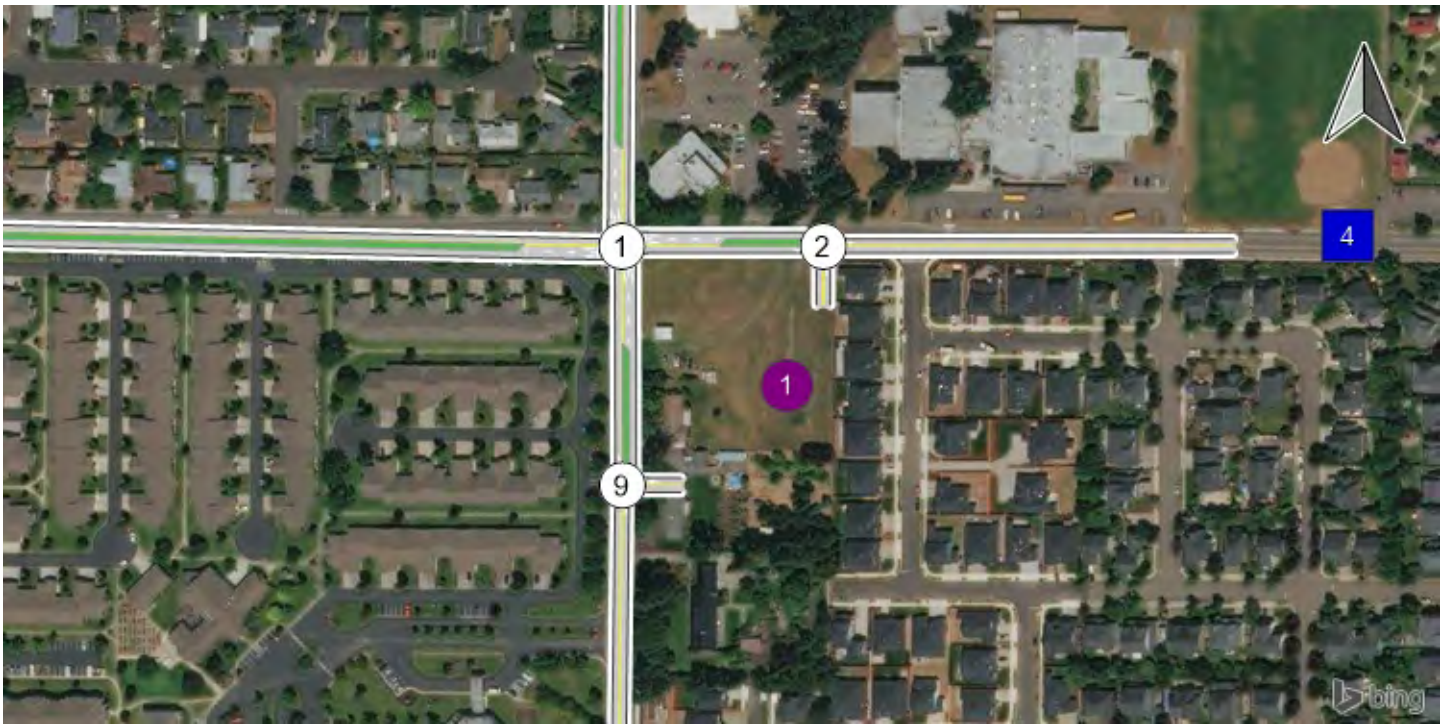
Zone / Gate	Zone 8: Beck Pond			
	To Beck Pond:		From Beck Pond:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
7: Mayberry Group	0.00	0	0.00	0
2: Gate	35.00	5	35.00	13
3: Gate	30.00	4	30.00	11
4: Gate	20.00	3	20.00	8
5: Gate	15.00	2	15.00	6
6: Gate	0.00	0	0.00	0
Total	**100.00**	**14**	**100.00**	**38**

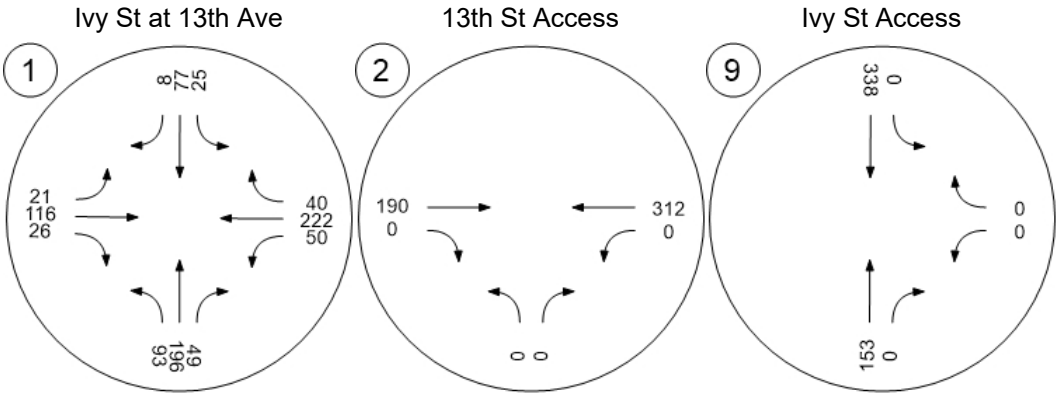
Report Figure 1: Lane Configuration and Traffic Control



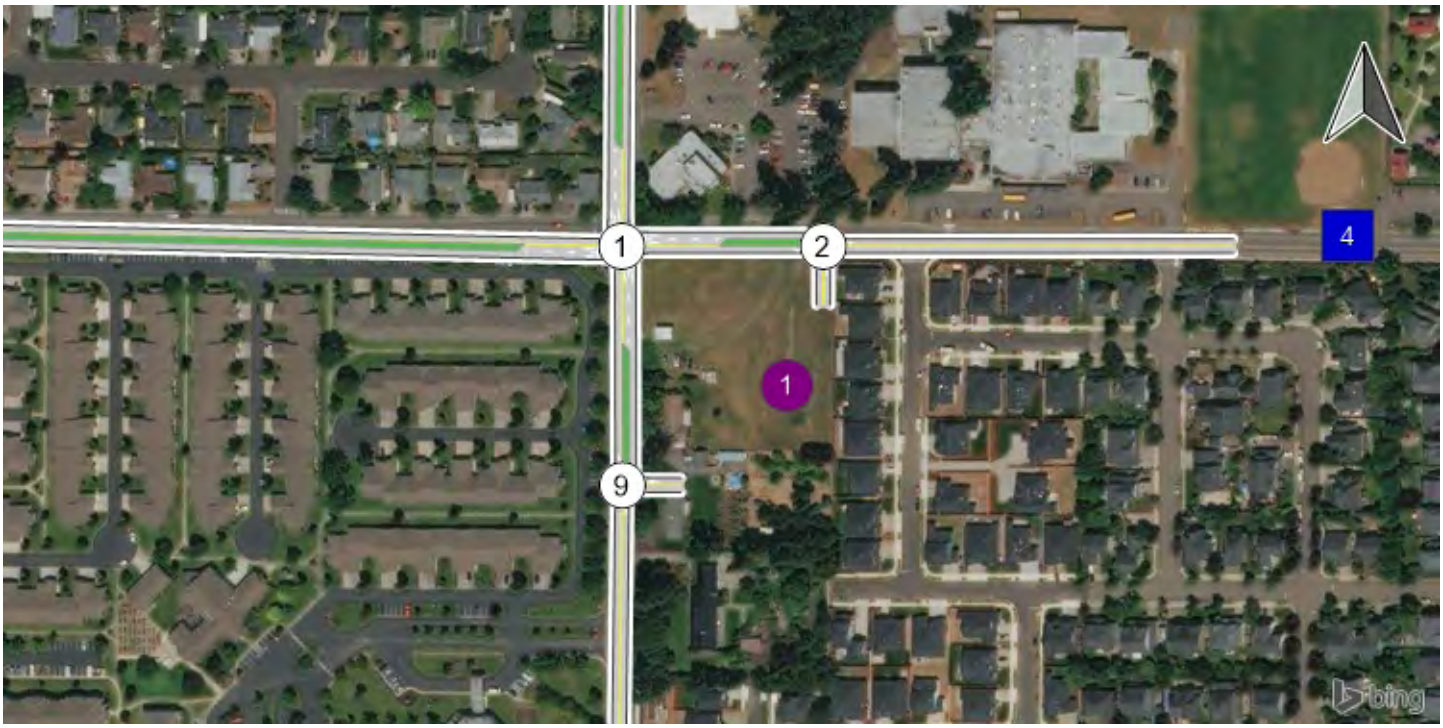


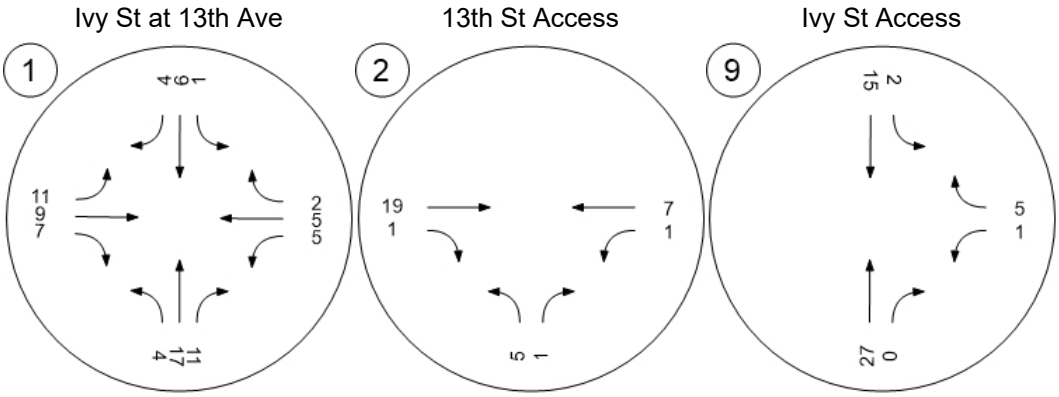
Report Figure 2a: Traffic Volume - Base Volume



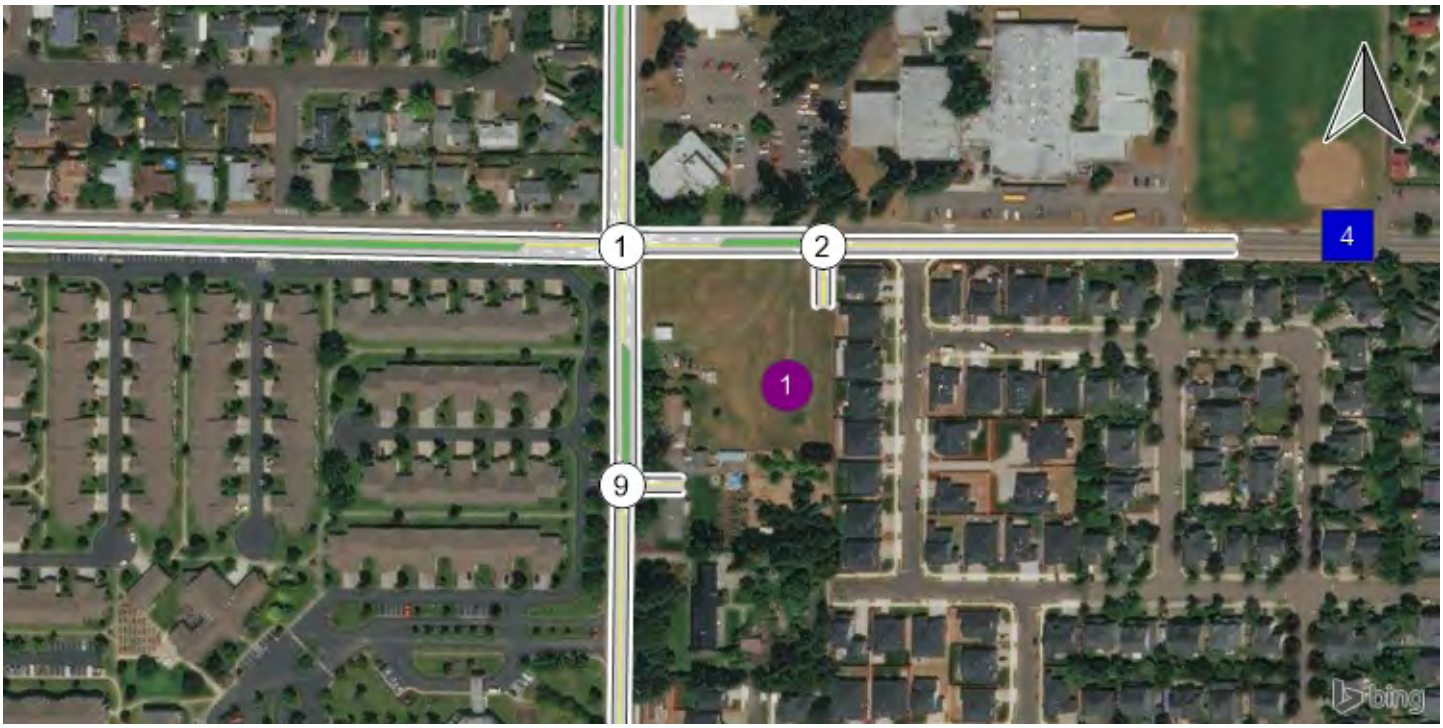


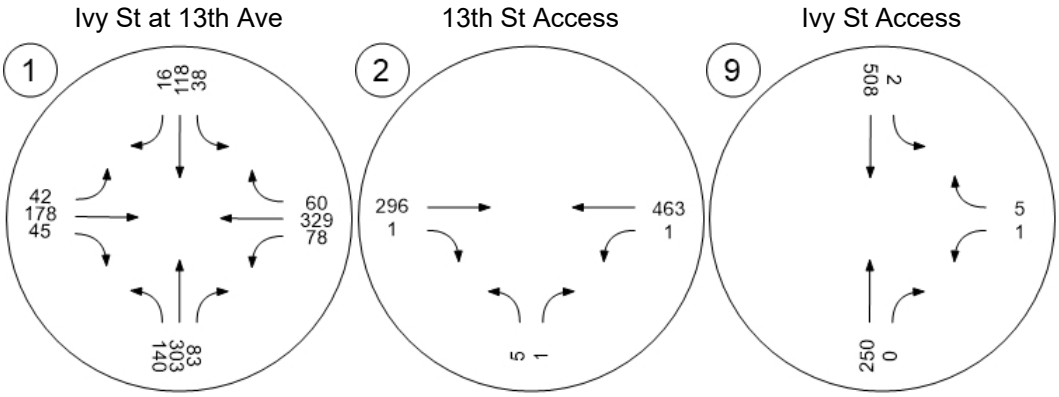
Report Figure 2d: Traffic Volume - Net New Site Trips



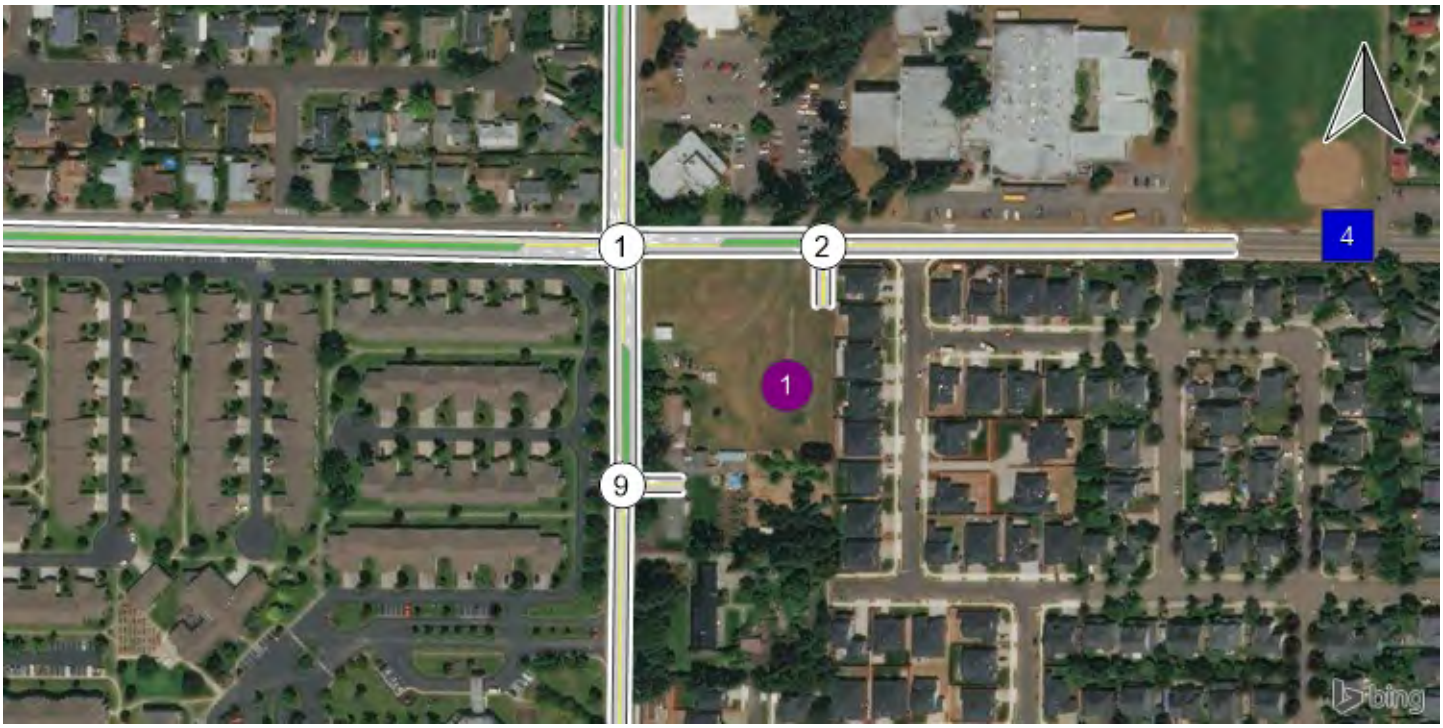


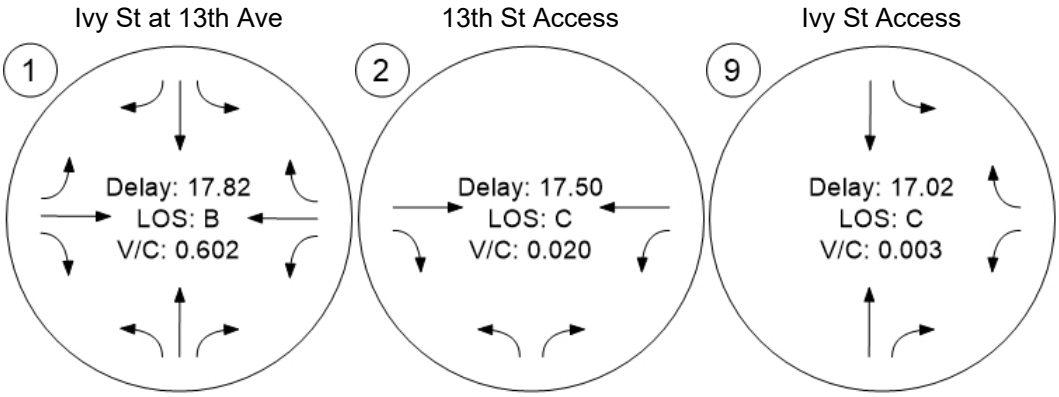
Report Figure 2f: Traffic Volume - Future Total Volume





Report Figure 3: Traffic Conditions





Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\PM Future w 2 Access (30).pdf

Scenario 18 PM Future w 2 Accesses (30)
7/6/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ivy St at 13th Ave	Signalized	HCM 6th Edition	WB Left	0.576	22.3	C
2	13th St Access	Two-way stop	HCM 6th Edition	NB Left	0.010	17.7	C
9	Ivy St Access	Two-way stop	HCM 6th Edition	WB Left	0.005	23.8	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Ivy St at 13th Ave

Control Type:	Signalized	Delay (sec / veh):	22.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.576

Intersection Setup

Name				Ivy St			13th Ave			13th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name				Ivy St			13th Ave			13th Ave		
Base Volume Input [veh/h]	41	92	55	65	252	29	38	182	93	102	136	39
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	0.90	0.90	0.90	3.20	3.20	3.20	0.40	0.40	0.40
Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	11	9	2	19	13	8	7	6	13	10	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	67	145	89	97	387	55	63	273	142	162	209	58
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	39	24	26	105	15	17	74	39	44	57	16
Total Analysis Volume [veh/h]	73	158	97	105	421	60	68	297	154	176	227	63
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	42	0	0	42	0	0	48	0	0	48	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	40	40	40	40	42	42	42	42
g / C, Green / Cycle	0.45	0.45	0.45	0.45	0.46	0.46	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.09	0.16	0.10	0.29	0.07	0.29	0.21	0.18
s, saturation flow rate [veh/h]	820	1572	1021	1661	971	1572	856	1642
c, Capacity [veh/h]	243	707	404	747	398	725	275	757
d1, Uniform Delay [s]	31.75	16.26	23.38	19.17	21.89	18.31	33.81	15.86
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.16	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.16	1.43	1.56	4.24	0.20	1.27	2.49	0.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.30	0.36	0.26	0.64	0.17	0.62	0.64	0.38
d, Delay for Lane Group [s/veh]	34.91	17.69	24.94	23.41	22.09	19.58	36.30	16.18
Lane Group LOS	C	B	C	C	C	B	D	B
Critical Lane Group	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	1.59	3.59	1.84	8.24	1.06	7.09	3.88	3.87
50th-Percentile Queue Length [ft]	39.71	89.79	45.90	206.12	26.42	177.16	96.96	96.79
95th-Percentile Queue Length [veh]	2.86	6.46	3.30	12.95	1.90	11.45	6.98	6.97
95th-Percentile Queue Length [ft]	71.49	161.62	82.62	323.84	47.56	286.30	174.53	174.22

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.91	17.69	17.69	24.94	23.41	23.41	22.09	19.58	19.58	36.30	16.18	16.18
Movement LOS	C	B	B	C	C	C	C	B	B	D	B	B
d_A, Approach Delay [s/veh]	21.52			23.69			19.91			23.78		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	22.30											
Intersection LOS	C											
Intersection V/C	0.576											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	2.543	2.323	2.284	2.352
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	844	844	978	978
d_b, Bicycle Delay [s]	15.02	15.02	11.76	11.76
l_b,int, Bicycle LOS Score for Intersection	2.652	3.077	3.150	3.063
Bicycle LOS	B	C	C	C

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: 13th St Access

Control Type:	Two-way stop	Delay (sec / veh):	17.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.010

Intersection Setup

Name			13th Ave			
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			13th Ave			
Base Volume Input [veh/h]	0	0	302	0	0	277
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.40	0.40	0.40	0.40	0.40	0.40
Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	1	13	5	1	21
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	1	454	5	1	425
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	123	1	0	115
Total Analysis Volume [veh/h]	3	1	493	5	1	462
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	17.70	11.37	0.00	0.00	8.35	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.04	0.04	0.00	0.00	2.21	2.21
95th-Percentile Queue Length [ft]	0.93	0.93	0.00	0.00	55.21	55.21
d_A, Approach Delay [s/veh]	16.12		0.00		0.02	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.08					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 9: Ivy St Access

Control Type:	Two-way stop	Delay (sec / veh):	23.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	288	0	0	447	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	2.40	2.00	2.00
Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	24	1	5	33	1	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	444	1	5	686	1	3
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	121	0	1	186	0	1
Total Analysis Volume [veh/h]	483	1	5	746	1	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.01	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.36	0.00	23.85	11.27
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.00	0.00	6.03	6.03	0.03	0.03
95th-Percentile Queue Length [ft]	0.00	0.00	150.65	150.65	0.78	0.78
d_A, Approach Delay [s/veh]	0.00		0.06		14.41	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.08					
Intersection LOS	C					

Ivy St Townhomes TIA - 18-387

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Report File: J:\...\PM Future w 2 Access (30).pdf

Scenario 18 PM Future w 2 Accesses (30)
7/6/2018

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	67	145	89	97	387	55	63	273	142	162	209	58	1747

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
2	13th St Access	3	1	454	5	1	425	889

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
9	Ivy St Access	444	1	5	686	1	3	1140

Ivy St Townhomes TIA - 18-387

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Scenario 18 PM Future w 2 Accesses (30)
7/6/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	Final Base	41	92	55	65	252	29	38	182	93	102	136	39	1124
		Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	7	11	9	2	19	13	8	7	6	13	10	1	106
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**67**	**145**	**89**	**97**	**387**	**55**	**63**	**273**	**142**	**162**	**209**	**58**	**1747**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
2	13th St Access	Final Base	0	0	302	0	0	277	579
		Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	3	1	13	5	1	21	44
		Other	0	0	0	0	0	0	0
		Future Total	**3**	**1**	**454**	**5**	**1**	**425**	**889**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
9	Ivy St Access	Final Base	288	0	0	447	0	0	735
		Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	24	1	5	33	1	3	67
		Other	0	0	0	0	0	0	0
		Future Total	**444**	**1**	**5**	**686**	**1**	**3**	**1140**

Ivy St Townhomes TIA - 18-387

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Report File: J:\...\PM Future w 2 Access (30).pdf

Scenario 18 PM Future w 2 Accesses (30)
7/6/2018

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: Ivy St Townhouses	Apts	ITE 220	Units	0.560	30.000	63.00	37.00	11	6	17	9.83
7: Mayberry Group	Homes	ITE 210	Homes	0.990	89.000	63.00	37.00	55	33	88	50.87
8: Beck Pond	Homes	ite 210	Homes	0.990	69.000	63.00	37.00	43	25	68	39.31
					Added Trips Total			**109**	**64**	**173**	**100.00**

Ivy St Townhomes TIA - 18-387

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Report File: J:\...\PM Future w 2 Access (30).pdf

Scenario 18 PM Future w 2 Accesses (30)
7/6/2018

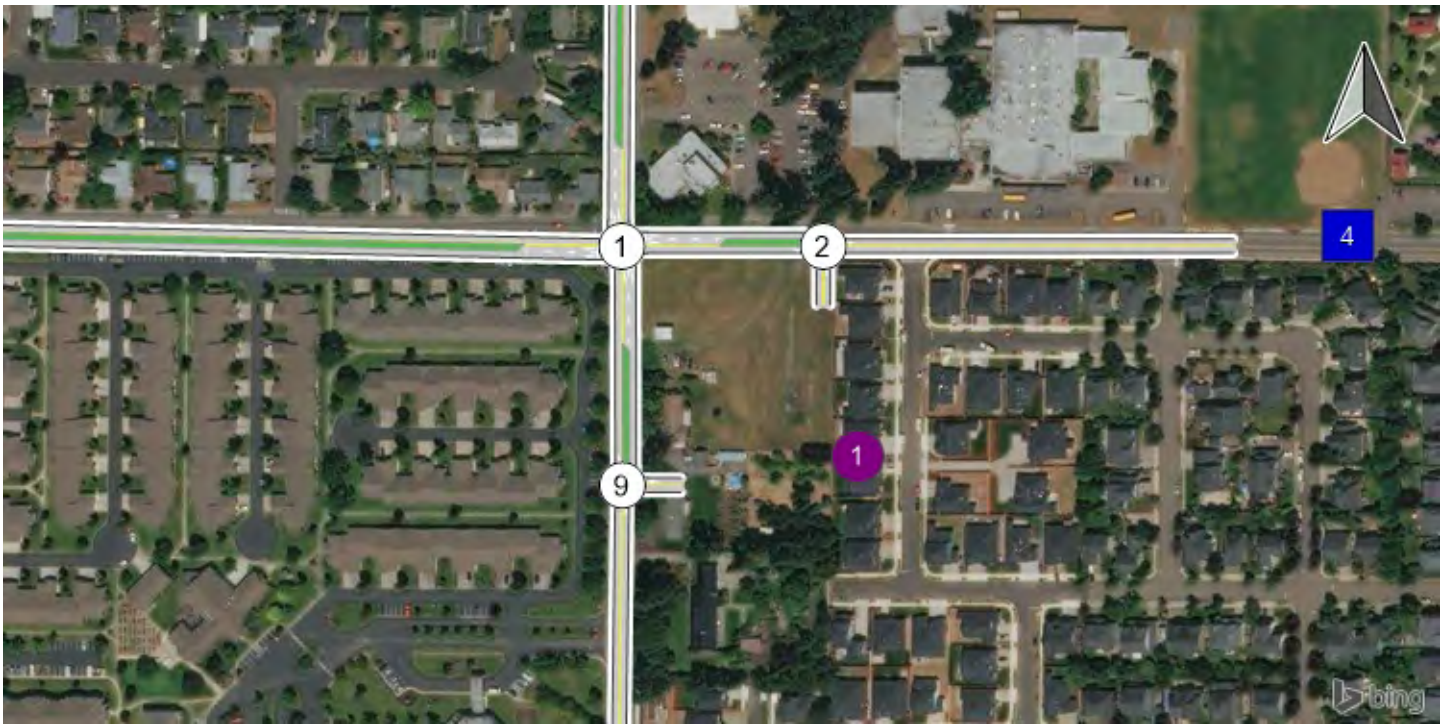
Trip Distribution summary

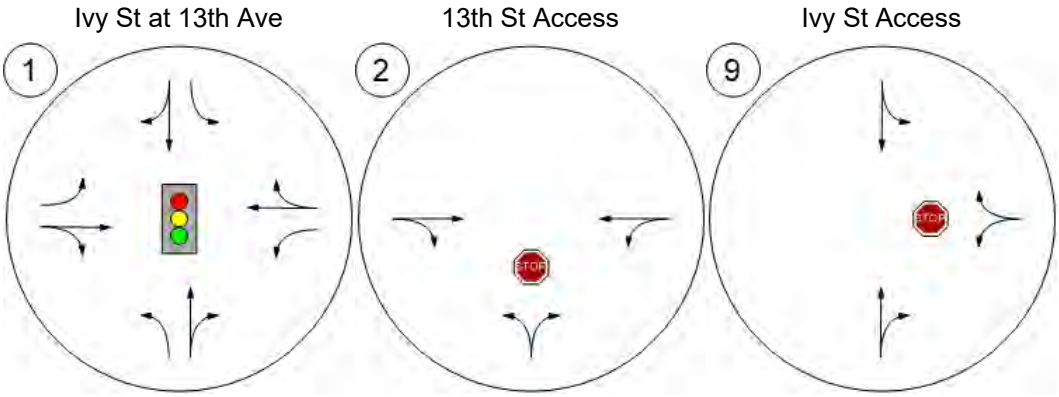
Zone / Gate	Zone 1: Ivy St Townhouses			
	To Ivy St Townhouses:		From Ivy St Townhouses:	
	Share %	Trips	Share %	Trips
7: Mayberry Group	0.00	0	0.00	0
8: Beck Pond	0.00	0	0.00	0
2: Gate	35.00	4	35.00	2
3: Gate	30.00	3	30.00	2
4: Gate	20.00	2	20.00	1
5: Gate	15.00	2	15.00	1
6: Gate	0.00	0	0.00	0
Total	**100.00**	**11**	**100.00**	**6**

Zone / Gate	Zone 7: Mayberry Group			
	To Mayberry Group:		From Mayberry Group:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
8: Beck Pond	0.00	0	0.00	0
2: Gate	35.00	19	35.00	11
3: Gate	30.00	17	30.00	10
4: Gate	20.00	11	20.00	7
5: Gate	15.00	8	15.00	5
6: Gate	0.00	0	0.00	0
Total	**100.00**	**55**	**100.00**	**33**

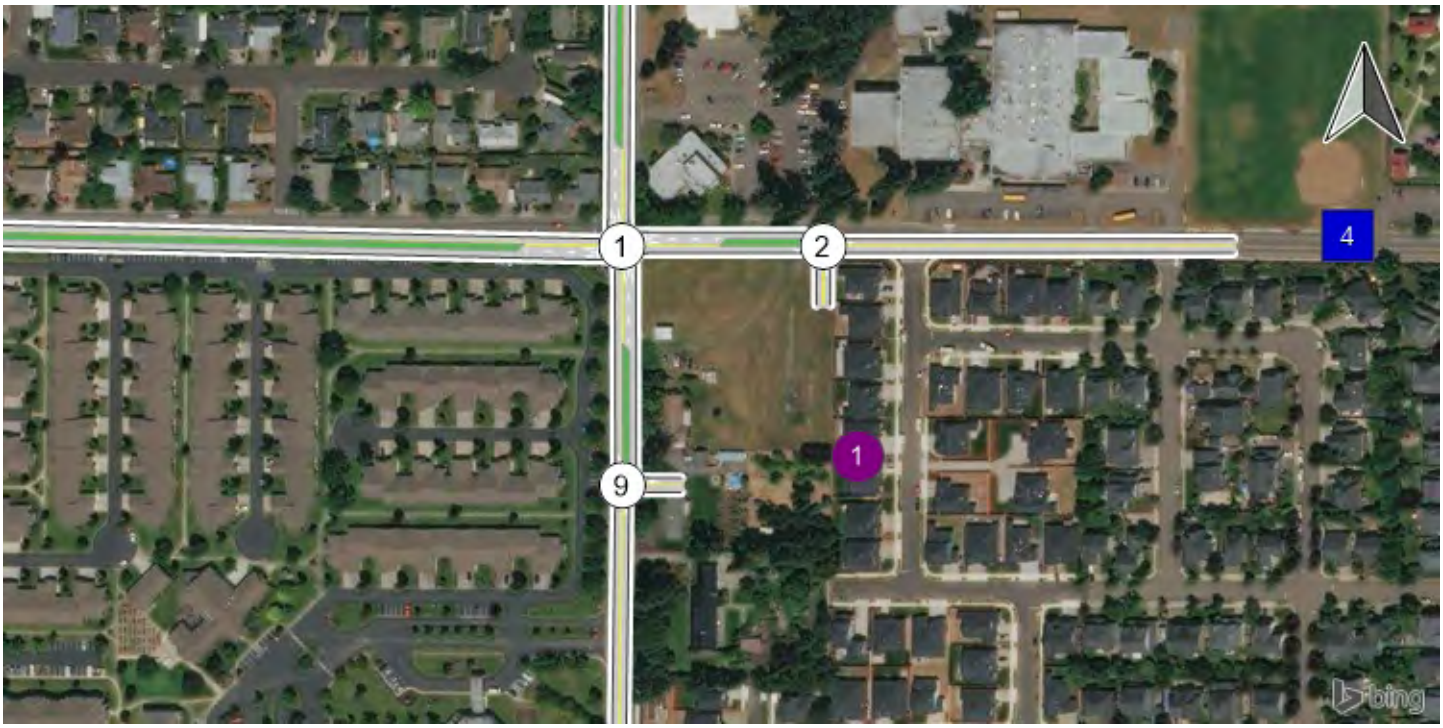
Zone / Gate	Zone 8: Beck Pond			
	To Beck Pond:		From Beck Pond:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
7: Mayberry Group	0.00	0	0.00	0
2: Gate	35.00	15	35.00	8
3: Gate	30.00	13	30.00	8
4: Gate	20.00	9	20.00	5
5: Gate	15.00	6	15.00	4
6: Gate	0.00	0	0.00	0
Total	**100.00**	**43**	**100.00**	**25**

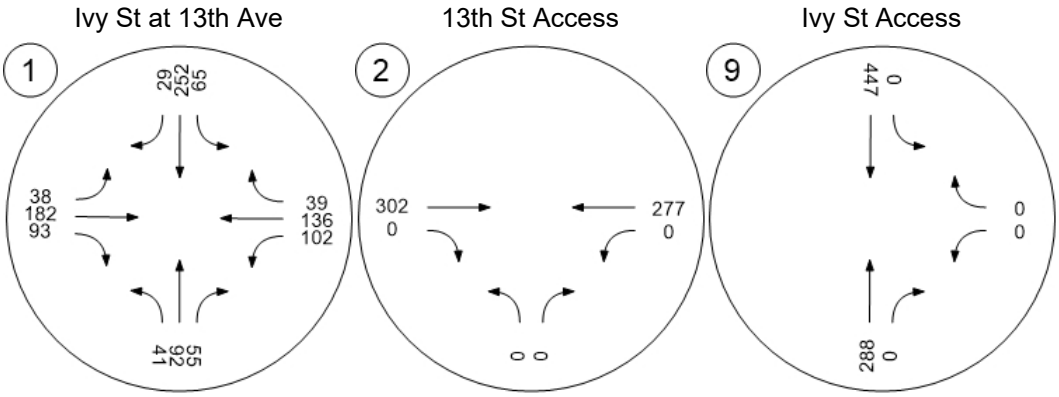
Report Figure 1: Lane Configuration and Traffic Control



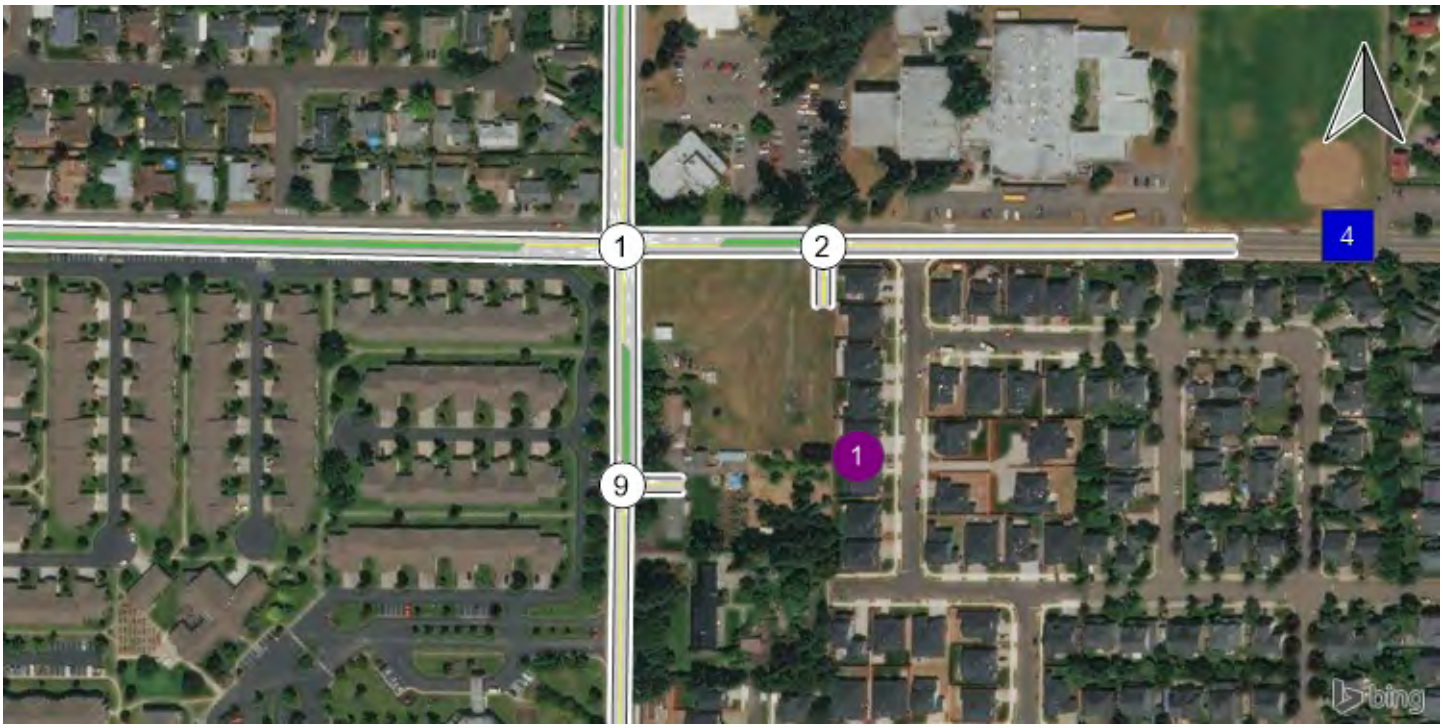


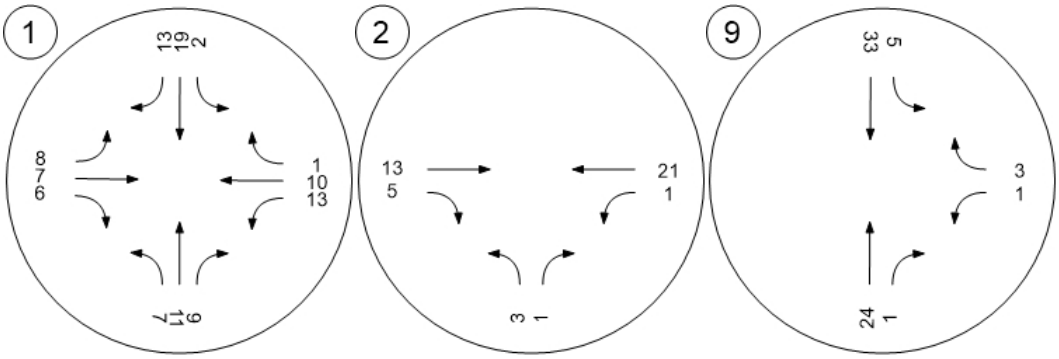
Report Figure 2a: Traffic Volume - Base Volume



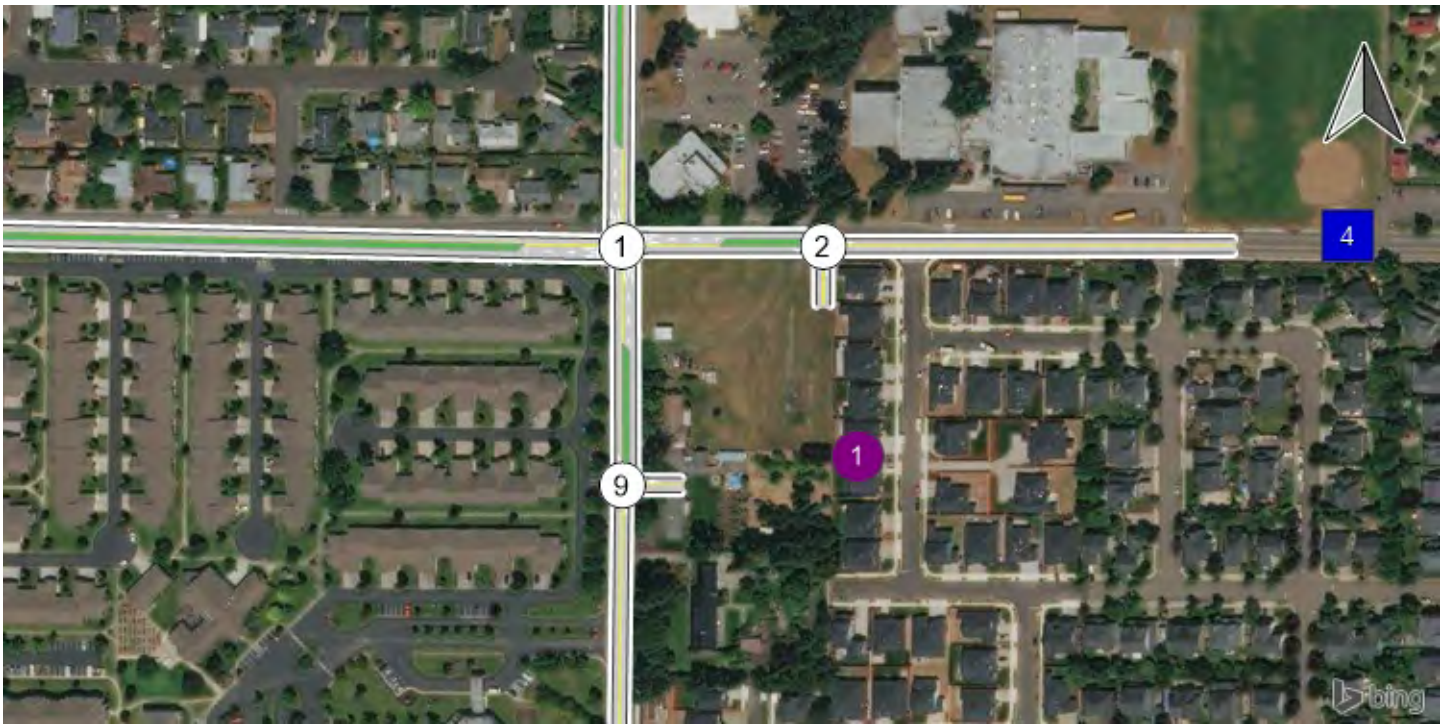


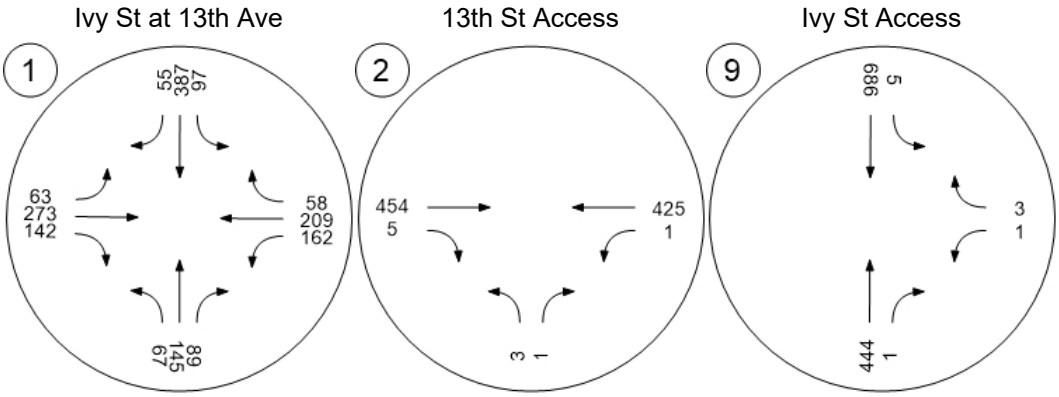
Report Figure 2d: Traffic Volume - Net New Site Trips



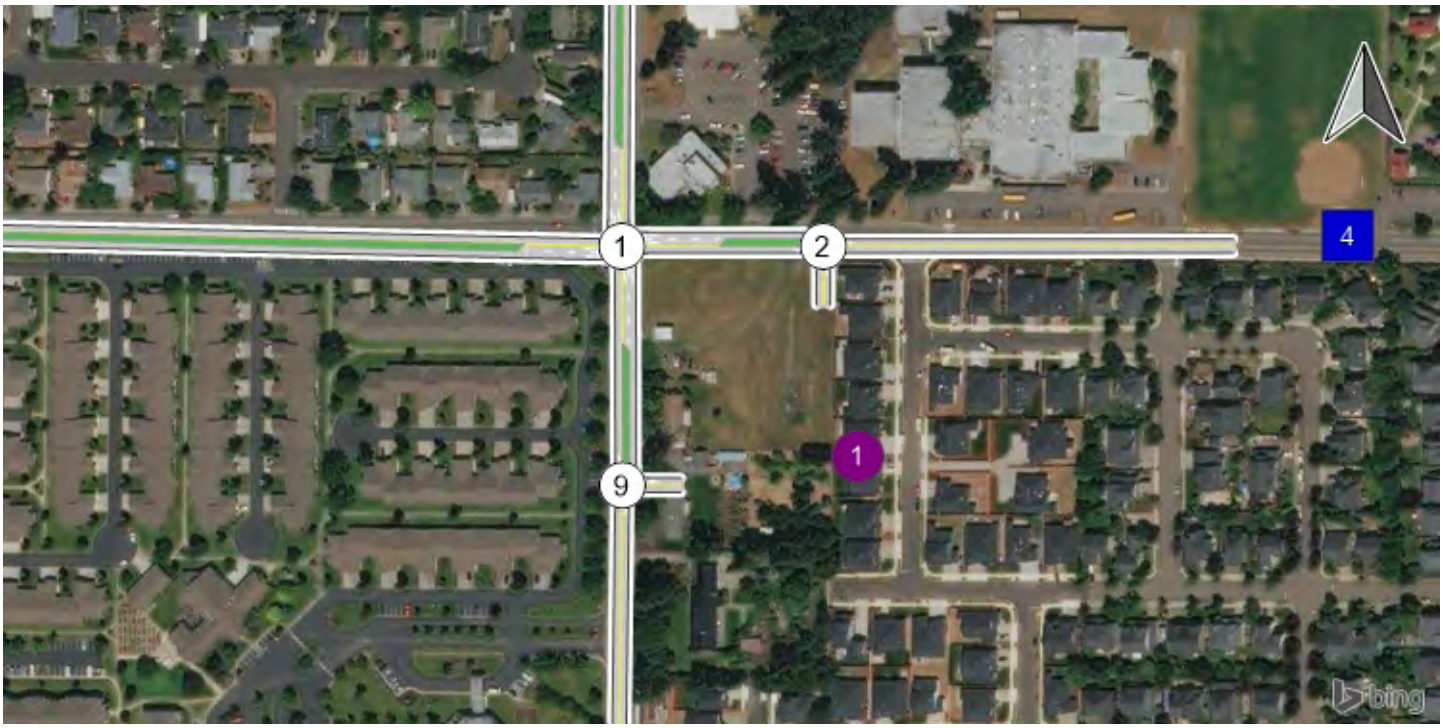


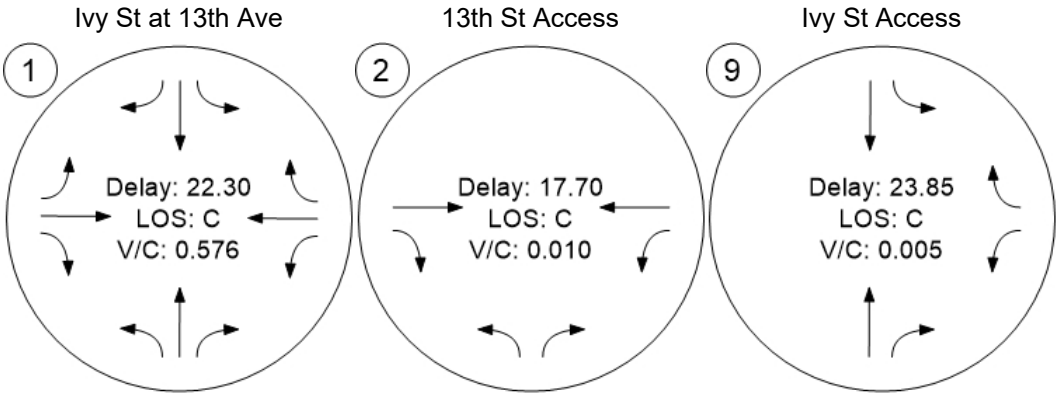
Report Figure 2f: Traffic Volume - Future Total Volume





Report Figure 3: Traffic Conditions





Ivy St Townhomes TIA - 18-387

Vistro File: J:\...\18-387 Ivy St Townhomes.vistro
Report File: J:\...\AM Future w 2 Access (38).pdf

Scenario 13 AM Future w 2 Accesses (38)
7/6/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ivy St at 13th Ave	Signalized	HCM 6th Edition	EB Left	0.603	17.8	B
2	13th St Access	Two-way stop	HCM 6th Edition	NB Left	0.020	17.5	C
9	Ivy St Access	Two-way stop	HCM 6th Edition	WB Left	0.003	17.1	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Ivy St at 13th Ave

Control Type:	Signalized	Delay (sec / veh):	17.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.603

Intersection Setup

Name				Ivy St			13th Ave			13th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name				Ivy St			13th Ave			13th Ave		
Base Volume Input [veh/h]	93	196	49	25	77	8	21	116	26	50	222	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	8.30	8.30	8.30	9.10	9.10	9.10	5.50	5.50	5.50	8.00	8.00	8.00
Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	17	12	1	6	4	11	9	7	5	5	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	140	303	84	38	118	16	42	178	45	78	329	60
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	91	25	11	36	5	13	54	14	23	99	18
Total Analysis Volume [veh/h]	169	365	101	46	142	19	51	214	54	94	396	72
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	22	0	0	22	0	0	48	0	0	48	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	34	34	34	34	28	28	28	28
g / C, Green / Cycle	0.48	0.48	0.48	0.48	0.41	0.41	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.16	0.30	0.06	0.10	0.06	0.17	0.10	0.30
s, saturation flow rate [veh/h]	1047	1539	786	1555	809	1580	952	1560
c, Capacity [veh/h]	528	738	298	746	184	641	330	633
d1, Uniform Delay [s]	14.72	13.58	20.98	10.56	30.26	14.88	22.53	17.65
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.60	4.07	1.10	0.66	0.81	0.43	0.47	1.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.32	0.63	0.15	0.22	0.28	0.42	0.29	0.74
d, Delay for Lane Group [s/veh]	16.32	17.65	22.07	11.23	31.07	15.31	23.00	19.36
Lane Group LOS	B	B	C	B	C	B	C	B
Critical Lane Group	No	Yes	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.98	5.67	0.66	1.44	0.85	2.95	1.31	6.25
50th-Percentile Queue Length [ft]	49.50	141.66	16.59	35.89	21.23	73.71	32.77	156.23
95th-Percentile Queue Length [veh]	3.56	9.57	1.19	2.58	1.53	5.31	2.36	10.35
95th-Percentile Queue Length [ft]	89.10	239.25	29.86	64.60	38.22	132.68	58.98	258.73

Movement, Approach, & Intersection Results

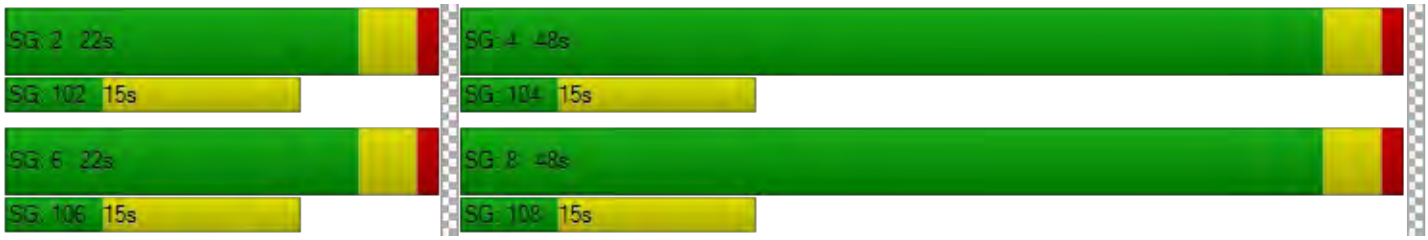
d_M, Delay for Movement [s/veh]	16.32	17.65	17.65	22.07	11.23	11.23	31.07	15.31	15.31	23.00	19.36	19.36
Movement LOS	B	B	B	C	B	B	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	17.30			13.64			17.83			19.97		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	17.83											
Intersection LOS	B											
Intersection V/C	0.603											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	26.58	26.58	26.58	26.58
l_p,int, Pedestrian LOS Score for Intersection	2.363	2.227	2.414	2.244
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	514	514	1257	1257
d_b, Bicycle Delay [s]	19.31	19.31	4.83	4.83
l_b,int, Bicycle LOS Score for Intersection	3.158	2.452	2.820	3.221
Bicycle LOS	C	B	C	C

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: 13th St Access

Control Type:	Two-way stop	Delay (sec / veh):	17.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.020

Intersection Setup

Name			13th Ave			
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			13th Ave			
Base Volume Input [veh/h]	0	0	190	0	0	312
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	8.00	8.00	8.00	8.00	8.00	8.00
Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	2	20	2	1	7
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	2	297	2	1	463
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	1	89	1	0	139
Total Analysis Volume [veh/h]	6	2	358	2	1	558
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	17.52	10.61	0.00	0.00	8.09	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.07	0.07	0.00	0.00	2.67	2.67
95th-Percentile Queue Length [ft]	1.80	1.80	0.00	0.00	66.70	66.70
d_A, Approach Delay [s/veh]	15.79		0.00		0.01	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.15					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 9: Ivy St Access

Control Type:	Two-way stop	Delay (sec / veh):	17.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	153	0	0	338	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.38	0.38	0.38	0.38	2.00	2.00
Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	28	1	2	15	1	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	251	1	2	508	1	6
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	76	0	1	153	0	2
Total Analysis Volume [veh/h]	302	1	2	612	1	7
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.85	0.00	17.05	9.96
Movement LOS	A	A	A	A	C	A
95th-Percentile Queue Length [veh]	0.00	0.00	2.73	2.73	0.04	0.04
95th-Percentile Queue Length [ft]	0.00	0.00	68.22	68.22	0.97	0.97
d_A, Approach Delay [s/veh]	0.00		0.03		10.84	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.11					
Intersection LOS	C					

Ivy St Townhomes TIA - 18-387

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Scenario 13 AM Future w 2 Accesses (38)
7/6/2018

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	140	303	84	38	118	16	42	178	45	78	329	60	1431

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
2	13th St Access	5	2	297	2	1	463	770

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
9	Ivy St Access	251	1	2	508	1	6	769

Ivy St Townhomes TIA - 18-387

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Scenario 13 AM Future w 2 Accesses (38)
7/6/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	Final Base	93	196	49	25	77	8	21	116	26	50	222	40	923
		Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	4	17	12	1	6	4	11	9	7	5	5	2	83
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**140**	**303**	**84**	**38**	**118**	**16**	**42**	**178**	**45**	**78**	**329**	**60**	**1431**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
2	13th St Access	Final Base	0	0	190	0	0	312	502
		Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	5	2	20	2	1	7	37
		Other	0	0	0	0	0	0	0
		Future Total	**5**	**2**	**297**	**2**	**1**	**463**	**770**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
9	Ivy St Access	Final Base	153	0	0	338	0	0	491
		Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	28	1	2	15	1	6	53
		Other	0	0	0	0	0	0	0
		Future Total	**251**	**1**	**2**	**508**	**1**	**6**	**769**

Ivy St Townhomes TIA - 18-387

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Report File: J:\...\AM Future w 2 Access (38).pdf

Scenario 13 AM Future w 2 Accesses (38)
7/6/2018

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: Ivy St Townhouses	Apts	ITE 220	Units	0.460	38.000	23.00	77.00	4	13	17	12.69
7: Mayberry Group	Homes	ITE 210	Homes	0.740	89.000	25.00	75.00	16	50	66	49.25
8: Beck Pond	Homes	ite 210	Homes	0.740	69.000	25.00	75.00	13	38	51	38.06
					Added Trips Total			**33**	**101**	**134**	**100.00**

Ivy St Townhomes TIA - 18-387

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Report File: J:\...\AM Future w 2 Access (38).pdf

Scenario 13 AM Future w 2 Accesses (38)
7/6/2018

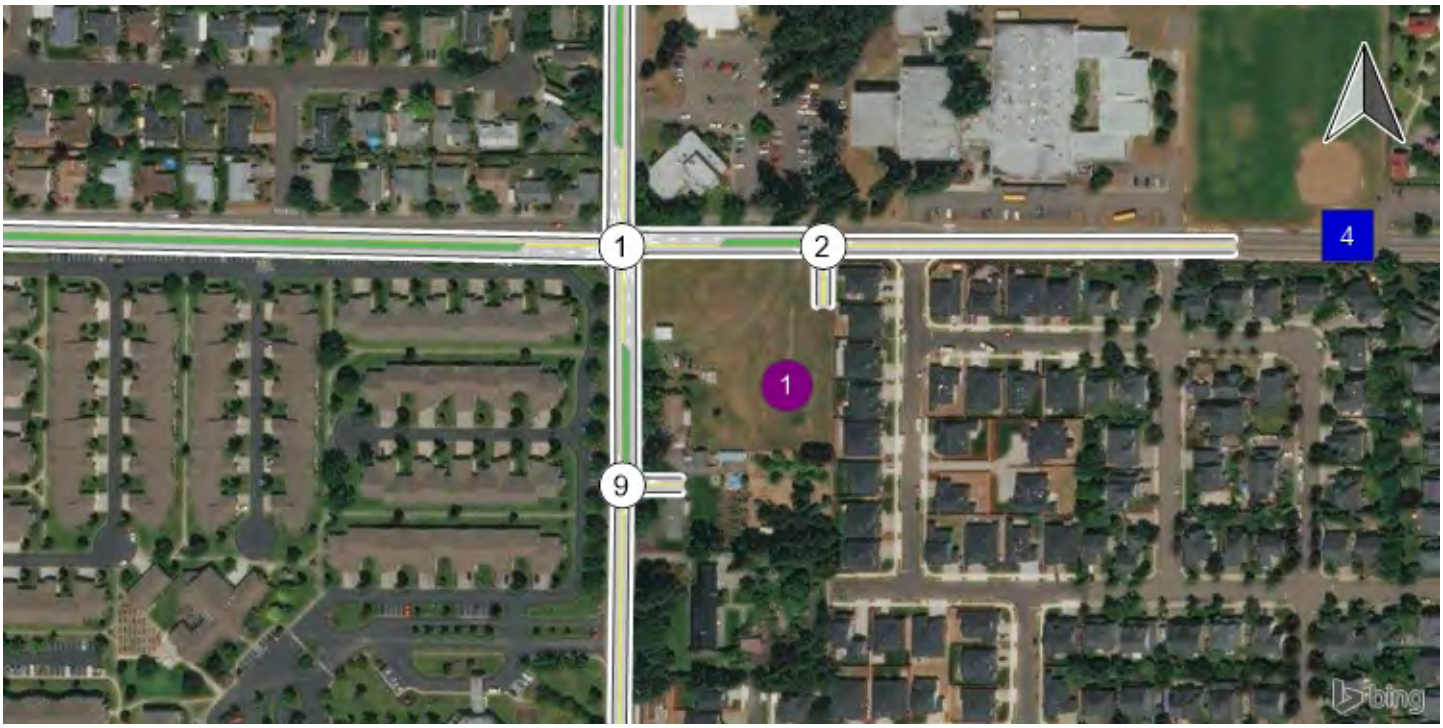
Trip Distribution summary

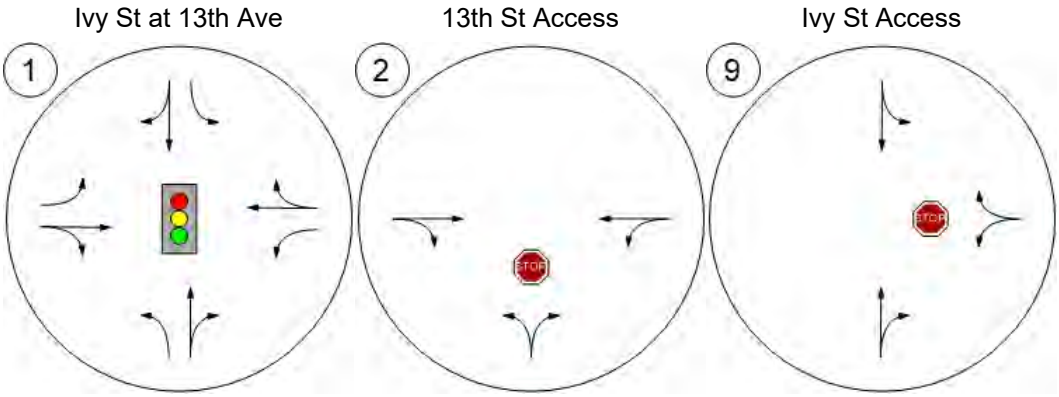
Zone / Gate	Zone 1: Ivy St Townhouses			
	To Ivy St Townhouses:		From Ivy St Townhouses:	
	Share %	Trips	Share %	Trips
7: Mayberry Group	0.00	0	0.00	0
8: Beck Pond	0.00	0	0.00	0
2: Gate	35.00	1	35.00	4
3: Gate	30.00	1	30.00	4
4: Gate	20.00	1	20.00	3
5: Gate	15.00	1	15.00	2
6: Gate	0.00	0	0.00	0
Total	**100.00**	**4**	**100.00**	**13**

Zone / Gate	Zone 7: Mayberry Group			
	To Mayberry Group:		From Mayberry Group:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
8: Beck Pond	0.00	0	0.00	0
2: Gate	35.00	6	35.00	17
3: Gate	30.00	5	30.00	15
4: Gate	20.00	3	20.00	10
5: Gate	15.00	2	15.00	8
6: Gate	0.00	0	0.00	0
Total	**100.00**	**16**	**100.00**	**50**

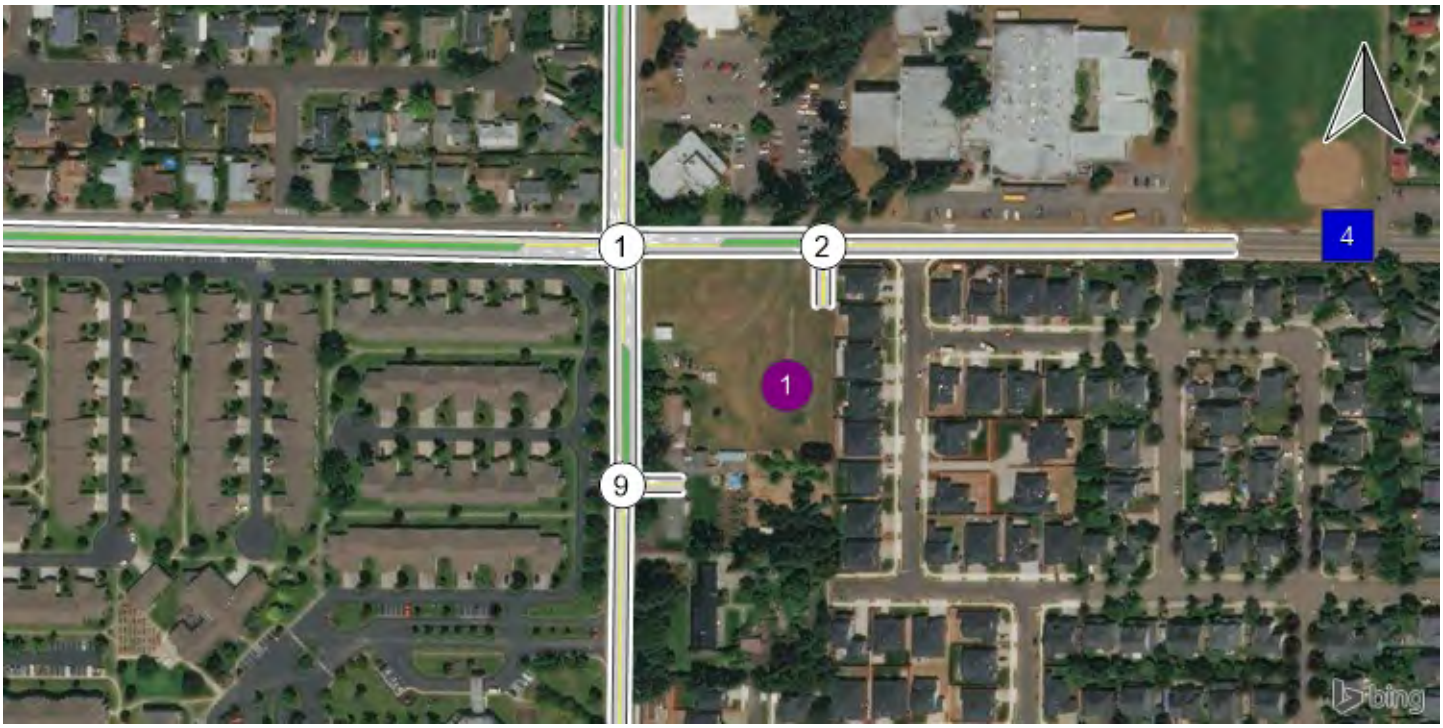
Zone / Gate	Zone 8: Beck Pond			
	To Beck Pond:		From Beck Pond:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
7: Mayberry Group	0.00	0	0.00	0
2: Gate	35.00	5	35.00	13
3: Gate	30.00	4	30.00	11
4: Gate	20.00	3	20.00	8
5: Gate	15.00	2	15.00	6
6: Gate	0.00	0	0.00	0
Total	**100.00**	**14**	**100.00**	**38**

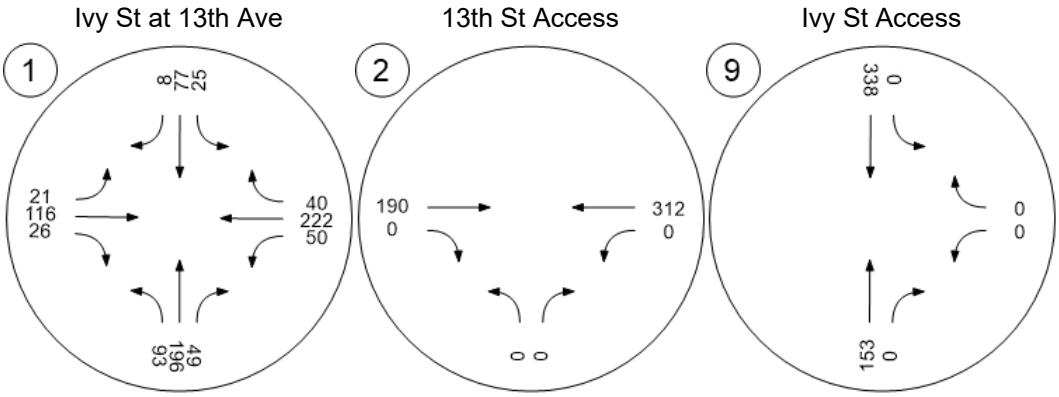
Report Figure 1: Lane Configuration and Traffic Control



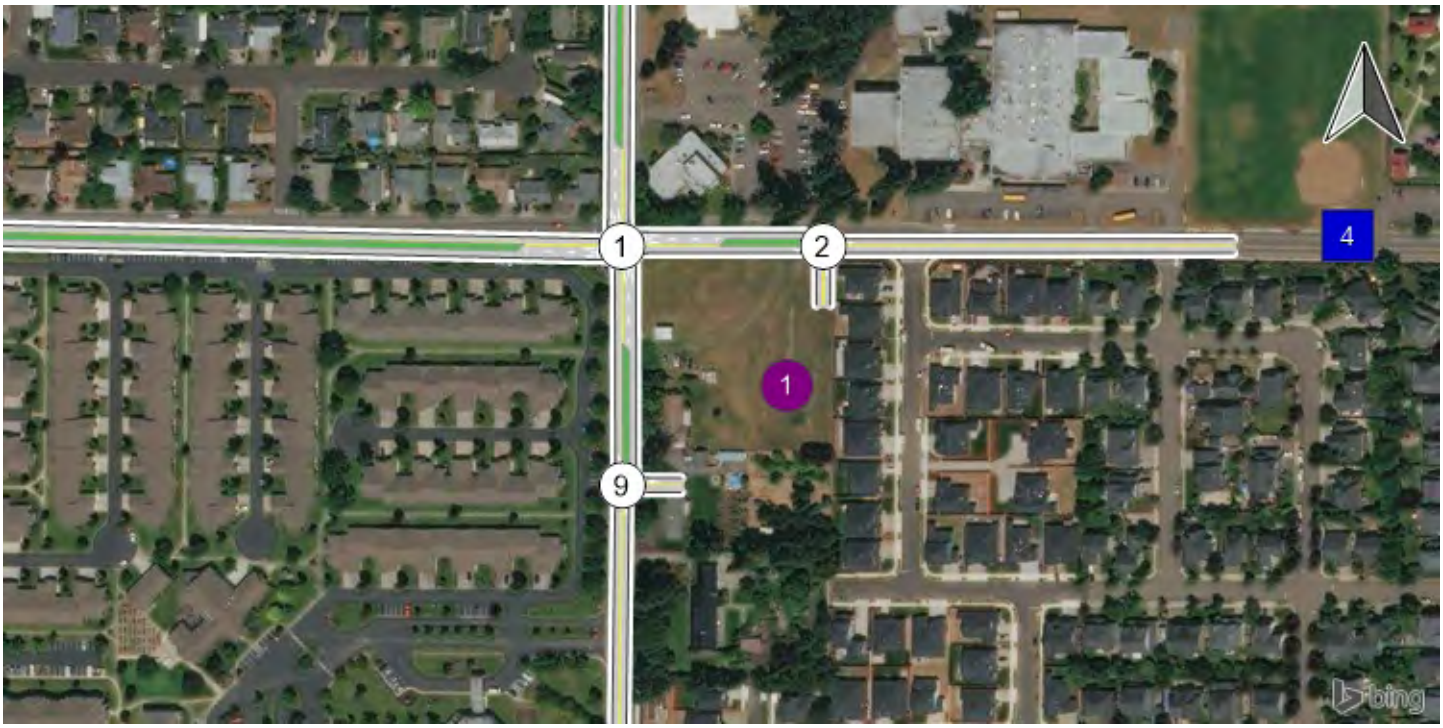


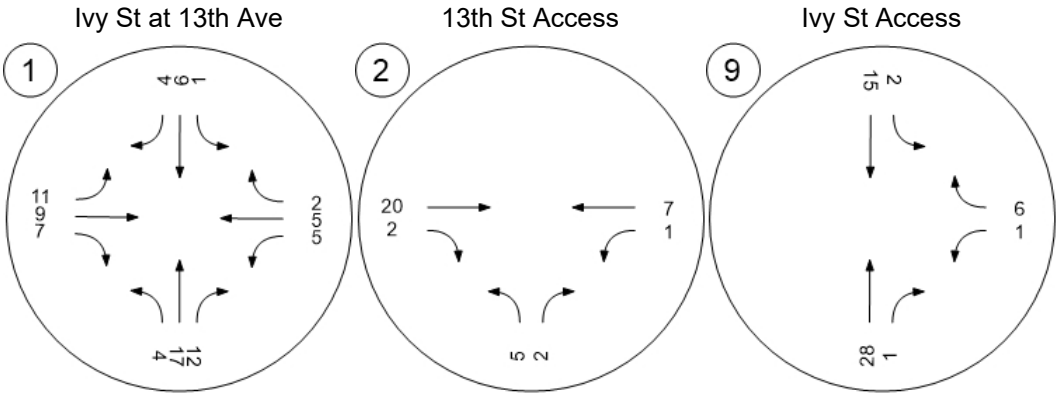
Report Figure 2a: Traffic Volume - Base Volume



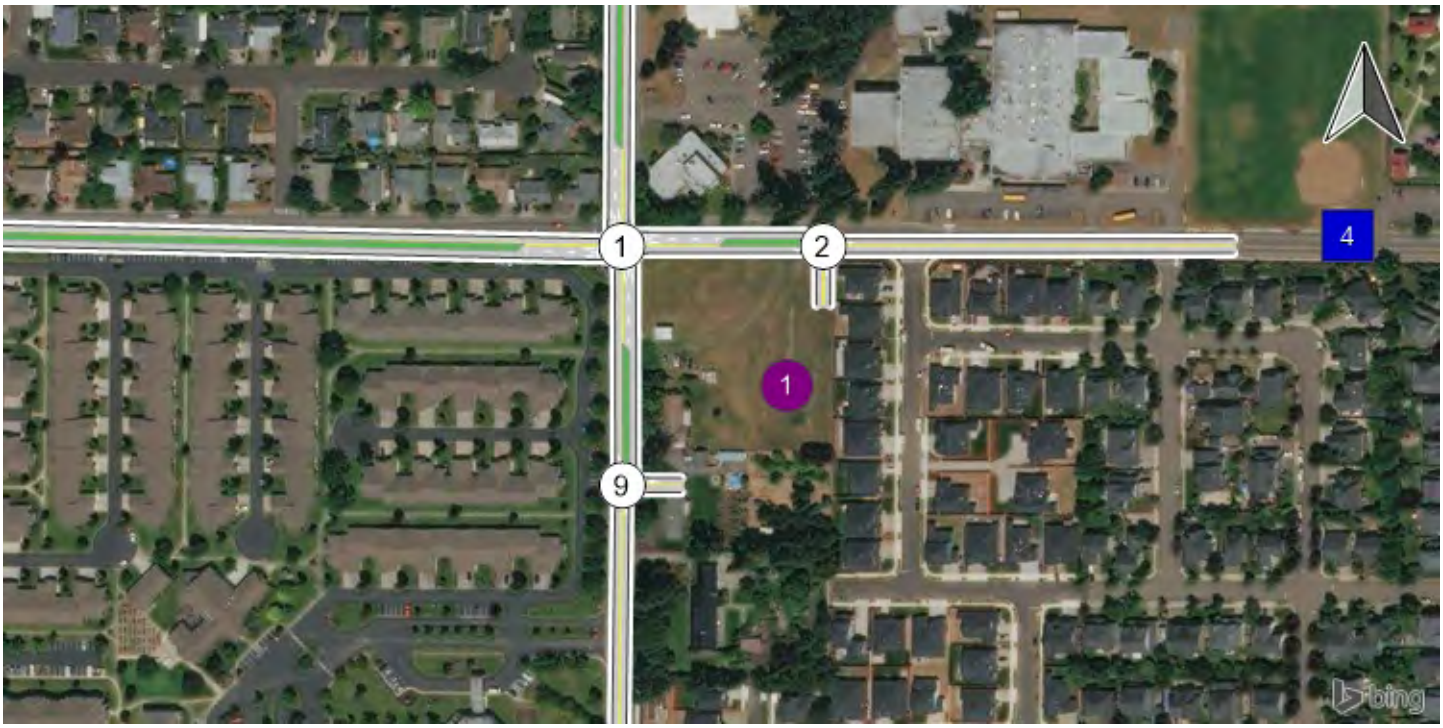


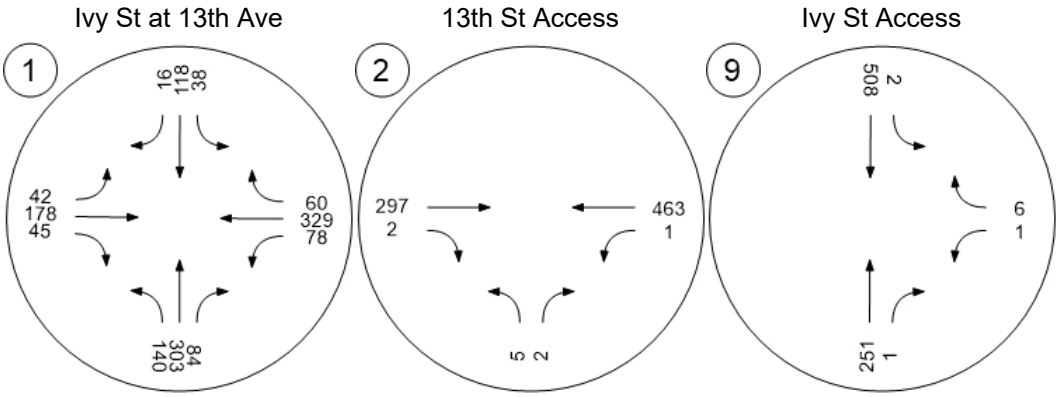
Report Figure 2d: Traffic Volume - Net New Site Trips



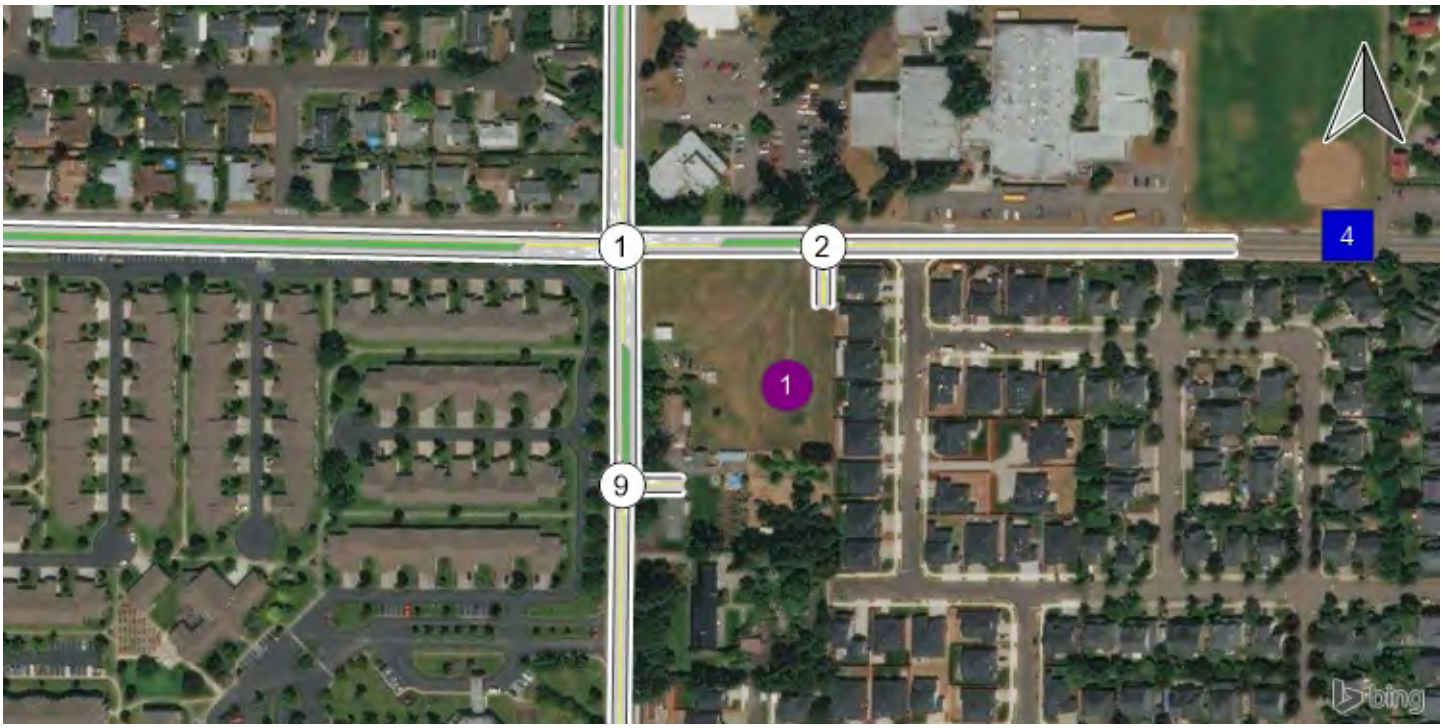


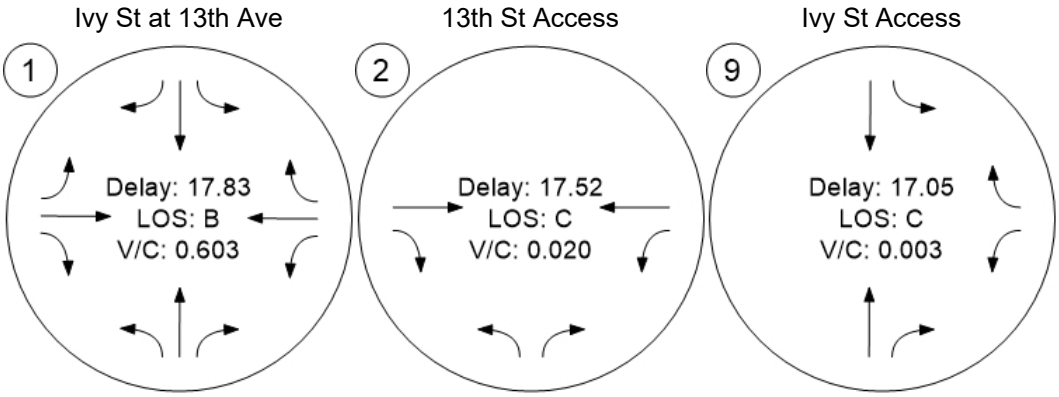
Report Figure 2f: Traffic Volume - Future Total Volume





Report Figure 3: Traffic Conditions





Ivy St Townhomes TIA - 18-387

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Scenario 14 PM Future w 2 Accesses (38)
7/6/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ivy St at 13th Ave	Signalized	HCM 6th Edition	WB Left	0.578	22.3	C
2	13th St Access	Two-way stop	HCM 6th Edition	NB Left	0.011	17.8	C
9	Ivy St Access	Two-way stop	HCM 6th Edition	WB Left	0.005	24.0	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Ivy St at 13th Ave

Control Type:	Signalized	Delay (sec / veh):	22.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.578

Intersection Setup

Name				Ivy St			13th Ave			13th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00	125.00	100.00	100.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name				Ivy St			13th Ave			13th Ave		
Base Volume Input [veh/h]	41	92	55	65	252	29	38	182	93	102	136	39
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	0.90	0.90	0.90	3.20	3.20	3.20	0.40	0.40	0.40
Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	11	9	2	19	13	8	8	7	13	11	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	68	145	89	97	387	55	63	274	143	162	210	58
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	39	24	26	105	15	17	74	39	44	57	16
Total Analysis Volume [veh/h]	74	158	97	105	421	60	68	298	155	176	228	63
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	42	0	0	42	0	0	48	0	0	48	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	40	40	40	40	42	42	42	42
g / C, Green / Cycle	0.45	0.45	0.45	0.45	0.46	0.46	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.09	0.16	0.10	0.29	0.07	0.29	0.21	0.18
s, saturation flow rate [veh/h]	820	1572	1021	1661	970	1572	855	1642
c, Capacity [veh/h]	241	705	402	745	398	727	275	759
d1, Uniform Delay [s]	31.92	16.33	23.48	19.26	21.83	18.26	33.81	15.80
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.16	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.27	1.44	1.57	4.28	0.20	1.28	2.49	0.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.31	0.36	0.26	0.65	0.17	0.62	0.64	0.38
d, Delay for Lane Group [s/veh]	35.19	17.77	25.05	23.54	22.03	19.55	36.30	16.12
Lane Group LOS	D	B	C	C	C	B	D	B
Critical Lane Group	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	1.62	3.60	1.84	8.27	1.06	7.12	3.88	3.88
50th-Percentile Queue Length [ft]	40.46	90.04	46.02	206.77	26.38	177.88	96.97	96.93
95th-Percentile Queue Length [veh]	2.91	6.48	3.31	12.99	1.90	11.49	6.98	6.98
95th-Percentile Queue Length [ft]	72.83	162.07	82.84	324.68	47.48	287.24	174.55	174.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	35.19	17.77	17.77	25.05	23.54	23.54	22.03	19.55	19.55	36.30	16.12	16.12
Movement LOS	D	B	B	C	C	C	C	B	B	D	B	B
d_A, Approach Delay [s/veh]	21.69			23.81			19.87			23.72		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	22.34											
Intersection LOS	C											
Intersection V/C	0.578											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	2.543	2.323	2.286	2.353
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	844	844	978	978
d_b, Bicycle Delay [s]	15.02	15.02	11.76	11.76
l_b,int, Bicycle LOS Score for Intersection	2.653	3.077	3.154	3.065
Bicycle LOS	B	C	C	C

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: 13th St Access

Control Type:	Two-way stop	Delay (sec / veh):	17.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.011

Intersection Setup

Name			13th Ave			
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			13th Ave			
Base Volume Input [veh/h]	0	0	302	0	0	277
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.40	0.40	0.40	0.40	0.40	0.40
Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	1	13	6	2	22
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	1	454	6	2	426
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	123	2	1	116
Total Analysis Volume [veh/h]	3	1	493	7	2	463
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	17.79	11.38	0.00	0.00	8.36	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.04	0.04	0.00	0.00	2.23	2.23
95th-Percentile Queue Length [ft]	0.93	0.93	0.00	0.00	55.77	55.77
d_A, Approach Delay [s/veh]	16.19		0.00		0.04	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.08					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 9: Ivy St Access

Control Type:	Two-way stop	Delay (sec / veh):	24.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	288	0	0	447	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	2.40	2.00	2.00
Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	24	1	6	33	1	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	444	1	6	686	1	4
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	121	0	2	186	0	1
Total Analysis Volume [veh/h]	483	1	7	746	1	4
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.01	0.01	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.37	0.00	24.02	11.28
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.00	0.00	6.07	6.07	0.04	0.04
95th-Percentile Queue Length [ft]	0.00	0.00	151.72	151.72	0.92	0.92
d_A, Approach Delay [s/veh]	0.00		0.08		13.83	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.10					
Intersection LOS	C					

Ivy St Townhomes TIA - 18-387

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Scenario 14 PM Future w 2 Accesses (38)
7/6/2018

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	68	145	89	97	387	55	63	274	143	162	210	58	1751

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
2	13th St Access	3	1	454	6	2	426	892

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
9	Ivy St Access	444	1	6	686	1	4	1142

Ivy St Townhomes TIA - 18-387

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Scenario 14 PM Future w 2 Accesses (38)
7/6/2018

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Ivy St at 13th Ave	Final Base	41	92	55	65	252	29	38	182	93	102	136	39	1124
		Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	8	11	9	2	19	13	8	8	7	13	11	1	110
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**68**	**145**	**89**	**97**	**387**	**55**	**63**	**274**	**143**	**162**	**210**	**58**	**1751**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
2	13th St Access	Final Base	0	0	302	0	0	277	579
		Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	3	1	13	6	2	22	47
		Other	0	0	0	0	0	0	0
		Future Total	**3**	**1**	**454**	**6**	**2**	**426**	**892**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
9	Ivy St Access	Final Base	288	0	0	447	0	0	735
		Growth Rate	1.46	1.46	1.46	1.46	1.46	1.46	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	24	1	6	33	1	4	69
		Other	0	0	0	0	0	0	0
		Future Total	**444**	**1**	**6**	**686**	**1**	**4**	**1142**

Ivy St Townhomes TIA - 18-387

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Report File: J:\...\PM Future w 2 Access (38).pdf

Scenario 14 PM Future w 2 Accesses (38)
7/6/2018

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: Ivy St Townhouses	Apts	ITE 220	Units	0.560	38.000	63.00	37.00	13	8	21	11.86
7: Mayberry Group	Homes	ITE 210	Homes	0.990	89.000	63.00	37.00	55	33	88	49.72
8: Beck Pond	Homes	ite 210	Homes	0.990	69.000	63.00	37.00	43	25	68	38.42
					Added Trips Total			**111**	**66**	**177**	**100.00**

Ivy St Townhomes TIA - 18-387

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Report File: J:\...\PM Future w 2 Access (38).pdf

Scenario 14 PM Future w 2 Accesses (38)
7/6/2018

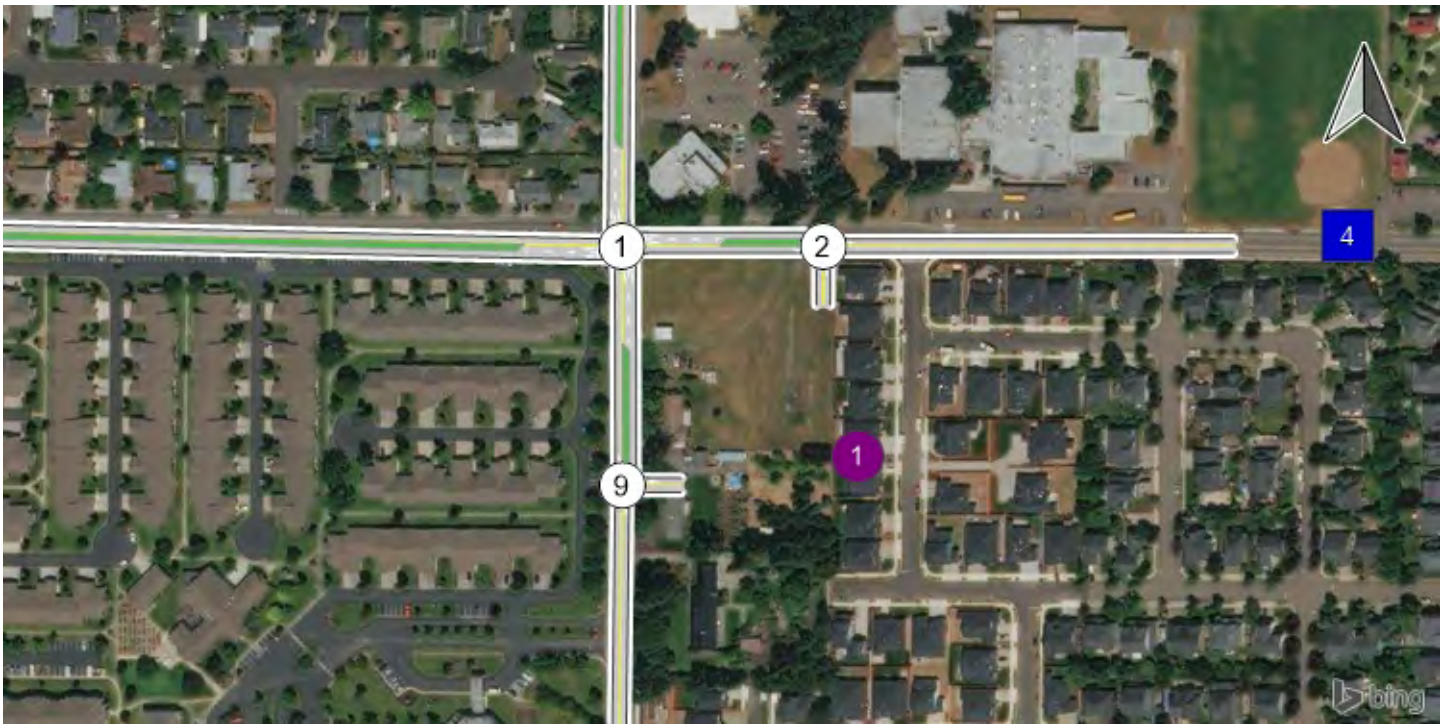
Trip Distribution summary

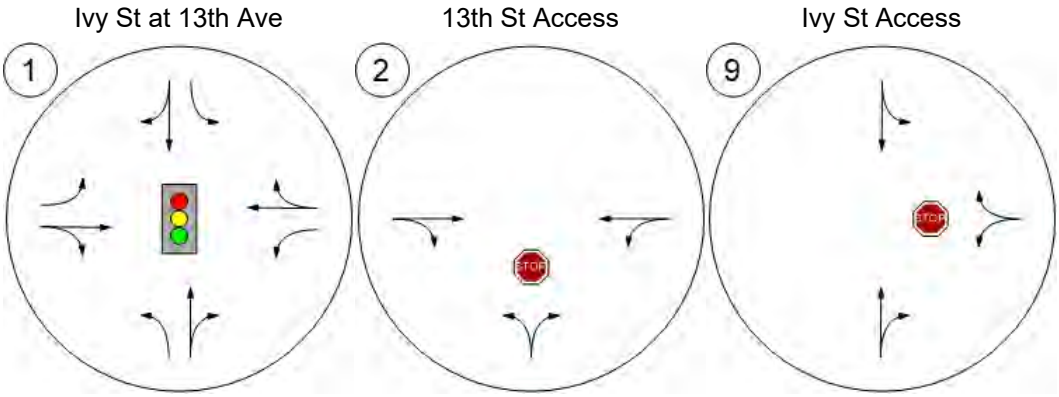
Zone / Gate	Zone 1: Ivy St Townhouses			
	To Ivy St Townhouses:		From Ivy St Townhouses:	
	Share %	Trips	Share %	Trips
7: Mayberry Group	0.00	0	0.00	0
8: Beck Pond	0.00	0	0.00	0
2: Gate	35.00	5	35.00	3
3: Gate	30.00	4	30.00	2
4: Gate	20.00	3	20.00	2
5: Gate	15.00	2	15.00	1
6: Gate	0.00	0	0.00	0
Total	**100.00**	**14**	**100.00**	**8**

Zone / Gate	Zone 7: Mayberry Group			
	To Mayberry Group:		From Mayberry Group:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
8: Beck Pond	0.00	0	0.00	0
2: Gate	35.00	19	35.00	11
3: Gate	30.00	17	30.00	10
4: Gate	20.00	11	20.00	7
5: Gate	15.00	8	15.00	5
6: Gate	0.00	0	0.00	0
Total	**100.00**	**55**	**100.00**	**33**

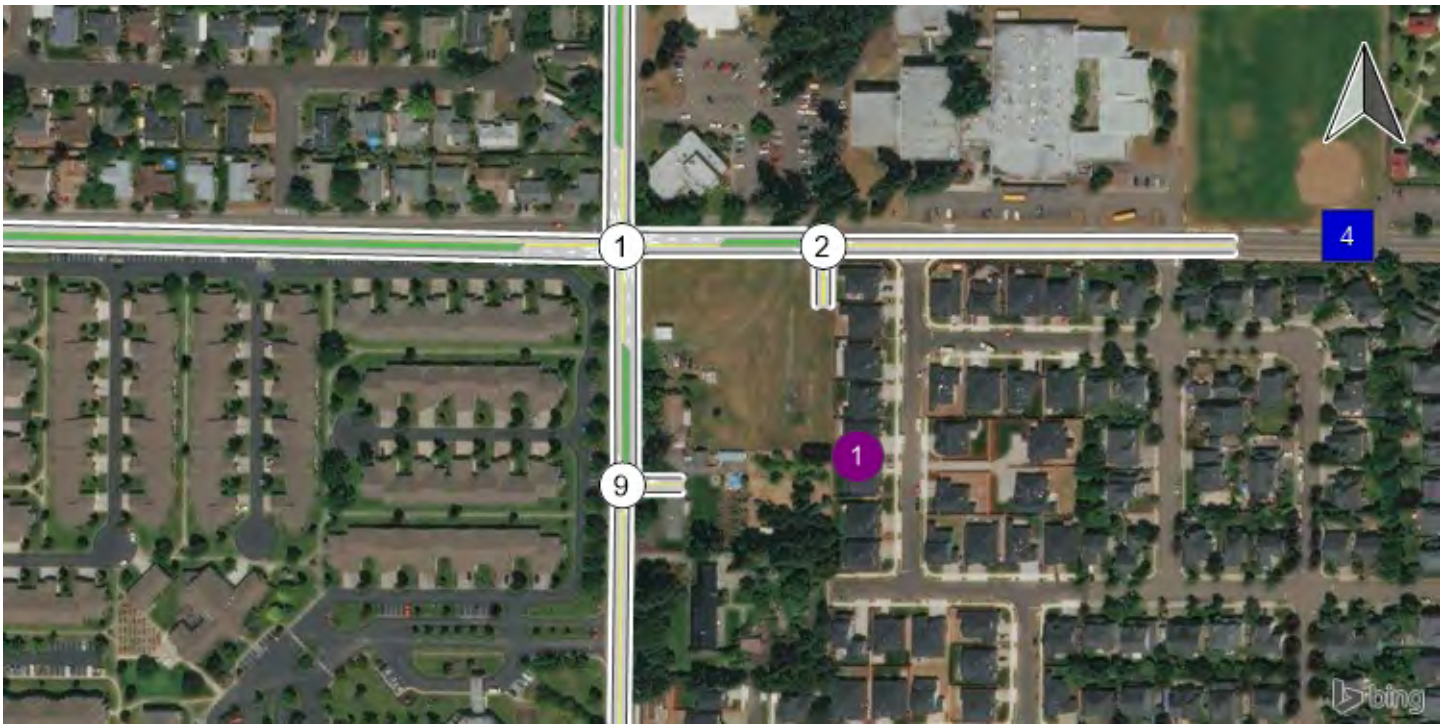
Zone / Gate	Zone 8: Beck Pond			
	To Beck Pond:		From Beck Pond:	
	Share %	Trips	Share %	Trips
1: Ivy St Townhouses	0.00	0	0.00	0
7: Mayberry Group	0.00	0	0.00	0
2: Gate	35.00	15	35.00	8
3: Gate	30.00	13	30.00	8
4: Gate	20.00	9	20.00	5
5: Gate	15.00	6	15.00	4
6: Gate	0.00	0	0.00	0
Total	**100.00**	**43**	**100.00**	**25**

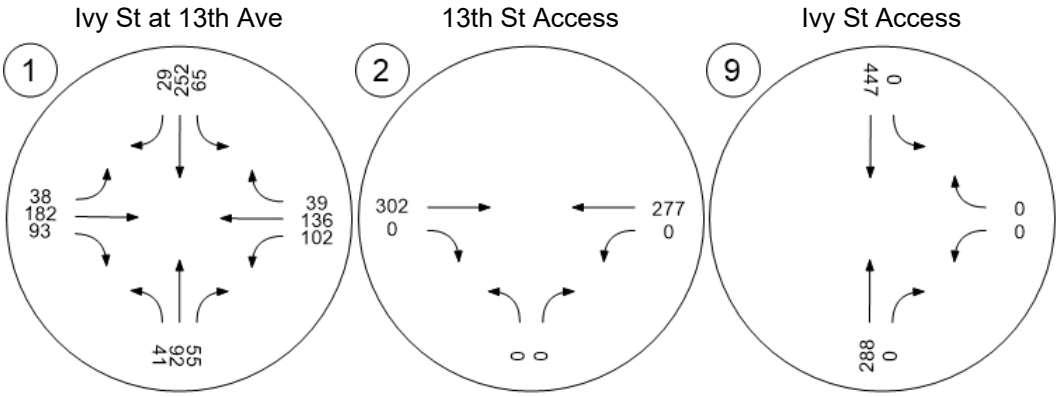
Report Figure 1: Lane Configuration and Traffic Control



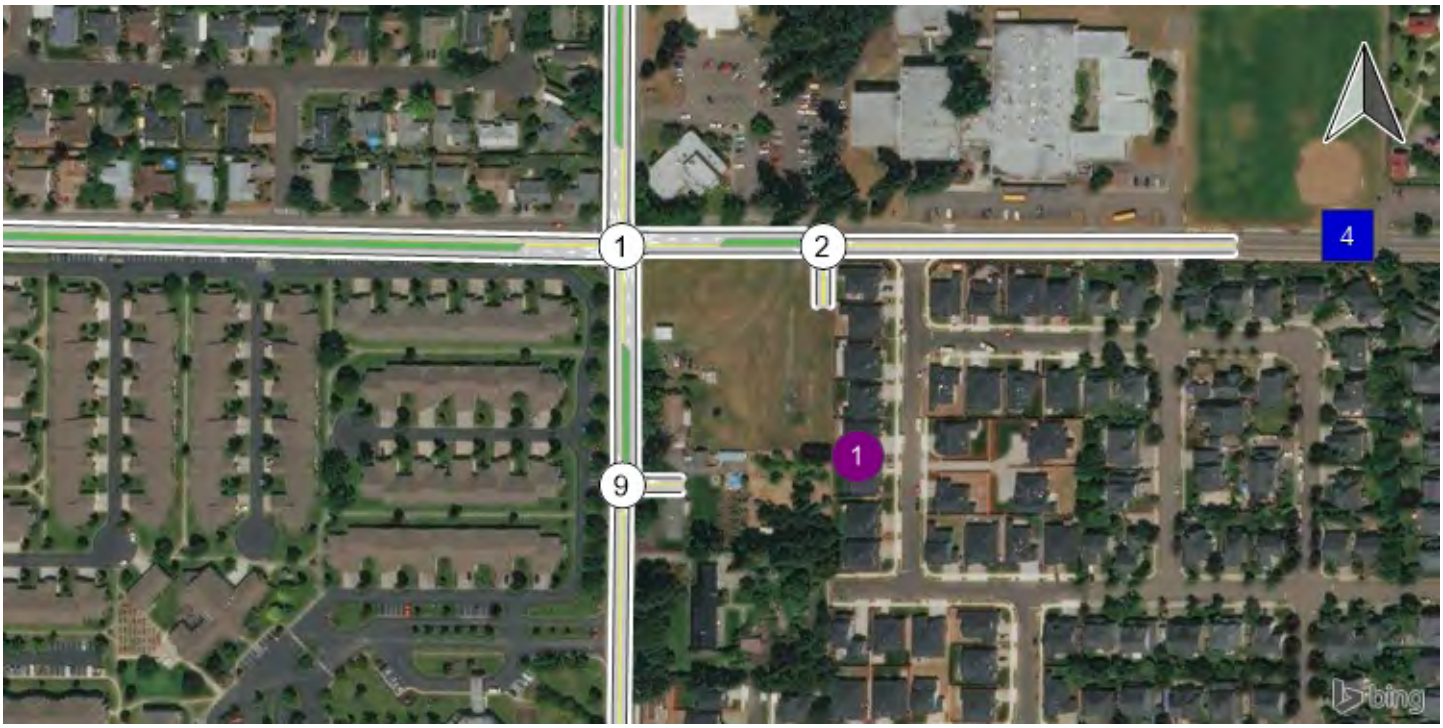


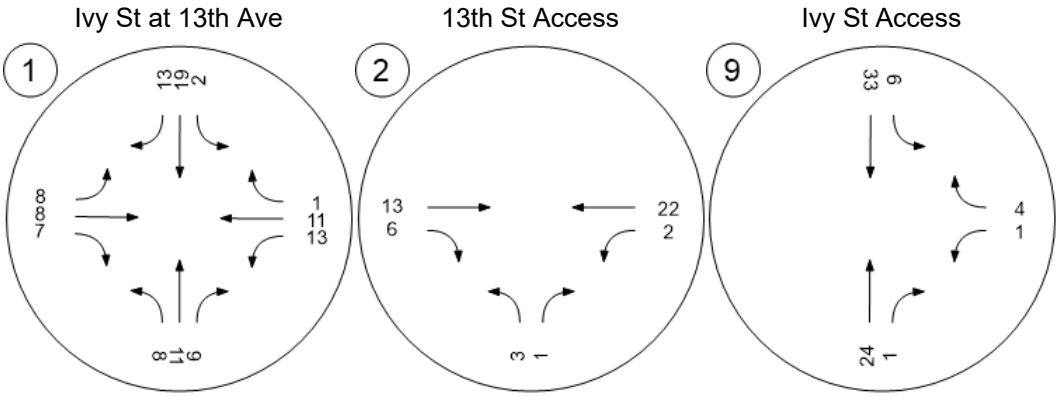
Report Figure 2a: Traffic Volume - Base Volume



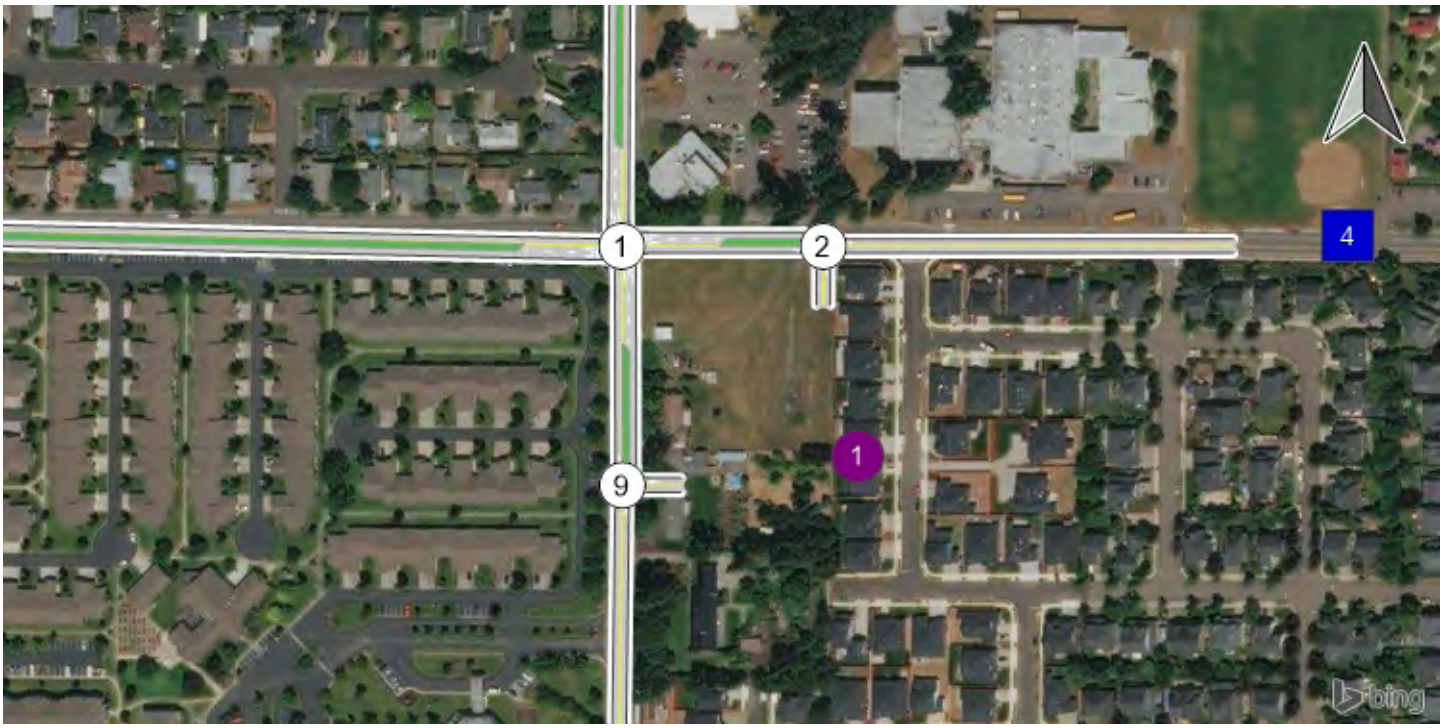


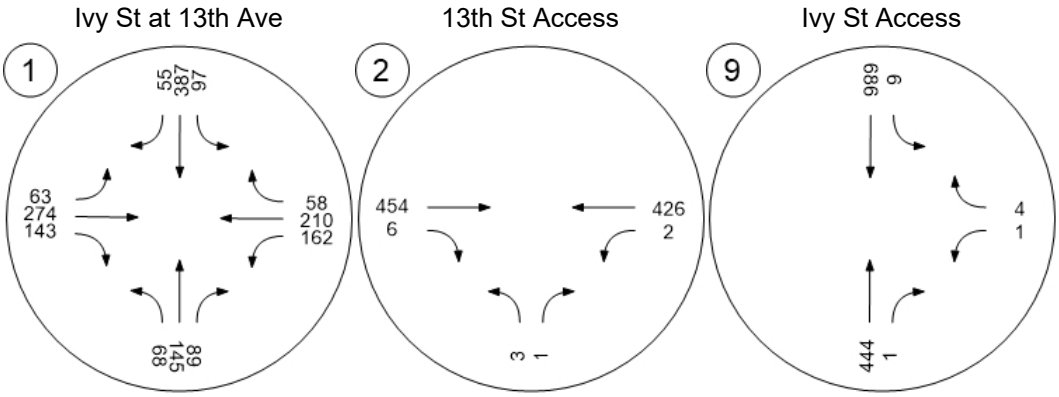
Report Figure 2d: Traffic Volume - Net New Site Trips



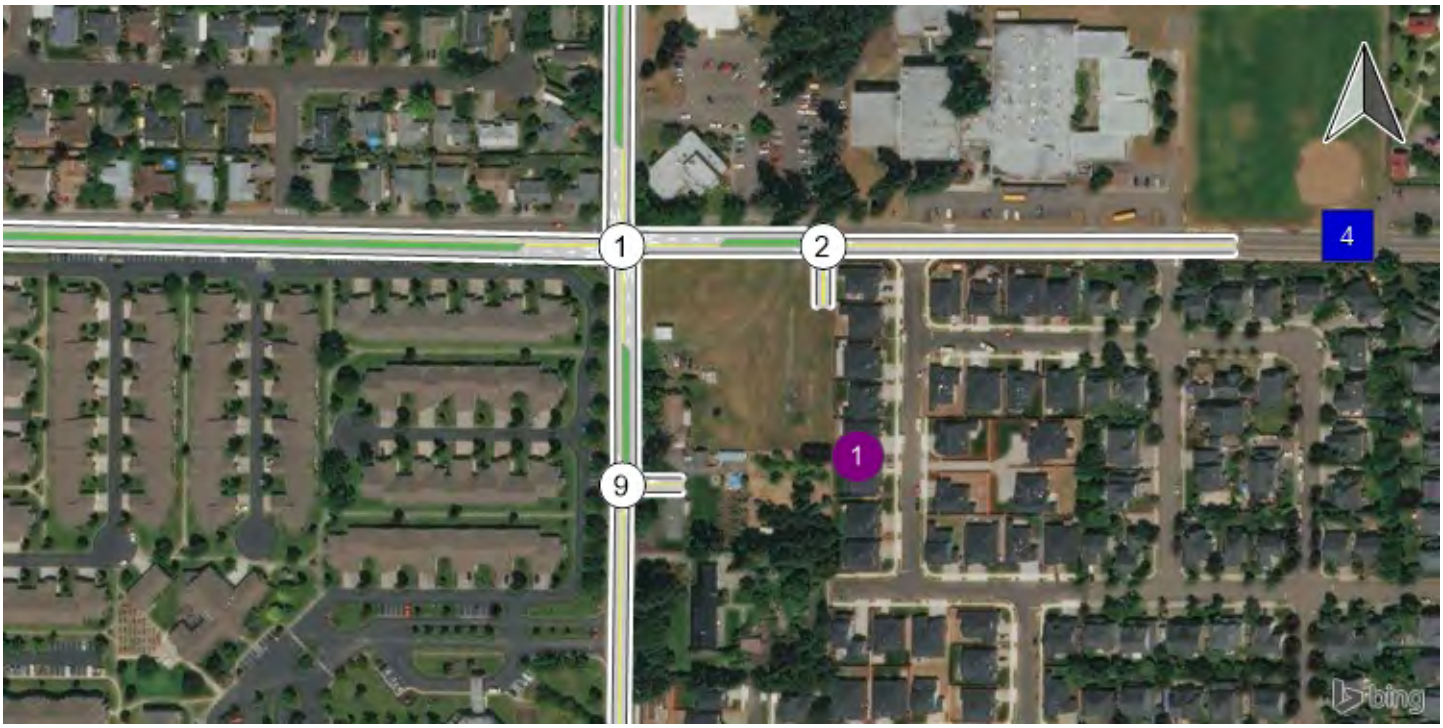


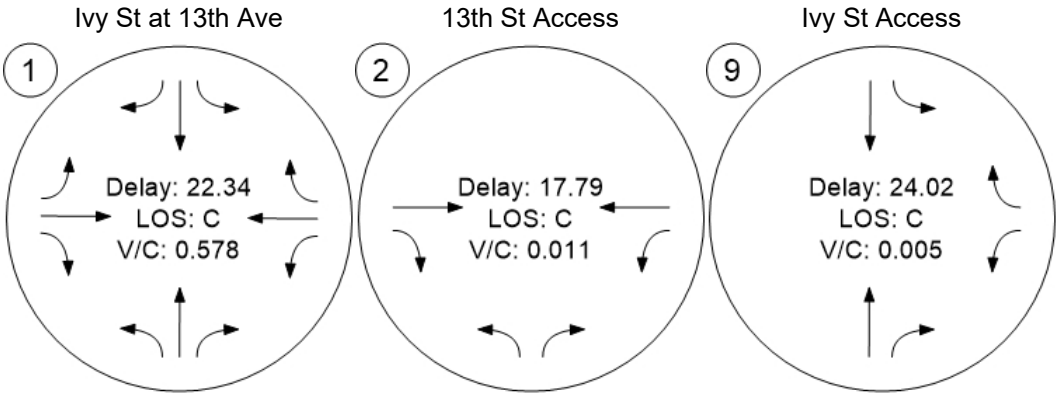
Report Figure 2f: Traffic Volume - Future Total Volume





Report Figure 3: Traffic Conditions





Laney Fouse

From: Laude Hill <laudehill@canby.com>
Sent: Friday, June 22, 2018 10:45 AM
To: PublicComments
Subject: Application DR 18-03/CUP 18-03?PUD18-01?Sub 18-02 Canby Townhomes

The traffic at this intersection is heavy now. There are the traffic in and and out of the swim center and adult center, the school walking and vehicle traffic ass well as the normal street traffic from heavily traveled routes in and out and through Canby. Putting townhouses at this corner without providing safe entry and exit that does not impede the highly used intersection seems impossible.

Laney Fouse

From: Micki A Paul <micmac@canby.com>
Sent: Thursday, June 21, 2018 5:44 PM
To: Micki A Paul
Cc: PublicComments
Subject: Project Name: CANBY TOWNHOMES

Proposing to build Town Homes at one of the busiest intersections in Canby just doesn't seem feasible. The State DTD won't allow access off Highway 170 (Ivy St.) knowing what chaos that would create so why doesn't the City realize it would be no different on 13th St.? The intersection is already clogged in the morning and evening with Commercial traffic, School buses for three schools, the Public Pool and the Adult Center.

We need more parking and Town Homes wouldn't alleviate that problem but add to the need. The spot where they are proposed is used quite frequently for overflow from numerous functions at the Schools, Adult Center and Pool.

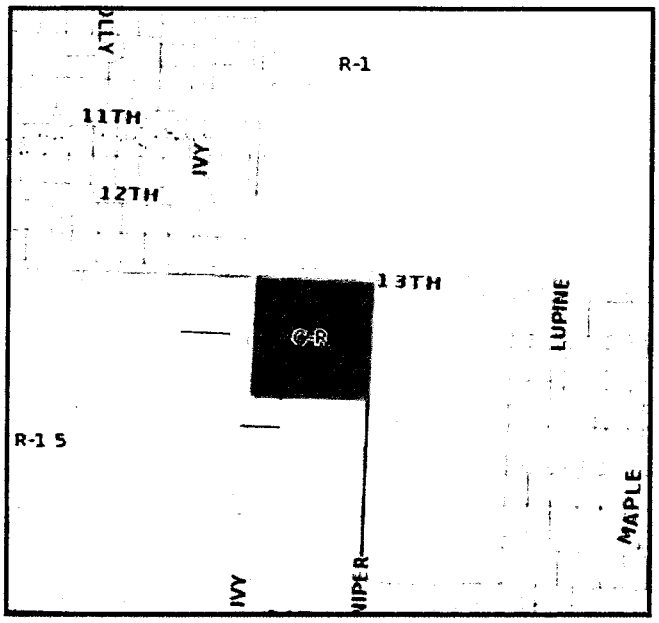
A Church would be more conducive to the neighborhood.

Location: 1300 S Ivy Street
City File # DR 18-03/CUP 18-03/PUD 18-01/SUB 18-02

City of Canby

PUBLIC HEARING NOTICE & REQUEST FOR COMMENTS
City File No.: **DR 18-03/CUP 18-03/PUD 18-01/SUB 18-02**
Project Name: **CANBY TOWNHOMES**
PLANNING COMMISSION PUBLIC HEARING DATE:
MONDAY, July 9, 2018 AT 7 PM, COUNCIL CHAMBERS

The purpose of this Notice is to invite you to a Planning Commission Public Hearing and to request your written comments regarding a Site & Design Review (Type III), Conditional Use Permit (Type III), Planned Unit Development (Type III), and Subdivision (Type III) application (**DR 18-03/CUP 18-03/PUD 18-01/SUB 18-02).** Applicant proposes to develop a 2.59 acre site, zoned CR (Residential- Commercial) with 30 townhomes (single-family dwellings with common-wall construction) at the corner of SE 13th Avenue and S Ivy Street.



Location: 1300 S Ivy Street (See property hatched in red on map at left).

Tax Lots: 41E04DA04800

Lot Size & Zoning: 112,280.4 SF (2.59 acres), C-R Residential-Commercial

Property Owners: Willamette Capital Investments, LLC

Applicant: Butch Busse

Application Type: Site & Design Review (Type III), Conditional Use Permit (Type III), Planned Unit Development (Type III), and Subdivision (Type III)

City File Number: DR 18-03/CUP 18-03/PUD 18-01/SUB 18-02

Contact: David Epling, Associate Planner at 503-266-0686

Comments due – If you would like your comments to be incorporated into the City's Staff Report, please return the Comment Form by Wednesday, June 27, 2018. Written and oral comments can also be submitted up to the time of the Public Hearing and may also be delivered in person during the Public Hearing.

What is the Decision Process? The Planning Commission will make a decision after the Public Hearing. The Planning Commission's decision may be appealed to the City Council.

Where can I send my comments? Written 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, June 29, 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
- 16.10 Off Street Parking
- 16.20 R-2 High Density Residential Zone
- 16.24 C-R Residential-Commercial Zone
- 16.36 Planned Unit Development
- 16.42 Signs
- 16.43 Outdoor Lighting Standards
- 16.46 Access Limitations on Project Density
- 16.49 Site & Design Review
- 16.50 Conditional Uses
- 16.62 Subdivision Applications
- 16.64 Subdivision Design Standards
- 16.72 PUD Applications
- 16.89 Application & Review Procedures
- 16.120 Parks, Open Space, & Recreation Land

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

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

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Application: **DR 18-03/CUP 18-03/PUD 18-01/SUB 18-02 Canby Townhomes**

COMMENTS:

This property being across from a School and ball field should be considered. Then across the street are people who are seniors as well as the senior center and pool. By the School Considering you want to build 30 units which will mean 60-100 people with 30 to 60 Cars School is a busy place with lots of traffic.

It does not seem fair to the people who live there as well as the ones who live near Living Hope Village has its own traffic problems we dont need more.

It seems to me you should consider being able to find property in a area where there wont be so much congestion. Please dont build there.

NAME: Mee Gossen
EMAIL: maegossen@canbyo.com
ORGANIZATION/BUSINESS/AGENCY:
ADDRESS: 1441 S Ivy St unit 712
PHONE # (optional): 503 266 2335
DATE: June 19 2018

PLEASE EMAIL COMMENTS TO
PublicComments@canbyoregon.gov

Thank You!

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: _____
AGENCY: _____
DATE: _____

May 25, 2018

FROM: Judith D Keeney
jbkeeney@canby.com
503-516-0368

TO: City of Canby – Mayor and City Council
City of Canby – Administrator
City of Canby – Planning Director

RE: Townhome Development by Multi/Tech Engineering Services, Inc.
SE Ivy St and SE 13th Avenue in Canby, OR 97013

The proposed townhome development for the property located at SE Ivy St. and SE 13th Ave. in Canby, Oregon demonstrates lack of consideration for current citizens/property owners and foresight by the City of Canby and its land use planning agencies. The concerns expressed in the May 23rd edition of the Canby Herald by the Dinsmore Estates 2 HOA are both accurate and alarming. Locating 38 multi-family two-story units on this piece of property will greatly change this neighborhood, lower property values of surrounding homes and significantly destroy the quality of life currently enjoyed by the tax-paying citizens and property owners in this neighborhood. No park area is planned within this development. No allowances for increased traffic and increased demand for parking appear to have been considered.

This property is located in the heart of the Canby Swim Center, Canby Adult Center, Ackerman School, playing fields, and Legacy Park which already generate increased traffic at certain times of the day on a constant basis. Additionally, the nearby Hope Village campus includes several age-related facilities that often requires access for emergency vehicles. First responders could be greatly impacted and hindered by this development and their ability to provide efficient life-threatening services to the population already located within this area of the city of Canby.

Next, the issue of farm equipment accessing S. Ivy Street and S 13th Avenue is significant – especially in the spring, summer and fall seasons. Increased population and traffic in this area will most certainly have a negative impact upon jobs, income and future agricultural land use in this portion of the community.

Also, think of the added impact of the 90 single family home subdivision proposed nearby off of S Fir Street – you're very quickly creating a traffic nightmare!!

Please reconsider this development! It is not too late for the mayor, city council, and land use planners to recognize the many and various negative aspects of this proposed townhome development and deny the ability to move it forward. Please give consideration for the area's home owners, Hope Village residents, patrons of the Canby Swim Center and Canby Adult Center, users of the playing fields, Ackerman School, and Legacy Park.

Praying you will make a wise, educated, and well-thought-out decision.

Judith D Keeney

Date: May 18, 2018

To: City of Canby Council and Planning Committee

From: Bill Hill – Resident and President of Dinsmore Estates 2 HOA

331 S.E. 13th Place

Canby, Oregon 97013

503-657-1986

Re: Proposed 38 unit townhome development – 13th & Ivy, Canby, Oregon

I attended the developer meeting regarding a proposed housing development located at 1300 S. Ivy Street, (corner of 13th and Ivy) this past Tuesday, May 15, 2018. The meeting was held at the library at Ackerman Middle School at the invitation from Multi/Tech Engineering Services, Inc. from Salem, Oregon.

My wife and I live at 331 S.E. 13th Place, Canby, Oregon and I am the president of the Dinsmore Estates 2 HOA. Part of our community rests next to the proposed development. Hope Village is just across Ivy. Directly across 13th Avenue sits the Canby Adult Center and Ackerman Middle School. Ivy and 13th Avenue converge into a very busy intersection with heavy traffic that include school buses, cars, trucks, farming equipment, bicyclists, pedestrians and school children every day.

The Developer is proposing 38 multi-family townhomes on a postage stamp size lot that has no safe entrance or exit from either busy street. First responders will be severely incumbered and the potential residents and their guests will not have adequate parking which will lead to over-flow onto our residential neighborhood plus that of the Adult Center and Middle School across the road.

Many events are held at the Canby Adult Center, Swim Center and Ackerman School including the playing fields and children's play area. Sometimes overflow parking from those events use the lot currently up for development. The impact from the proposed high-density housing will greatly detract from the existing quality of life sought by those living in and using the facilities adjacent. The consensus of the homeowners (Tofte Farms Estates, Dinsmore Estates 1 and 2, Hope Village and others) feel the impact from this high-density housing will greatly detract from the existing quality of life here and also for those using the center, pool, school and fields. This type of housing is incongruous with the existing single-family homes running the length of 13th Avenue.

I appeal to the leaders of our City to step up and stop this inappropriate development before it begins. Thirty-eight two story townhomes jammed onto a lot with inadequate access is not only a fire and safety hazard, it also causes parking and traffic problems that are dangerous so close to a four-way stop in an already busy intersection. It was suggested that the City consider, instead, purchasing the property for future city use and repurpose it now for over-flow parking for the many activities that take place at the Adult, Swim and School facilities.

CLACKAMAS COUNTY

DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
DEVELOPMENT SERVICES BUILDING
150 BEAVERCREEK ROAD | OREGON CITY, OR 97045

MEMORANDUM

TO: Bryan Brown
FROM: Kenneth Kent, Development Engineering
DATE: December 13, 2017
RE: Pre-Application, 39-Unit Townhouse Apartments
4-1E-4DA-4800

This office has the following comments pertaining to this proposal:

1. The proposed 39-unit multi-family development is located on a property located at the southeast corner of SE 13th Street and S Ivy Street. SE 13th Street is under the jurisdiction of the City of Canby. S Ivy Street is under the jurisdiction of Clackamas County and is classified as a major arterial roadway. It appears the city has a single arterial roadway classification, indicating both SE 13th Street and S Ivy Street as arterial roads. However, Clackamas County designates S Ivy Street a major arterial. Access spacing standards on a major arterial restrict access within 400 feet of a signalized intersection. The project frontage is approximately 342 feet in length. Access on the S Ivy street frontage will not be permitted for the proposed development. If required by the fire department, a gated emergency vehicle access is acceptable on S Ivy Street.

2. The minimum improvement on the S Ivy Street frontage includes right-of-way and paved width for a 3-lane arterial street section.

3. The applicant shall dedicate approximately 10 feet of right-of-way along the entire site frontage on S Ivy Street and verify by a professional survey that a 40-foot wide, one-half right-of-way width exists.

4. The applicant shall grant an 8-foot wide public easement for sign, slope and public utilities along the entire frontage of S Ivy Street.

5. The applicant shall design and construct improvements along the entire site frontage of S Ivy Street to arterial roadway standards, per Clackamas County Roadway Standards, Standard Drawing C140. These improvements shall consist of:

a. A one half-street improvement with a minimum paved with of 25 feet from the centerline of the right-of-way. The structural section shall be designed and constructed per Standard Drawing C100 for an arterial roadway.

b. Inbound and outbound tapers shall be provided per Section 250.6.4 of the Clackamas County Roadway Standards.

c. Standard curb, or curb and gutter if curbline slope is less than one percent, with the curb face located 18 feet from the centerline of the right-of-way.

d. A 5-foot wide sidewalk behind a 5-foot wide landscape strip, including street trees shall be constructed along the entire site frontage. Where the sidewalk does not connect to sidewalk on adjacent property, the end of the sidewalk requires a concrete ADA compliant curb ramp, providing a transition from the new sidewalk to the edge of pavement.

e. Dual curb ramps shall be provide at the SE 13th Street and S Ivy Street intersection, constructed per Standard Drawing S910. The designer shall complete the county ADA Assessment Checklist and provide a copy with the improvement plans. The county has adopted the following curb ramp design and construction standards:

Feature	Design Standard	Construction Standard
Ramp Slope	7.5%	8.33%
Ramp Cross Slope	1.5%	2.0%
Landing (turning space) Cross Slope	1.5%	2.0%

f. Storm drainage facilities in conformance with City of Canby Standards and *Clackamas County Roadway Standards* Chapter 4. Any surface water runoff from the site to the S Ivy Street right-of-way shall be detained outside of the right-of-way in conformance with *Clackamas Roadway Standards*.

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Application: **Canby Townhomes, 1300 S Ivy St, (DR 18-03/CUP 18-03/PUD 18-01/SUB 18-02)**

COMMENTS:

This proposed to build 38 townhomes is not what the founder of Canby wanted this property to be used for. Originally Tatte family wanted to donate this to be used as a larger family center property. Traffic issues and lack of parking for 30 units will have a terrible impact on the all ready busy 13th st And even more at the 13th + Ivy intersection. As residents who live in this area we see the traffic problems with School buses + "CAT" services at the pool, senior center and Ackerman School. Privacy issues with a large 2 story building proposed will also impact property values in the adjoining development + neighborhoods. Perserve Canbys livability standards and reject this proposed developement of "CANBY TOWNHOUSES"

NAME: Rick Brown
EMAIL: brownco1@frontier.com
ORGANIZATION/BUSINESS/AGENCY:
ADDRESS: 1395 S. Larch ST Canby Or 97013
PHONE # (optional):
DATE: 8/22/18

PLEASE EMAIL COMMENTS TO
PublicComments@canbyoregon.gov

Thank You!

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:
AGENCY:
DATE:

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Application: **Canby Townhomes, 1300 S Ivy St, (DR 18-03/CUP 18-03/PUD 18-01/SUB 18-02)**

COMMENTS:

Please have the wall around the townhouse property be brick and the style of the brick wall going around Dinsmore Estates on 13th Ave. This will provide continuity and aesthetically it is more pleasing.

NAME: Patricia Swanson
EMAIL: patriciaswanson9801@yahoo.com
ORGANIZATION/BUSINESS/AGENCY:
ADDRESS: 1455 S. Locust St. Canby
PHONE # (optional): 503-477-0537
DATE: 8/22/18

PLEASE EMAIL COMMENTS TO
PublicComments@canbyoregon.gov

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Application: **Canby Townhomes, 1300 S Ivy St, (DR 18-03/CUP 18-03/PUD 18-01/SUB 18-02)**

COMMENTS:

As a resident of Hope Village, and trying to cross the Ivy + 13th on foot or with walker or scooter, is scary now. With more traffic at this location will make it worse. The seniors are not as fast, even with lights. Changing the time allowed for crossing might help. Just an idea

NAME: Hazel McGuire
EMAIL:
~~ORGANIZATION/BUSINESS/AGENCY:~~
ADDRESS: 1546 S FIR ST APT 103
PHONE # (optional): 503-266-1315 (MEADOWS)
DATE: 8/23/-18

PLEASE EMAIL COMMENTS TO
PublicComments@canbyoregon.gov

Thank You!

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☐ No Comments

NAME:
AGENCY:
DATE:

Date: Monday, July 9, 2018

To: City of Canby Planning Commission

From: Bill Hill, Resident and President of Dinsmore Estates 2 H.O.A

331 SE 13th Place, Canby, Oregon 97013

Re: Canby Townhome Proposal

Intersection of N. Ivy Street and 13th Avenue

Clarifications:

1. The current posted development proposal and city responses identify three (3) different numbers of dwellings: 30, 38 and 39. What is the correct number?

2. The development proposal – plot diagram presents the townhomes as being two story buildings. It has been recommended by the city to **reduce** the distance from adjacent Dinsmore Estates 2 (DE2) property line from 20 feet to 15 feet. The development plot map presents either patio or balconies located at the back of the proposed buildings. As a result, the distance encroachment maybe an additional 5 feet toward the DE2 property line. It appears that the back- yard privacy of the DE2 homeowners will be compromised. How will this matter be resolved?

3. Public Safety – There is heavy traffic on 13th Avenue as well as N. Ivy. The type and volume consist of vehicular, farming, bicycles and school buses. Then there are pedestrians consisting of school children, senior citizens and others who cross the intersection all year long. It's especially busy during the school year. Two schools, the Canby Adult Center, Hope Village and single-family homes line 13th Avenue from one end of Canby to the other. The recent traffic studies determine that all traffic from the proposed corner development will be routed through DE2, a single-family home development, with children, pets and homeowners enjoying the neighborhood for activities and family guest parking. A traffic study only deals with numbers not safety. The development proposal presented provides two (2) parking spaces per unit. If we use the 30 unit model and times that by 2, a potential of sixty (60) additional vehicles of any type (cars, SUVs, trucks, motorhomes) would be routed through or down our home -lined streets or 13th Avenue, with spill-over parking day and night. How will the developer and city deal with that?

4. Perimeter landscape – If this proposal does become a reality then the outside perimeter should be consistent with the neighboring communities. A brick wall should be required to match that of other developments touched by this proposal, including but not limited to DE2.

Laney Fouse

From: Janet Sanders <sandershandtherapy@gmail.com>
Sent: Monday, July 09, 2018 10:58 AM
To: PublicComments
Subject: Regarding Canby Townhomes 1300 S. Ivy St. (File No. DR 18-03/PUD 18-01/SUB 18-02)

Canby City Planning Commission-

Please see comments below prior to the Planning Commission Public Hearing 07/09/2018;

1) Confusion to the public remains...3 weeks ago the City Planner said that the development had to reduce to a max of 30 units due to traffic issues. As of 1 week ago, the developer refused a requested meeting with the Dinsmore 2 HOA given the plan changes. At that time the developer insisted that nothing had changed, the site plan would remain at 36-38 units. This hearing clearly states site and design review of 30 units. How can the public know exactly what zoning to address when the information is always conflicting? Are we to look at the Medium Density standards that the plan doesn't meet, or the, even greater High Density issues?

2) We learned from the City Planner that this developer/engineer has employed Exceptions (including Variances and Conditional Uses) in their plan that are sometimes allowed if there is a grade (like a hill) that cannot be changed or a natural barrier. In this development, this is not the case and should not be allowed. The variances are only being employed so that they can cram as many units as possible onto a 2.59 acre plot of land. Why would the City give them these special Conditional Uses (16.24.020) including but not limited to;

a) Minimum lot area (16.24.030) Does not meet Med density minimum 5000 sq feet. It does not meet the lot area exceptions (16.18.030)

b) Currently designed at 15 foot rear setbacks vs the standard of 20 feet. If less than 20 feet Site obscuring landscaping shall be required. The last plan that we received did not include any visual landscaping buffer as requested at the community meeting. Besides our current fence, that we paid for, we are requesting mature landscape visual buffering on their side of the fence.

c) Does not meet the minimum width and frontage or street yard setback of 20 feet with the driveways (16.24.030 B and C)

d) Multi-family requires 150 sq ft of recreation area per dwelling unit (16.20.030F4) and the storm water retention area does not qualify. 30 units would require at least 4500 sq ft of recreation area. They list 1 picnic area. Sq Ft?

e) Access to the property is limited to 1 in/out driveway. 30 units permitted per 1 access per standards (16.46.010). This would put that driveway directly in alignment/conflict with the driveways to the Adult community center and Ackerman MS. (16.64.015). Minimum spacing of roadways for a collector street are standardized at 250 ft. Does this meet standard?

f) Roads are to be a minimum of 28 feet in width with parking on one side of the street only. Currently designed at 25 and 26 feet in street width. Due to the multitude of driveways there is very little space left for street parking. All units with 2 drivers would HAVE TO use their 1-car garage and their 1-car driveway to accommodate their cars.

Per table 16.10.050, Multi-family dwellings (if allowed R-2 zoning) 2 spaces per 2-bedroom or larger unit. One additional guest parking shall be provided for every 5 units. For 30 units, that would require 6 extra parking spaces, for 38 it would require 8 extra spaces. On the most current plan, they have 5 COMPACT spaces.

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Application: **DR 18-03/CUP 18-03/PUD 18-01/SUB 18-02 Canby Townhomes**

COMMENTS:

- Concern of inadequate parking within development
- Concern over increased traffic on 13th (Results of study??)
- Concern for safety of school children on 13th & on Ivy
- Concern for access by emergency responders
- Concern about height of units blocking homes on Larch
- Concern for privacy of residence on Larch

NAME: Craig & Barb Carpenter
EMAIL: craigbarb.carpenter@yahoo.com
ORGANIZATION/BUSINESS/AGENCY: —
ADDRESS: 325 SE 13th Place Canby OR
PHONE # (optional): —
DATE: 7-3-18

PLEASE EMAIL COMMENTS TO
PublicComments@canbyoregon.gov

Thank You!

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

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Application: **DR 18-03/CUP 18-03/PUD 18-01/SUB 18-02 Canby Townhomes**

COMMENTS:

We are mostly concerned about the TRAFFIC Impact at the intersection of SW. 13th Ave and SW. Ivy. We live on the corner of these two and already have been almost rearended backing out. Also the high volume of Truck traffic and people speeding. The Speed limit is way to high for a residential

NAME: Brian & Valerie Newberg
EMAIL:
ORGANIZATION/BUSINESS/AGENCY:
ADDRESS: 110 SW 13th Ave. Canby
PHONE # (optional): 503-651-6475
DATE: 6-27-18

PLEASE EMAIL COMMENTS TO
PublicComments@canbyoregon.gov

Thank You!

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AGENCY: _____
DATE: _____

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, June 27, 2018.
Written and oral comments can be submitted up to the time of the Public Hearing and may also be delivered in person during the Public Hearings.

Application: **DR 18-03/CUP 18-03/PUD 18-01/SUB 18-02 Canby Townhomes**

COMMENTS:

Some laws allow citizens to make decisions that are legal, but not right. A decision that diminishes the quality of life in a community needs to be examined closely.

Our water system and infrastructure (schools, traffic flow, etc.) are already problematic. Why make them worse?

The development of 30 townhomes on 2.59 acres at 1300 S Ivy serves no purpose other than monetary profit.

NAME: KATHERINE LOSCH
EMAIL: NO COMPUTER
ORGANIZATION/BUSINESS/AGENCY: N/A
ADDRESS: 1441 S. IVY UNIT 402
PHONE # (optional):
DATE: 6-26-18

PLEASE EMAIL COMMENTS TO
PublicComments@canbyoregon.gov

Thank You!

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:
AGENCY:
DATE:

Date: June 26, 2018

To: Canby Planning Commission

From: Bill Hill, President and Resident

Dinsmore Estates 2 Homeowners Association

331 S.E. 13th Place

Re: Canby Townhome Development

1300 S Ivy Avenue

Comments Regarding Proposed Development Project

Community Safety – The vehicular traffic up and down 13th Avenue and South Ivy is a concern with regard to public safety for potential townhome resident families, school children that cross 13th Avenue over to Ackerman Middle School and area residents going to and from the Canby Adult Center and Swim Center across from the proposed development site. With Hope Village directly across the Avenue on Ivy and the daily caravan of school buses that traverse in and out along 13th Avenue (Canby and North Marion Schools) the roadway is always extremely busy. Add to the mix trucks and farm equipment that use Ivy to enter Canby from Molalla. First Responders would have difficulty accommodating the Townhome residents on the very small space given 38 units with garages getting equipment in and out. Parking is another issue in that there is often over-flow parking within the school grounds, along 13th Avenue and even in Dinsmore Estate 2 residential streets. The owners and guests of the townhomes are likely to find it necessary to park within our neighborhood which would be very inconvenient for our homeowners.

Property Alignment – It is my understanding that the development applicants are seeking to reduce the property line set back from the standard 20' to 15'. If approved, this would virtually put townhomes in the backyards of Dinsmore Estate 2 homes that sit along the development zone. A sound barrier should be required to protect our homeowner properties and a brick street wall that matches the others along Ivy and 13th Avenue should also be installed to be consistent with others living in Tofte Farm homes as well.

Dwelling Consistency – For the entire length of 13th Avenue from one end of Canby to the other, there are only single-family homes. The residents here strongly support either building single-family homes appropriate for the given lot size or for spill-over parking for the many activities that constantly use the Swim, Adult and Middle School facilities and grounds.

In conclusion – This type of housing is not in keeping with the types of existing area homes. Safety comes first with regard to current residents, including school children and senior citizens.

Laney Fouse

From: blke90@yahoo.com
Sent: Monday, June 25, 2018 9:26 PM
To: PublicComments; phi nguyen
Subject: CANBY TOWNHOMES

Amy & Phi Nguyen
1355 S Larch St
Canby, OR 97013

This letter is to frustrate my concerns for the proposal to build townhomes behind my property.
I moved to Canby in 2016 to get away from a congested and over populated Portland and live in a more peaceful and quiet Canby area. So far, life have been great and peaceful until this recent news of a townhouse proposing to be to built right behind my backyard. Not only will I have no more privacy at all anymore, they will be more noise, congestion and tons of traffic. I'm sure others in the neighborhood feel the same. There is also a middle school in the area where kids attend and we wouldn't want to increase traffic in the area for kids safety sake. Please take this into consideration before moving forward.

Thank you,

-Phi Nguyen
blke90@yahoo.com

CURRAN-McLEOD, INC.
CONSULTING ENGINEERS
6655 S.W. HAMPTON STREET, SUITE 210
PORTLAND, OREGON 97223

June 25, 2018

MEMORANDUM

TO: Public Comments
City of Canby

FROM: Hassan Ibrahim, P.E.
Curran-McLeod, Inc.

RE: **CITY OF CANBY**
CANBY TOWNHOMES (DR 18-03/CUP 18-03/PUD 18-01/SUB 18-02)

We have reviewed the submitted preliminary plans on the above mentioned project and have the following comments:

1. SE 13th Avenue is a City arterial street, the existing half street right-of-way width along the site frontage is 20 feet, additional 10 feet of right-of-way dedications will be required to match the adjoining properties. Half street improvements will be required along the entire site frontage to include curbs placed at 22 feet from ROW centerline and 6-foot wide curb tight concrete sidewalks, street lights and landscaping in conformance with section 2.207 of the City of Canby Public Works Design Standards dated June 2012. A 12-foot wide public utility easement will also be required.

2. S Ivy Street is a County arterial street, all of the required half street improvements and right of way dedications shall be in conformance with Clackamas County Design Standards.

3. All interior streets are private and shall have a commercial driveway approaches at the access point with the public streets (SE 13th Avenue and S Ivy Street) consisting of 6" concrete thickness over 4" of crushed rock and reinforcements or Mesh wire welded wire fabric.

4. The proposed access point on SE 13th Avenue does not meet the required access spacing of 330 feet from any driveway or public road as per the City Transportation System Plan (TSP). The submitted plan shows the proposed access location to be 280 feet more or less as calculated. Given the geometry of this site, there is no feasible option to meet the required access spacing and we recommend the City approves the access location via a variance and without compromising the safety at the intersections.

PHONE: (503) 684-3478 E-MAIL: cmi@curran-mcleod.com FAX: (503) 624-8247

5. The private street geometric configuration shall allow for the fire truck turning movements and parking requirements as determined by Canby Fire District.

6. Street trees shall be selected from the City approved tree list. The street tree ordinance requires the developer to pay the City $200 per tree for installation and one (1) year period maintenance, the property owners will take over all of the responsibilities after that date.

6. A demolition permit will be required from Clackamas County prior to demoing the existing structures on-site.

7. Sanitary sewer lines exist on SE 13th Avenue and S Ivy Street. An 8-inch public sanitary sewer line will be acceptable within the private street. However, the City requires a minimum of 15-foot wide public sewer easement dedicated to the City of Canby.

8. Private storm drainage discharge shall be disposed on-site, the design methodology shall be in conformance with the City of Canby, June 2012 Public Works Standards.

9. Storm drainage analysis will be required to demonstrate how the storm runoff generated from the new impervious surfaces will be disposed. If drywells (UIC) are used as a means to discharge storm runoff from the private streets, they must meet the following criteria: The UIC structures location shall meet at least one of the two conditions: (1) the vertical separation distance between the UIC and seasonal high groundwater is more than 2.5 feet or (2) the horizontal separation distance between the UIC and any water well is a minimum of 267 feet in accordance of the City of Canby Stormwater Master Plan, Appendix "C", Groundwater Protectiveness Demonstration and Risk Prioritization for Underground Injection Control (UIC) Devices. The storm drainage report shall be in conformance with the requirements as stated in Chapter 4 of the City of Canby Public Works Design Standards dated June 2012.

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

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

12. The traffic impact analysis prepared by Associated Transportation Engineering & Planning, Inc. dated June 15, 2018 concludes that SE 13th Avenue and S Ivy Street intersection will continue to function at Level of Service B as a result of this development. No mitigations are needed.

Should you have any questions or need additional information, please let me know.

Laney Fouse

From: Joshua Eleen <jteleen@aol.com>
Sent: Sunday, June 24, 2018 9:40 PM
To: PublicComments
Subject: Lot Line Adjustment 661 NW 4th Ave City File# LLA 18-01

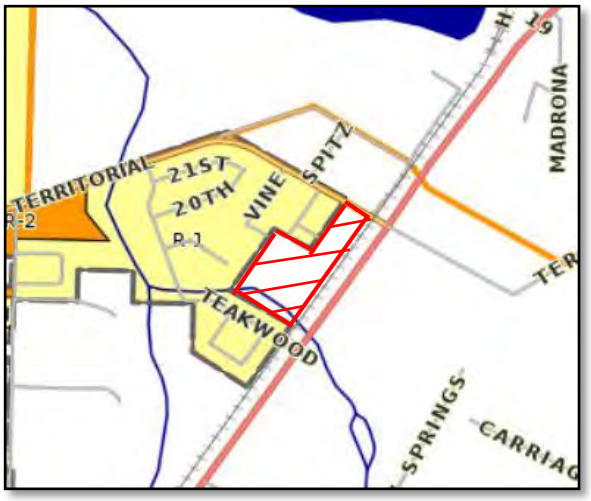
The city should not allow this lot line adjustment to occur. The houses in these few blocks have been around well over 80 years. The lot line on the property hasn't been a concern since the house was built in 1946. So why is it now? This is just the first step to for allowing another duplex or triplex to be built in an older neighborhood. This is not only going to create another eye sore in a old neighborhood, but it's going to kill the property value of all the other homes in the area. We need to keep some of this old small town together. Please do not allow this lot line adjustment. Thank you

Joshua Eleen

City of Canby

ANNEXATION AND ZONE CHANGE STAFF REPORT
FILE #: ANN 18-02/ZC 18-02
Prepared for the September 10, 2018 Planning Commission Meeting

LOCATION: 2265 and 2285 NE Territorial Road on the south side of NE Territorial Road approximately 175 feet west of State Highway 99E and approximately 160 feet east of N. Walnut Street, and bordered on the east by the Union Pacific Railroad right-of-way.



ANNEXATION PROPERTY SIZE: The site is approximately 9.55 gross acres and 8.91 net acres, (minus .64 acres of Street R.O.W.
TAX LOTS: Tax Lots 31E27DB00800, 31E27DB00900, and 31E27AD00601
COMPREHENSIVE PLAN DESIGNATION: Low Density Residential (LDR)
CURRENT ZONING DESIGNATION: Clackamas County: Rural Residential Farm Forest-5 Acre (RRFF-5)
PROPOSED ZONING: Low Density Residential (R-1)
OWNER: Frank and Kathleen Cutsforth
APPLICANT: FRANK CUTSFORTH
REPRESENTATIVE: PAT SISUL – SISUL ENGINEERING
APPLICATION TYPE: Annexation/Zone Change (Type IV)
CITY FILE NUMBER: ANN 18-02/ZC 18-02

I. PROJECT OVERVIEW & EXISTING CONDITIONS

The property owners of three different parcels located in the northeast portion of the City of Canby's Urban Growth Boundary (UGB) propose annexation into the city limits. The property owners also propose a zone change application to change the current zoning from the Clackamas County RRFF-5 (Rural Residential Farm Forest-5) to the City of Canby's R-1, Low Density Residential Zone. The subject parcels are contiguous and are bordered on the west by developed subdivisions that include, The Meadows Subdivision, Walnut Creek Subdivision,

and Willow Creek Estates on the west and south. Property to the north and east is outside the Canby City limits. The annexation will also extend into NE Territorial Road and incorporate 20 feet of right-of-way along the property frontage. The applicant is requesting a zone change to R-1 (Single-Family Residential) which is consistent with the current Canby Comprehensive Plan designation. The applicant indicates that the "blue line" stream delineated on available maps is a drainage that flows under State Highway 99E and through adjacent Willow Creek Estates Subdivision and feeds into Willow Creek. The applicant stated that the drainage will be incorporated as such in the future subdivision. Before future development of the properties, the applicant should contact DSL (Division of State Lands) to see if any permits or mitigation is required from that agency.

Generally, the City of Canby's annexation ordinance requires either a Development Concept Plan (DCP) or a Development Agreement (DA) for properties that are a part of an annexation request. However, these particular properties are not designated on the City of Canby Annexation Development Map (16.84.040(A)). Subsequently, submittal of a Development Agreement or a DCP is not required for this application. However, the applicant submitted a conceptual development plan for future development of the parcels into a 20 lot subdivision for single-family homes.

The 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 Low Density Residential use. The designation corresponds to the zone changes requested by the applicant. The area is currently within Clackamas County's jurisdiction and is presently zoned as Rural Residential Farm Forest-5 Acre (RRFF-5). This zone change is to rezone the properties involved to the City zoning of R-1 zone in accordance with the corresponding City Comprehensive Plan Map land use designation. The zone designation will take effect when the properties are annexed as indicated in this application.

II. ATTACHMENTS

- **A.** Application Forms
- **B.** Submitted Written Narrative and materials
- **C.** Neighborhood Meeting Notes/Attendance List/Notification Letter
- **D.** Pre-Annexation application Meeting Minutes
- **E.** Survey of Property to Be Annexed and Legal Description of Private Property and adjacent NE Territorial Road right-of-way to be annexed
- **F.** Maps: Aerial Vicinity Map, Assessor Map, Canby Comprehensive Plan Map, Proposed Annexation Area Map
- **G.** Transportation Planning Rule Analysis - contracted by applicant with City's Consulting Traffic Engineer
- **H.** 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

City of Canby Comprehensive Plan Policies and Implementation Measures
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*

This criteria is not applicable.

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*

This Criteria is not applicable.

Findings: A DCP or a DA is not required for this application. However, the applicant provided information to address City of Canby future infrastructure requirements for the area, and

work has gone into planning for how the defined area would best be developed and served by all necessary infrastructure.

A traffic analysis was not required for this proposal. However, DKS Engineering provided a Transportation Planning Rule Analysis, to address traffic impacts associated with anticipated full development of the properties in accordance with the applicable zoning designation and the planning rule. The analysis, dated June 4, 2018 summarized how the requirements of Oregon Administrative Rule (OAR) 660-012-0060, the Transportation Planning Rule (TPR), are met for the subject properties. The surrounding roadways and intersections were found to have sufficient capacity to accommodate the proposed annexation, and zone change in the Development Agreement Area. The Transportation Planning Rule requirements of State Statue were determined to have been met as documented in the Analysis.

All necessary utility services are generally available or can be made available through service line extensions to the annexation area. The submitted narrative indicates the options for necessary infrastructure to serve this area. The applicant stated that development of future infrastructure will be addressed with submittal of a subdivision application at a later date. The applicant is aware that park SDC's are required in lieu of park dedication.

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 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 three-year supply of developable land based on population data obtained from Portland State University Population Research Center and existing available platted and proposed lots. The applicant provided an analysis that included subdivisions that are preliminarily approved and have yet to record platted lots. The applicant determined that approximately 212 new households units for single-family lots in the next three years, and the total lots projected to be available, including the Cutsforth annexation lots, amount to 191 lots for low density development, which is a 2.7 year supply. The applicant assumed a third of the projected new households would be medium or multi-family development. The applicant factored in an absorption rate into the submitted data. Based on available information, the city has had an average absorption rate of nearly 45 lots per year for the last 10 years, but that number has increased to 67 for the last 3 year average. This corresponds closely to the projected

household need to serve our population growth of 71 homes per year. This indicates the supply of readily available platted lots with all necessary infrastructures is projected to be just below a three-year supply if no other subdivisions are approved. 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 subdivision is anticipated to develop the site at a higher net density per acre that exists at this time. However, potential traffic generation has been shown to be within the capabilities of the surrounding road system with no mitigation necessary. The subject parcels are bordered on the north by unincorporated property under Clackamas County jurisdiction but within the UGB. City parkland and additional neighborhood parks and a walking trail are situated nearby. This will add to the social and aesthetic effects of development on the subject properties and the future development of the neighborhood livability. Staff does not foresee any significant impacts from the proposal or need to mitigate any identified concerns. Staff agrees the annexation and future development of the subject parcels is consistent with development 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 subject parcels are not in a Development Concept Plan Area or designated within a Development Agreement Area of the Canby Annexation Development Map. The applicant is aware of the obligation to provide dedications for future public facilities and the construction of streets and water and sewer lines as well as other related development. Information provided demonstrated how utility infrastructure will be made available, and unmanageable capacity issues were not identified by City departments and agencies during this review process. The applicant will pay park SDC's in lieu of park dedication. Tree resources will be made available as part of a Street Tree Plan during the subdivision process. 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 applicant's narrative and the file is sufficient, and the applicable criteria can be met.

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 applicant's conceptual site plan for future development as findings. All necessary utility extensions are available to serve this area when development occurs after annexation, and connections to existing facilities are available and preferred depending on the development project. Staff finds that with appropriate conditions of approval, information provided in the file is sufficient and this criterion 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 file indicated that most infrastructure facilities in the northeast Canby area are expected to be built by individual developers. Staff finds that information in the file 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 zoning designation of the Comprehensive Plan. The only change is a zoning map amendment to change the zone to R-1, and the Zone Map Change Application that accompanies this annexation request will satisfy this criteria. 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 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 zone 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 (TPR) 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 TPR Analysis that confirmed the proposed annexation met provisions of the TPR. The findings of the analysis determined that the zone change contemplated and the resulting traffic, if developed as allowed, was assumed for trip modeling in the 2010 Canby Transportation System Plan, 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 August 20, 2018, at least 20-days prior to the hearing. Prior notification and neighborhood meetings were completed during application process. The site was posted with a Public Hearing Notice sign by August 31, 2018. A notice meeting ordinance requirements of the public hearings was published in the Canby Herald on September 5, 2018. A pre-application meeting was held May 1, 2018. These findings indicate that all processing requirements have been satisfied with this application to date.

Public 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 August 20, 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:

Persons/Agency/City Department Comments.

Comments were received from the following persons/agencies/city departments:

Conclusion Regarding Consistency with the Standards of the

Canby Municipal Code

Staff concludes, as detailed in the submittal from the applicant and as indicated here 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. The proposed annexation can meet the approval criteria set forth in CMC 16.84.040.A.
3. The zoning of the property, if annexed, should be R-1 as indicated in the application and pursuant to the approval criteria set forth for map amendments in CMC 16.54.040.
4. The proposed annexation's requested zoning district of R-1 is in conformance with the Comprehensive Plan Land Use Plan Map.
5. The application complies with all applicable Oregon Revised Statutes.
6. There are sufficient public and private agency utility and service capacity to serve the site at the anticipated development intensity.
7. In accordance with the UGMA with Clackamas County, this proposed annexation application includes a description of the adjacent NE Territorial Road right-of-way with the properties proposed for annexation.
8. It has been determined that existing land available is below a three-year supply of developed R-1 zoned lots within the City limits. Therefore, the supply does not exceed a three-year supply and there is a "need" for low density residential zoned land for development at this time.

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 18-02/ZC 18-02 be approved and,
2. Upon annexation, the zoning of the subject properties be designated as R-1 as indicated by the Canby Comprehensive Plan Map.

Application for Annexation

2265 & 2285 NE Territorial Road

Canby, OR 97013

Owner/Applicants:	Frank & Kathleen Cutsforth 2285 NE Territorial Road Canby, OR 97013 Phone: (503) 266-2016
Location	2265 & 2285 NE Territorial Road South of NE Territorial Road, west of Highway 99E and the Union Pacific Railroad. North and west of Willow Creek Estates subdivision.
Legal Description	Tax Lots 601, 800 & 900, Sec. 27DB, T3S R1E WM (Assessor Map 3 1E 27DB)
Zoning	Current: Clackamas County, RRFF-5 Proposed: City of Canby, R-1
Proposal	Annexation of 9.55 acres into the City of Canby 8.96 acres of real property & 0.59 acres of NE Territorial Road right-of-way

Table of Contents

I. Application Forms

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: Frank and Kathleen Cutsforth Phone: (503) 266-2016
Address: P.O. Box 261 Email: frank@cutsforths.com
City/State: Canby, OR Zip: 97013 glassart1@aol.com

■ Representative Name: Sisul Engineering, Pat Sisul Phone: (503) 657-0188
Address: 375 Portland Avenue Email: patsisul@sisulengineering.com
City/State: Gladstone, OR Zip: 97027

☐ Property Owner Name: Frank Cutsforth Phone: (503) 266-2016
Signature:
Address: P.O. Box 261 Email: frank@cutsforths.com
City/State: Canby, OR Zip: 97013

☐ Property Owner Name: Kathleen Cutsforth Phone: (503) 266-2016
Signature:
Address: P.O. Box 261 Email: glassart1@canby.com
City/State: Canby, OR Zip: 97013

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

❶ All property owners represent they have full legal capacity to and hereby do authorize the filing of this application and certify that the information and exhibits herewith submitted are true and correct.
❷ All property owners understand that they must meet all applicable Canby Municipal Code (CMC) regulations.
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:

2265 & 2285 NE Territorial Road	9.0 Acres	3 1E 27DB #'s 601, 800 & 900
Street Address or Location of Subject Property	Total Size of Property	Assessor Tax Lot Numbers
Two homes and multiple other structures	RRFF-5	LDR - Low Density Residential
Existing Use, Structures, Other Improvements on Site	Zoning	Comp Plan Designation

Annexation into the City of Canby.
Describe the Proposed Development or Use of Subject Property

STAFF USE ONLY				
ANN & ZC 18-02	7-6-18	LF		
FILE #	DATE RECEIVED	RECEIVED BY	RECEIPT #	DATE APP COMPLETE

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: Frank and Kathleen Cutsforth Phone: (503) 266-2016
Address: P.O. Box 261 Email: frank@cutsforths.com
City/State: Canby, OR Zip: 97013 glassart1@aol.com

■ Representative Name: Sisul Engineering, Pat Sisul Phone: (503) 657-0188
Address: 375 Portland Avenue Email: patsisul@sisulengineering.com
City/State: Gladstone, OR Zip: 97027

☑ Property Owner Name(s)*: Frank Cutsforth Phone: (503) 266-2016
Signature: Frank Cutsforth Kathleen Cutsforth
Address: P.O. Box 261 Email: frank@cutsforths.com
City/State: Canby, OR Zip: 97013

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:

2265 & 2285 NE Territorial Road	9.0 Acres	3 1E 27DB #'s 601, 800 & 900
Street Address or Location of Subject Property	Total Size of Property	Assessor Tax Lot Numbers
Two homes and multiple other structures	RRFF-5	LDR - Low Density Residential
Existing Use, Structures, Other Improvements on Site	Zoning	Comp Plan Designation

Annexation of the property into the City of Canby and change in zoning from Clackamas County
Brief description of proposed development or use
RRFF-5 zoning to City of Canby R-1, Low Density Residential zoning.

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

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

II. Written Narrative

Application for Annexation

Owner/Applicants	Frank and Kathe Cutsforth P.O. Box 261 Canby, OR 97013 Phone (503) 266-2016
Consultant	Sisul Engineering, Pat Sisul 375 Portland Avenue Gladstone, OR 97027 Phone: (503) 657-0188 Emal: patsisul@sisulengineering.com
Location	2265 & 2285 NE Territorial Road South of NE Territorial Road, west of Highway 99E and the Union Pacific Railroad. North and west of Willow Creek Estates subdivision.
Legal Description	Tax Lots 601, 800 & 900, Sec. 27DB, T3S R1E WM (Assessor Map 3 1E 27DB)
Zoning	Current: Clackamas County, RRFF-5 Proposed: City of Canby, R-1
Site Size	8.91 Acres
Proposal	Annexation of 9.55 acres into the City of Canby 8.91 acres of real property & 0.64 acres of NE Territorial Road right-of-way
Date	July, 2018

PROPOSAL

The applicants propose annexation of 0.64 acres of street right-of-way and 8.91 acres of real property into the City of Canby with zoning of R-1, Low Density Residential, in conformance with the adopted Comprehensive Plan designation. Annexation will allow, in theory, development of approximately 20 new single-family residences as shown on the conceptual plan submitted with the application if the property is subdivided.

SITE DESCRIPTION

The site is located south of NE Territorial Road, west of Highway 99E and the Union Pacific Railroad, and north and east of the Willow Creek Estates subdivision. There are three tax lots owned by the applicants that are included in the annexation area, two of which currently have homes on them.

Tax Lot 601 is the western-most parcel and the only one that is vacant. This tax lot measures 182 feet wide by 574 feet long and is bordered by the Willow Creek Estates subdivision to the south, Willow Creek Estates and Vine Meadows subdivisions to the west, the Walnut Crossing subdivision to the north, and Tax Lot 900 to the east. Two local City of Canby streets are stubbed to the northwest corner of Tax Lot 601, NE 19th Court from the Vine Meadows subdivision to the west and N Walnut Street from the Walnut Crossing subdivision to the north. Both right of ways are 40 feet in width, and both roadways are constructed to older City of Canby local street standards.

Tax Lot 800 is the northern-most parcel. This tax lot contains one home located near Territorial Road, which was constructed in 1963. Tax Lot 800 measures 204 feet wide by 427 feet deep. It is bordered by Territorial Road to the north, the Walnut Crossing subdivision to the west, and Tax Lot 900 to the south and east. Farther east is the Union Pacific Railroad and Highway 99E. Tax Lot 800 has 204 feet of frontage on NE Territorial Road and 40 feet of frontage on NE 20th Avenue, which is stubbed to the west line of the parcel. NE 20th Avenue is a local street, constructed to older City of Canby local street standards, while NE Territorial Road is a collector roadway. The home takes access from Territorial Road via a shared driveway with Tax Lot 900.

Tax Lot 900 is the largest and most southerly parcel of the three, and it is also a flag lot. The parcel measures approximately 390 feet by 575 feet deep, with a 12-foot wide by 427-foot-long stem extending out to Territorial Road between Tax Lot 800 and the railroad right-of-way. One home, which was constructed in 1984, is located on the lot as are several other outbuildings. This tax lot is bordered by the railroad to the east, Willow Creek Estates to the south, Tax Lot 601 to the west, and Tax Lot 800 and the Walnut Crossing subdivision to the north. The only public street frontage is the 12-foot wide strip to NE Territorial Road.

The three properties are bordered by the City of Canby to the south and west with newer subdivisions (Willow Creek Estates, Vine Meadows, Walnut Crossing) and modern homes. On the opposite side of NE Territorial Road from the site is the Seventh

Day Adventist Church, which is in unincorporated Clackamas County. To the east is the railroad, the highway, and farther east across the highway, Canby Church of the Nazarene and one other large parcel, both of which are located in unincorporated Clackamas County. The nearby County properties generally carry the County RRFF-5 zoning.

The upper, main portion of the site is a mixture of grasses, some lawn, and some garden areas. There are a wide variety of trees onsite, however, Oak, Cedar, and Douglas Fir are the predominant species. Tax Lot 601 and the southern portion of Tax Lot 900 are heavily treed. The northern portion of Tax Lot 900 has far fewer trees than the south portion of the lot, while Tax Lot 800 has few trees by comparison to the other two tax lots.

A natural drainageway in a steep ravine is located along the southern portion of Tax Lots 601 and 900. The drainageway receives runoff from a pond and creek on the east side of Highway 99E and that crosses underneath Highway 99E and the railroad in an 18-inch diameter culvert. The drainage leaves the property to the southwest where it enters an open space in the Willow Creek Estates subdivision and eventually joins with Willow Creek. The drainageway has approximately 5 feet of fall from east to west across the site.

The bottom of the drainageway is approximately 22 to 25 feet below the level of the home on Tax Lot 900. The upper portion of the site is somewhat flat north to south (parallel with the railroad and highway), but the terrain slopes from east to west away from the highway, toward Willow Creek and the Willamette River. The highest point onsite is the NE corner where access to Territorial Road is taken, at elevation 134. The western edge of the Territorial Road frontage is at elevation 120, the NE 20th Avenue street stub is at elevation 114, the N Walnut Street street stub is at elevation 109 and the f NE 19th Court street stub is at elevation 106. The lowest portion of the site is the drainageway, which enters the site along the eastern property line at elevation 85 and leaves the site in the southwestern corner of the site at elevation 80. The floor elevation of the home on Tax Lot 800 is at 126, while the floor elevation of the home on Tax Lot 900 is at elevation 114.

Public sanitary sewer and water are available to the site in NE Territorial Road, NE 19th Court, and NE 20th Avenue. Other public utilities, such as natural gas, power and communications are also available from Territorial Road, NE 19th Court, NE 20th Avenue, and N Walnut Street. Fire protection is available to the property from Canby Fire District and police protection is available from the City of Canby Police Department. Storm drainage can be accommodated onsite through infiltration into the underlying soils and/or discharge to the natural drainageway onsite.

NE Territorial Road, N Walnut Street, NE 19th Court, and NE 20th Avenue are under the jurisdiction of the City of Canby. NE Territorial Road is designated as a collector, while the others are local streets. Although NW Territorial Road is under the jurisdiction of the City of Canby, much of the right-of-way has not been annexed into the City. This application proposes to annex all of the existing Territorial Road right-of-way between the east line of NE Spitz Road and the west line of the Union Pacific Railroad, that is not currently within the City of Canby. This right-of-way totals 0.64 acres.

Applicable Criteria and Standards

The requirements for a proposal for annexation are listed here and discussed in the following narrative:

Canby Comprehensive Plan

Canby Municipal Code Section 16.84.040

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), or

b. A Development Concept Plan (DCP).

2. Analysis of the "need" for additional property within the city limits shall be provided.

3. Statement of potential physical, aesthetic and related social effects of the proposed development on the community as a whole and on the neighborhood…,

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

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

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;

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

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.

9. Compliance with other applicable city ordinances or policies;

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

CANBY COMPREHENSIVE PLAN

Urban Growth Element

Goal 1. To preserve and maintain designated agricultural and forest lands by protecting them from urbanization.

Response: The site is designated "RRFF-5" by Clackamas County, a rural residential zone. The soil types identified onsite include “Amity Silt Loam” and “Latourell Loam”, both of which are suitable for agriculture or for development. The site is not being used for commercial agricultural purposes though, as it is too small for a viable farm and portions of the site are heavily covered by trees, while other areas are excessively steep. The site is bordered by new urban subdivisions on two sides and because the property is within the City's Urban Growth Boundary, the policy has been established by the City and County that the site will ultimately be developed for urban uses.

Goal 2. To provide adequate urbanizable area for the growth of the City, within the framework of an efficient system for the transition from rural to urban land use.

Response: The site is an area that is slowly growing and converting to urban uses in locations where public utilities are available. Adjacent properties to the south and west are already within the City of Canby, while properties to the north, and across Highway 99E to the east remain in the County. City streets and utilities have been extended to serve the site from the west through development of two neighboring subdivisions. With the current pattern of development, these parcels remain a pocket of County zoned land bordered by land within the City limits on two sides, a railroad, and a collector roadway. The current pattern makes provision of some services less efficient than if the land within this pocket was within the City.

Policy 1. Canby shall coordinate its growth and development plans with Clackamas County.

Response: The Comprehensive Plan is the adopted policy for the city and county. The proposed zoning for the site is consistent with the adopted Comprehensive Plan.

Policy 3. Canby shall discourage the urban development of properties until they have been annexed to the City and provided with all necessary urban services.

Response: Public facilities and services are available to the site from NE Territorial Road and two neighboring subdivisions. Public sanitary sewer is available within NE Territorial Road, NE 19th Court, and NE 20th Avenue. The applicant has been advised that the City has adequate capacity to serve the site. Other public utilities, including public water, natural gas, power and communications are also available in all nearby streets. Fire protection is available through Canby Fire District and police protection is available from the City of Canby Police Department. Service providers have indicated that the site can be served at density levels consistent with the site’s future R-1 zoning.

NE Territorial Road is a collector roadway. A Transportation Planning Rule letter, paid for by the applicant, and prepared by the City of Canby's traffic consultant, determined that when the site is developed as an R-1 subdivision, traffic from the site will not have a significant impact on the surrounding roadway system. The transportation assessment performed as a part of the City's Transportation System Plan accounted for the proposed development of the site as an R-1 subdivision, and therefore the rezoning of the site to R-1 is consistent with the acknowledged transportation system plan.

Public schools, by law, are required to provide for students within the district. The property is already located within the Canby School District and is served by Knight Elementary School, Baker Prairie Middle School. According to the school district officials, Canby School District currently has nearly flat enrollment and enrollment projections indicate that enrollment is anticipated to remain nearly flat for the next few years, even with the growth in the city. The school district has some classes near capacity, while other are below capacity, but generally, there is more room available at the high school level that at the lower grades. For the 2018-2019 school year, Canby School District is offering the following Open Enrollment openings for students living outside the school district boundaries:

Knight Elementary:	2nd Grade: 2
	4th Grade: 2
Baker Prairie Middle School:	7th Grade: 15
	8th Grade: 4
Canby High School:	9th Grade: 50
	10th Grade: 50
	11th Grade: 50

The applicants intend to annex their land at this point and are unsure of how soon it may be developed as a subdivision. The applicants are not developers and they do not plan to develop the site. With the length of time required to go through the annexation and subdivision approval processes, the very earliest that homes could be constructed on the site would be beginning in the summer of 2019. Any new students generated by having new homes on this property would not impact district schools until fall 2019 at the earliest. More likely, most new residents moving into a subdivision on this site would not move in until late 2019 or 2020. However, this time line would only apply if an actual development proposal is submitted to the City and homes are constructed. Also, the applicants anticipate that their children's families, who already live in Canby, may occupy some of the lots within a future subdivision. Children from these families would not be new to the school district, as they are already attending Canby schools.

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.

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

Response: The City experienced a significant slowdown in building permits beginning in 2007 in response to regional and national trends in homebuilding and associated finance issues. That slowdown began to turn around in 2013 and the City has seen a significant uptick in building activity in recent years.

This site is identified in the Comprehensive Plan as LDR – Low Density Residential. Density in this zone is controlled by permitted maximum and minimum lot sizes identified in the Development Code for the R-1 zone. The ability to increase the density of the site, when developed, is limited by the requirements of the R-1 Chapter. Further, this site has a natural resource area located on site with a natural drainageway and steep slopes that makes a portion of the site unfeasible to develop.

In order to satisfy building demand, the Council adopted annexation supply policy to assure a 3-year supply of available platted lots for consumption. According to an analysis performed by the applicant, as of July 1, 2018 there are 106 platted available single-family lots (see Appendix A). Based on an average of 45 building permits per year, the existing inventory of buildable lots would provide approximately a 1.5-year supply. However, other "In Process" development applications will add a significant number of additional available buildable lots for new single family homes in the next two years.

Using the City of Canby's Comprehensive Plan's methodology for forecasting the potential residential development, small parcels of vacant land designated Low Density Residential within the City shall assume 15 percent of the land area shall be subtracted for dedication of street rights-of-way and easements, 10 percent of the remaining land area shall be assumed for public and semi-public purposes, and 5 percent of the remaining land area for an assumed vacancy factor. The remaining acreage shall be multiplied by 4.5 dwelling units per acre.

The proposed annexation would add approximately 8.9 acres of buildable land to the City, although the developable portion of the site would be considerably smaller considering that there are already two homes on the site and there is a significant natural resource on the south side of the property that will be undevelopable. If the natural resource area was ignored and not taken into account, the anticipated number of dwelling units and people added, per the methodology in the Comprehensive Plan, would be:

1. 9.0 acres less 1.35 acres (right-of-way and easements) = 7.65 acres
2. 7.65 acres less 0.75 acres (pubic & semi-public open space) = 6.90 acres
3. 6.90 acres less 0.35 acres (vacancy factor) = 6.55 acres

4. 6.55 acres x 4.5 units per acre = 29 dwelling units
5. 2 existing homes already exist = 27 new dwelling units
6. 27 dwelling units with 2.6 persons/dwelling unit = 70 people

However, the natural resource area encumbers approximately 2.85 acres. This area has a combination of a natural drainageway, steep slopes, and is too low in elevation to be served by sanitary sewer, which makes this portion of the site unfeasible to develop. Setting this area aside, the anticipated number of dwelling units and people added per the methodology in the Comprehensive Plan, would be:

1. 9.0 acres less 2.85 acres (natural resource area) = 6.15 acres
2. 6.15 acres less 0.92 acres (right-of-way and easements) = 5.23 acres
3. 5.23 acres less 0.52 acres (pubic & semi-public open space) = 4.71 acres
4. 4.71 acres less 0.24 acres (vacancy factor) = 4.47 acres
5. 4.47 acres x 4.5 units per acre = 20 dwelling units
6. 2 existing homes already exist = 18 new dwelling units
7. 18 dwelling units with 2.6 persons/dwelling unit = 47 people

The number of anticipated dwellings indicated on the Conceptual Development Plan prepared by the applicant is a total of 22 dwellings, the 2 existing homes plus 20 potential lots. The 20 potential lots is in between the number of dwelling units arrived at using the two calculation methodologies above.

Annexation of the land would not immediately result in 20 new lots being available for home development though. An application for subdivision would have to be completed, with approval required by the Planning Commission. Then construction plans would have to be prepared, land development would need to occur, and a subdivision plat would have to be filed. If approved, the earliest all of this could be accomplished would be summer 2019, with home construction possibly beginning in late summer or early fall 2019. It is likely that the first of the new dwellings in the annexation site would not become available for occupancy until spring 2020, nearly two years from now, after much of the current buildable lot inventory has been depleted.

If annexed, and once the land is platted, it would be expected to add approximately twenty single-family lots to the platted lot supply. Based on the rate of growth projected for Canby by a study completed by the Portland State University Population Resource Center (see Appendix A), this is anticipated to be a two to three-month supply.

The site adjacent to an area of newer development. Public facilities are stubbed to the edge of the property and are available to serve this land when it is annexed into the City. Annexation of the site would facilitate the orderly extension of public services and would facilitate the elimination of three temporary dead-end streets and water mains.

Policy 3. Canby shall discourage any development which will result in overburdening any of the community's public facilities or services.

Response: The applicant has contacted the City and other service providers. No problems have been identified with the provision of any public facility or service.

Environmental Concerns Element

Goal 1. To protect identified natural and historical resources.

Goal 2. To prevent air, water, land, and noise pollution.

Goal 3. To protect lives and property from natural hazards.

Policy 1-R-A. Canby shall direct urban growth such that viable agricultural uses within the urban growth boundary can continue as long as it is economically feasible for them to do so.

Response: At only 9 acres and with 2 existing homes, a large natural resource area, and a significant number of trees, the site is not large enough to be viable as a farm. In addition to being small, the site is bordered by urban subdivisions within the City of Canby on two of its four sides, which would conflict with the noise, dust, and chemicals associated with agriculture. The ultimate destiny for this site was settled with establishment of the Urban Growth Boundary and earlier annexations that have edged up to the site and now border the property.

Policy 1-R-B. Canby shall encourage the urbanization of the least productive agricultural area within the urban growth boundary as a first priority.

Response: Agricultural land and uses will not be affected by the proposal for annexation. There is no agricultural use of this land.

Policy 2-R. Canby shall maintain and protect surface water and groundwater resources.

Response: A drainageway ravine is located on the southern portion of Tax Lots 900 and 601 that conveys water flowing from a culvert underneath Highway 99E and the railroad, across the site. The drainage leaves the property in the southwest corner of the site and feeds into Willow Creek through the Willow Creek Estates subdivision. This natural resource will not be affected by the annexation and it is expected to remain in place when the site is eventually developed as a subdivision.

Policy 6-R. Canby shall preserve and, where possible, encourage restoration of historic sites and buildings.

Response: No historic sites or buildings are located on this site.

Policy 9-R. Canby shall attempt to minimize the adverse impacts of new developments on fish and wildlife habitats.

Response: An existing drainageway ravine is located on the southern portion of Tax Lots 601 and 900. This drainageway is fed from springs located on the east side of Highway 99E and it drains to the Willamette River through a riparian environment. The canopy of trees in this portion of the site also provides habitat for certain animal species. Annexation of the property will not impact this habitat, however, land development could, if not protected. The applicants intend to protect this resource area and their submitted Conceptual Site plan indicates protection of the resource area through the establishment of 4 resource protection tracts. The ravine, at an elevation between 80 and 85 feet, is too low in elevation to be served by the sanitary sewer available to the site, which is at elevation 97.4 in NE 19th Court.

Policy 10-R. Canby shall attempt to minimize the adverse impacts of new developments on wetlands.

Response: It is not known whether any wetlands are associated with the drainageway located on the southern portion of the property, however, as mentioned in response to Policy 9-R, the applicants intend to protect the resource area on the southern portion of the property. Therefore, if there are any wetlands located adjacent to the stream, they will also remain protected.

Policies 1-H, 2-H, 3-H: Policies relating to hazards associated with topography and slope, flood prone areas, and poor soils.

Response: As already discussed several times above, on the southern portion of Tax Lots 601 and 900, there is a deep drainageway ravine. The ravine is over 20 feet deep on the eastern side of the site and less deep on the western portion of the site. The side slopes on the northern side pf the ravine measure approximately 5:1, or 20%. The applicant's submitted Conceptual Site plan indicates protection of the resource area through the establishment of 4 resource protection tracts. Prohibition of development of this portion of the site will encourage consistency with the policies identified in these sections of the Comprehensive Plan.

The Soil Construction Limitation Map identifies a zone of thin soils, expanding soils and high groundwater running through a portion of the site extending from the railroad right-of-way through the site and into the Walnut Crossing and Vine Meadows subdivisions. Per the Comprehensive Plan, "Recognizing the relatively limited extent of these conditions and the low level of risk they present, the City's approach to development of these areas will be advisory rather than regulatory. In other words, an effort will be made to advise builders and property owners of the potential hazards, but no strict regulations will be enforced unless the scope of the hazards turns out to be more serious than present information indicates."

These same thin soils are also identified to exist in other areas near this site, including within the Walnut Crossing and Vine Meadows subdivisions adjacent to this site, and in

Erika Estates and Postlewait Estates located along the western side of N Redwood Street. Although areas of thin soils are within these existing subdivisions, the soils presented no particular hazards and no special construction techniques were implemented.

Transportation Element

Goal: To develop and maintain a transportation system which is safe, convenient and economical.

Policy 1. Canby shall provide the necessary improvement of City streets, and will encourage the County to make the same commitment to local County roads, in an effort to keep pace with growth.

Policy 2. Canby shall work cooperatively with developers to assure that new streets are constructed in a timely fashion to meet the City's growth needs.

Response: NE Territorial Rd. is now classified as a collector roadway by the City of Canby Transportation System Plan, while the other existing streets adjacent to the site are identified as local streets. NE Territorial Road is improved with curb and sidewalk across the frontage of the site, so the applicants anticipate no additional frontage improvements. The applicant would expect to construct any new streets within the development site, including appropriate extensions of NE 19th Court, NE 20th Avenue, and N Walnut Street at the time of subdivision.

Policy 6. Canby shall continue in its efforts to assure that all new developments provide adequate access for emergency response vehicles and for the safety and convenience of the general public.

Response: A site plan for a future subdivision can be designed to provide access for all lots and to facilitate access for emergency vehicles. This will be demonstrated in the context of a subdivision application, after the site has been annexed into the City and City zoning has been applied. A conceptual layout for the site is included with this application, showing how new streets could be extended through the site to provide adequate emergency access, vehicular access, and safe and convenient bicycle and pedestrian access for neighborhood residents.

Public Facilities and Services Element

Goal: To assure the provision of a full range of public facilities and services to meet the needs of the residents and property owners of Canby.

Response: To the best of the applicant's knowledge, all public facilities and services are available to the site for the development proposed.

Housing Element

Goal: To provide for the housing needs of the citizens of Canby.

Response: The site is part of the land supply within the Urban Growth Boundary of the City of Canby that is planned to provide the future housing needs of citizens.

Conclusion: The proposed annexation supports applicable policies of the Canby Comprehensive Plan, based on the foregoing discussion of goals and policies.

ANNEXATION CRITERIA
(Canby Municipal Code Section 16.84.040)

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 the 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.*
        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.

Response: The site is not located within a Development Agreement area identified on the City of Canby Annexation Development Map. The provisions of this section do not apply to this application.

    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 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*

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 City Council prior to granting a change in zoning classification.

Response: The site is not within a Development Concept Plan area as shown on the City of Canby Annexation Development Map. The provisions of this section also do not apply to this application.

2. Analysis of the "need" for additional property within the city limits shall be provided.

Response: A detailed study of need is located in Appendix A at the end of this narrative. In summary, the Current Inventory (July 1, 2018) has been determined to be 106 lots, or a 1.5-year supply, based on projected growth. The available lot inventory is anticipated to climb with approval and development of several "In Process" subdivisions, culminating in a projected high inventory of 295 lots / 4.2 years in October 2019.

However, at least two of the current application have been appealed by neighbors of the projects and would be considered as "controversial". If one or more of these projects is delayed, denied, or the number of lots is reduced below what has been applied for, then the projected inventory could be far less than projected and may never exceed a 3-year supply.

The Cutsforth property is a small player in the Canby buildable lot inventory. When developed as a single family residential subdivision, it is anticipated to add 20 additional homes to the inventory, a two to three-month supply. The first of these lots would be expected to be available in Spring, 2020, slightly less than two years from now. If no subdivision applications are submitted and approved (other than the Cutsforth application) in the following 3 years, the available lot inventory projected in July 2021, three years from now, would be anticipated to be 191 lots, a 2.7-year supply.

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 proposed concerns, if any.

Response: The site is within the City's UGB, and is expected to develop according to the Comprehensive Plan designations. Some residents on adjacent properties will experience

a loss of open space. However, vacant and undeveloped land within an UGB is expected to be utilized to accomplish the community's goals as expressed in the Comprehensive Plan. Therefore, the aesthetic and social impacts of development of the annexation site should be within the anticipated range of impacts associated with continuing growth within the City of Canby.

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

Response: Public facilities and services are available as previously discussed. Public sanitary sewer is available in NE 19th Court, NE 20th Avenue, and NE Territorial Road. Public water is available in all of the above-mentioned streets and also in N Walnut Street. Public streets nearby this site have the capacity to carry the number of trips expected to be generated by this site, at the R-1 zoning shown on the Comprehensive Plan, as discussed in the Transportation Analysis Letter prepare by DKS Associates, the City's Traffic Engineer. Public park facilities located near the site include the Logging Road Trail, the Eco Natural Area, the 19th Avenue Loop Natural Area and Maple Street Park. Schools that would serve this site, Knight Elementary, Baker Prairie Middle School and Canby High School have adequate capacity to serve additional students.

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

Response: Annexation by itself will not generate an increased demand on public services. Two homes are currently located on the property. The home near Territorial Road was constructed in 1963, while the applicant's home, located centrally within the site, was constructed in 1984. These homes will remain on current utilities until such time that the site is subdivided.

Subdivision of the property into multiple lots, each with a new home, would increase the demand for City facilities. Because the site is located within the City's UGB, it is expected to develop according to its Comprehensive Plan designation and therefore, the increases in the demand for public services should be within the range of anticipated impacts. The applicant has been advised that the City has adequate services to serve the site.

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.

Response: Annexation of the property will not increase the demand for public services, however, subdivision of the property will create multiple lots that will increase demand for public water, sanitary sewer, streets, emergency services, parks and schools. Public utilities needed to serve the development of the property would be provided by the development through construction of new public utility infrastructure by the developer at the time of subdivision. Systems Development charges paid for by the homebuilders at the time a building permit is obtained, theoretically offset the impact of each single-family home has to the utility, roadway, or park system.

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

Response: Public facilities needed to serve the development will be provided by the development through construction of new facilities by a developer (water, sewer, drainage, streets) and through the payment of SDC fees (water, wastewater, transportation, storm and parks) by homebuilders building homes within the development. Homebuilders will also pay the construction excise tax for the school district.

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.

Response: The proposed use of the site is consistent with the adopted Comprehensive Plan Map designation and the text contained in the City's Land Development and Planning Ordinance. No text or map amendments are anticipated to be needed for development of the site.

9. Compliance with other applicable city ordinances or policies.

Response: The application complies with other city ordinances or policies, or can be made to comply through the development process.

10. Compliance with applicable sections of ORS 222.

Response: The applicant expects to comply with these provisions of state law.

Conclusion: The criteria of Section 16.84.040 are satisfied, as demonstrated by the foregoing narrative.

Conclusion

The foregoing narrative describes a proposal for annexation of 9.55 acres total, 8.91 acres of real property and 0.64 acres of NE Territorial Road street right-of-way. The annexation supports the City's goals and policies and satisfies applicable criteria identified in the City's Comprehensive Plan and Land Development and Planning Code. Therefore, the proposed annexation should be approved.

Appendix A:

Analysis of Population and Estimated Available Lot Inventory July 1, 2018 through July 1, 2021

According to the Portland State University Population Resource Center (PRC), Canby's estimated population for the years 2015 through 2017, is shown in Table 1 below:

Table 1: Estimated Population 2015-2017:

Year	PRC Pop. Est.
2015	16,010
2016	16,420
2017	16,660

The above figures are based on population within the Canby city limits. PRC data and projections for the Canby Urban Growth Boundary, which includes population within the city limits as well as areas that are presently outside of the city but within the UGB, are shown in Table 2:

Table 2: Canby UGB Projected Growth

2000	2010	AAGR (2000-2010)	2017	2035	2067	AAGR (2017-2035)
13,323	17,097	2.5%	17,976	24,045	35,118	1.6%

AAGR = Average Annual Growth Rate

Source: Coordinated Population Forecast for Clackamas County, its Urban Growth Boundaries (UGB), and Area Outside UGBs 2017-2067(Draft), PRC

For the purposes of judging the need for developable land for single-family homes, it is most appropriate to use the population data for the UGB as a whole, as the city limits will gradually expand outward to the current UGB line over the next twenty to forty years. The AAGR from 2017 to 2035 will likely taper off gradually from the 2.5% AAGR that occurred between 2000 and 2010. However, using a conservative approach of applying an AAGR of 1.6%, the projected population of the Canby UGB between 2018 and 2021 would be as shown in Table 3:

Table 3: Estimated Population 2018-2021

Year	Est. Population
2018	18,264
2019	18,556
2020	18,853
2021	19,155

Assuming an average of 2.8 persons per household, the projected population increase of 891 people (19,155 – 18,264) would generate 318 new households in the next three years. Since development outside the city limits is constrained by Clackamas County's rural zoning, nearly all these new households will be accommodated by development located within the Canby city limits. Perhaps a third of the projected household units (106) will be addressed through new multi-family housing, which would still leave a need for 212 additional single-family lots. Over the course of a three-year period, this would equate to 71 single family lots per year, approximately 18 every quarter, or 6 per month.

The City of Canby has four residential building zones; R-1 Low Density Residential Zone, R-1.5 Medium Density Residential Zone, R-2 High Density Residential Zone, and C-R

Residential/Commercial Zone. Generally, lots developed in the R-1, R-1.5, and C-R zones would be single family lots while lots and housing developed in R-2 zones is more commonly multi-family residential. For this analysis, we assume that R-2 housing will be multi-family unless known or anticipated otherwise by the City Planning Department.

The inventory of available buildable lots in Canby is an ever-changing figure. Inventory climbs as new subdivision plats and partitions are recorded and dips with each new building permit pulled. For this analysis, we define "Current Inventory" to be the inventory as of July 1, 2018.

On July 1, 2018, the inventory of available platted lots in Canby is 106 lots, as calculated below in Table 4, Current Inventory:

Table 4: Current Inventory, July 1, 2018

Subdivision Name	Zoning	Total Lots	Homes Permitted for Building	Lots Restricted from Building*	Lots Available
Timber Park	R-1.5	105	18	5	82
Northwood Estates 2	R-1	31	28	0	3
Northwood Estates 3	R-1	21	15	0	6
Caitlyn's Place	R-1	6	4	0	2
Faist Addition 6	R-1	30	26	1	3
Faist Addition 7	R-1	6	4	0	2
Partition Plat	**Zoning**	**Total Lots**	**Homes Permitted for Building**	**Lots Restricted from Building**	**Lots Available**
PP2017-044 Allee & Brito	R-1	2	0	0	2
PP2017-048 Pierce	R-1	3	0	0	3
PP2018-024 Harris	R-1	1	0	0	1
PP2018-018 White River	R-1	1	0	0	1
Mathieson (unrecorded)	R-1	1	0	0	1
July 1, 2018 Inventory:					106

- A number of lots in Faist Addition Phase 6 and Timber Park are currently being used as fire truck turnarounds. Most of these lots will become buildable with the platting of future planned subdivisions.

Based on a 3-year projected demand of 212 lots, 106 available platted lots equal a 1.5-year supply. In addition to the current inventory several other residential development applications are progressing through the land use, construction, and platting processes involved with creation of a new subdivision. The time required to take a subdivision application from the pre-application stage to the point that the parcel is a recorded plat with complete infrastructure improvements varies depending upon the size of the parcel, the complexity of the site, and given the weather of the Pacific Northwest, how the timing of the approve of the land use application falls in relation to the wet season. From our history of working in the City of Canby, we believe that the typical time frame required to take an application from a pre-application meeting to a completed development is roughly one year if timed perfectly. A 15 to 18-month period is common if a development is approved by the Planning Commission in mid-summer to mid-fall, where weather will delay project construction from beginning until mid-spring. Appeals to planning

decisions are rare, but two current land use applications have been slowed down by appeals to planning decisions. Appeals can slow a project down for an additional 6 months or more.

According to the City of Canby Planning Department, as of July 1, 2018 "In Process" single family land development projects working their way through the land use, construction, and platting processes include the following:

Table 5: In Process Development Projects

Application Name and/or Applicant	Zoning	Anticipated Lots
Faist Addition Phase 8, Netter	R-1	26
Tanoak, Marnella	R-1	8
Beck Pond, Stafford Land Co.	R-1/R-1.5	69 Total: 23 R-1, 46 R-1.5
Redwood Landing (Phase1), ICON	R-1	83
Seven Acres, Sprague	R-1	22
Canby Townhomes, Busse	C-R	30
S Pine Townhomes, Netter & Manuel	R-2	6
Cougar Run, Canby School District	R-1	23
Faist Addition Phase 9, Netter	R-1	6

For the purposes of this study, in Table 6 below, we estimate (by Quarter) when each project identified in Table 5 will be completed and platted and will add available inventory:

Table 6: In Process Projects, Estimated Completion/Platting Dates

Application Name and/or Applicant	Anticipated Date
Faist Addition Phase 8, Netter	10/1/18
Tanoak, Marnella	10/1/18
Beck Pond, Stafford Land Co.	4/1/19
Redwood Landing (Phase1), ICON	7/1/19
Seven Acres, Sprague	10/1/19
Canby Townhomes, Busse	10/1/19
S Pine Townhomes, Netter & Manuel	10/1/19
Cougar Run, Canby School District	10/1/19
Faist Addition Phase 9, Netter	10/1/19

Based on an average annual demand of 71 building permits, for each 3-month quarter, is it estimated that ¼ of the projected annual building permits would be issued, 17.75 per quarter. For the purposes of this analysis, we will assume 17 permits will be issued in Q1, and 18 will be issued in each of Q2 – Q4, for a total of 71 annually.

Beginning with the current inventory listed in Table 4, then adding lot inventory for the "In Process" single family development projects on the anticipated dates listed in Table 6, and deducting 17.75 lots for issued building permits each quarter, the projected quarterly inventory is estimated as follows for the next 36 months, assuming no new subdivision applications beyond those previously accounted for in this analysis are approved by the City:

Table 7, Inventory in 3 months, October 1, 2018

July 1, 2018 Inventory			106
Anticipated New Building Permits Issued (reduction in inventory)			(18)
New Subdivisions Recording			
Subdivision Name	**Zoning**	**Total Lots**	**Lots**
Faist Addition 8	R-1	26	26
Tanoak	R-1	8	8
Restricted Lots Becoming Buildable			
Timber Park	R-1.5		2
October 1, 2018 Inventory:			124

Table 8, Inventory in 6 months, January 1, 2019

October 1, 2018 Inventory			124
Anticipated New Building Permits Issued (reduction in inventory)			(18)
New Subdivisions Recording			
None			
January 1, 2019 Inventory:			106

Table 9: Inventory in 9 months, April 1, 2019

January 1, 2019 Inventory			106
Anticipated New Building Permits Issued (reduction in inventory)			(17)
New Subdivisions Recording			
Subdivision Name	**Zoning**	**Total Lots**	**Lots**
Beck Pond	R-1	23	23
	R-1.5	46	46
April 1, 2019 Inventory:			158

Table 10, Inventory in 12 months, July 1, 2019

April 1, 2019 Inventory			158
Anticipated New Building Permits Issued (reduction in inventory)			(18)
New Subdivisions Recording			
Subdivision Name	**Zoning**	**Total Lots**	**Lots**
Redwood Landing	R-1	83	83
July 1, 2019 Inventory:			223

Table 11: Inventory in 15 months, October 1, 2019

July 1, 2019 Inventory			223
Anticipated New Building Permits Issued (reduction in inventory)			(18)
New Subdivisions Recording			
Subdivision Name	**Zoning**	**Total Lots**	**Lots**
Seven Acres	R-1	22	22
Canby Townhomes	C-R	30	30
S Pine Townhomes	R-2	6	6
Cougar Run	R-1	23	23
Faist Addition 9	R-1	6	6
Restricted Lots Becoming Buildable			
Timber Park	R-1.5	2	2
Faist Addition 6	R-1	1	1
October 1, 2019 Inventory:			295

Table 12: Inventory in 18 months, January 1, 2020

October 1, 2019 Inventory	295
Anticipated New Building Permits Issued (reduction in inventory)	(18)
New Subdivisions Recording	
None	
January 1, 2020 Inventory:	277

Table 13: Inventory in 21 months, April 1, 2020

January 1, 2020 Inventory	277
Anticipated New Building Permits Issued (reduction in inventory)	(17)
New Subdivisions Recording	
None	
April 1, 2020 Inventory:	260

Table 14: Inventory in 24 months, July 1, 2020

April 1, 2020 Inventory	260
Anticipated New Building Permits Issued (reduction in inventory)	(18)
New Subdivisions Recording	
None	
July 1, 2020 Inventory:	242

Table 15: Inventory in 27 months, October 1, 2020

July 1, 2020 Inventory	242
Anticipated New Building Permits Issued (reduction in inventory)	(18)
New Subdivisions Recording	
None	
October 1, 2020 Inventory:	224

Table 16: Inventory in 30 months, January 1, 2021

October 1, 2020 Inventory	224
Anticipated New Building Permits Issued (reduction in inventory)	(18)
New Subdivisions Recording	
None	
January 1, 2021 Inventory:	206

Table 17: Inventory in 33 months, April 1, 2021

January 1, 2021 Inventory	206
Anticipated New Building Permits Issued (reduction in inventory)	(17)
New Subdivisions Recording	
None	
April 1, 2021 Inventory:	189

Table 18: Inventory in 36 months, July 1, 2021

January 1, 2021 Inventory	189
Anticipated New Building Permits Issued (reduction in inventory)	(18)
New Subdivisions Recording	
None	
July 1, 2021 Inventory:	171

The Cutsforth Annexation could potentially add 20 lots to the buildable inventory when developed. Given the time that is required to get through an annexation land use decision and then a subdivision land use application, engineering plan review, construction of improvements and time to record a subdivision plat, it is not anticipated that any new lots on the Cutsforth property would be platted prior to April 1, 2020. Given this time frame, a summary of the estimated available inventory for July 1, 2018 through July 1, 2021 as calculated above, is shown below in Table 19, with and without the Cutsforth inventory.

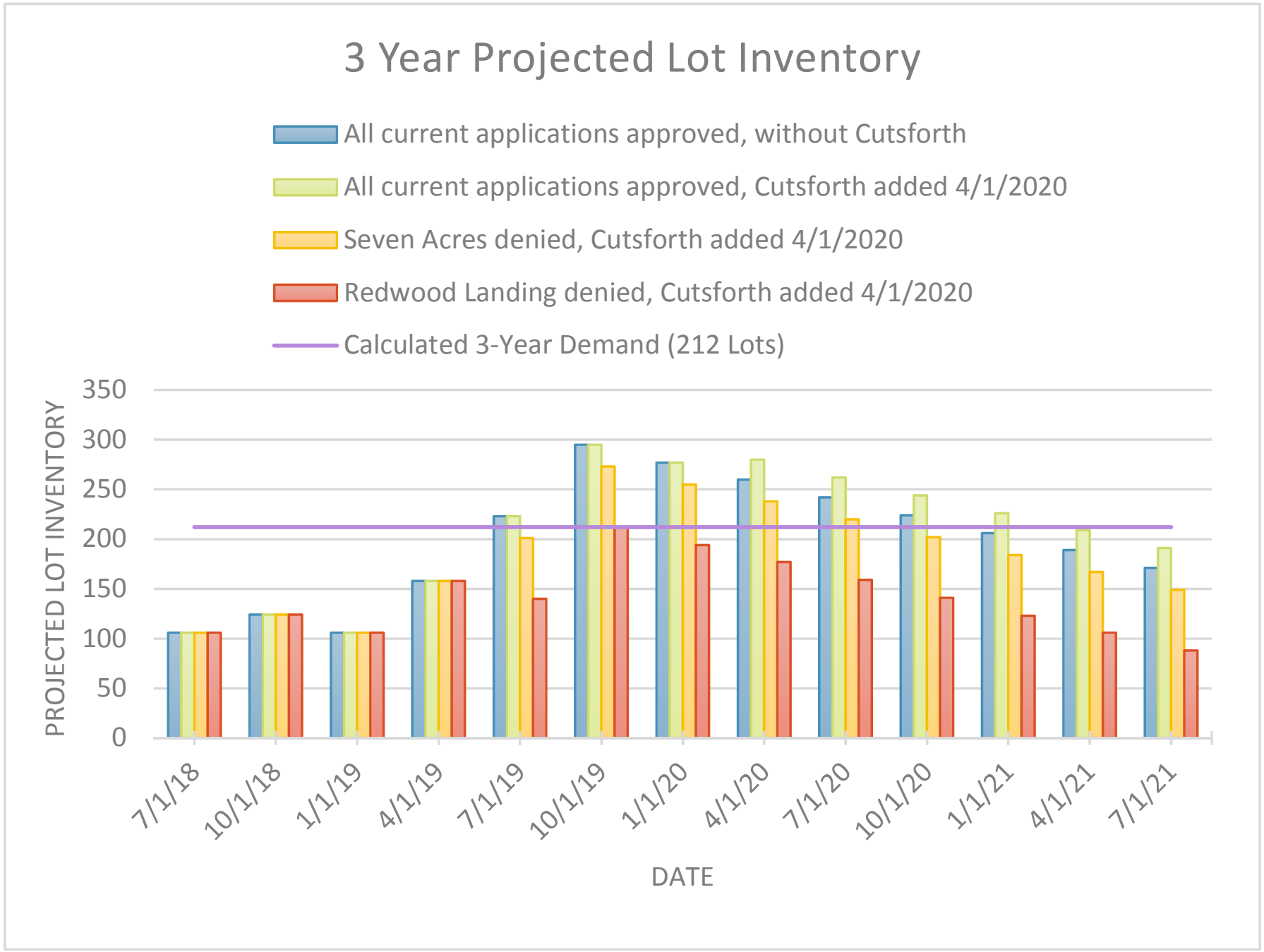
Table 19: Summary of Estimated Building Inventory

Date	Estimated Inventory (Lots)	Estimated Inventory (years)	Estimated Inventory with Cutsforth Added (Lots)	Estimated Inventory with Cutsforth added (years)
July 1, 2018	106	1.5		
October 1, 2018	124	1.7		
January 1, 2019	106	1.5		
April 1, 2019	158	2.2		
July 1, 2019	223	3.1		
October 1, 2019	295	4.2		
January 1, 2020	277	3.9		
April 1, 2020	260	3.7	280	3.9
July 1, 2020	242	3.4	262	3.7
October 1, 2020	224	3.2	244	3.4
January 1, 2021	206	2.9	226	3.2
April 1, 2021	189	2.7	209	2.9
July 1, 2021	171	2.4	191	2.7

The current inventory is 106 lots/1.5 years. This inventory is anticipated to climb with development of several "In Process" subdivisions, culminating in a projected high inventory of 295 lots/4.2 years on October 1, 2019. The Cutsforth property (if annexed and subdivided) would add 20 lots, a 2 to 3-month supply, in April, 2020 unless the development is phased. Assuming no development applications are submitted and approved (other than the Cutsforth application) in the intervening 3 years, the July 2021 inventory is anticipated to be 191 lots, a 2.7-year supply.

Two "In Process" development applications have been appealed and would be considered as "controversial". The Seven Acres subdivision was appealed to LUBA once, and the City's decision has recently gone back to LUBA. At the time of this analysis, it is within the window of opportunity for the application to be appealed to LUBA a second time, however, it is not anticipated. The Redwood Landing subdivision was appealed to City Council by neighbors of the development and the City Council affirmed the approval on June 6, 2018. At this time, it is not known whether this application may be appealed to LUBA. It is possible that either of these two projects may be approved as proposed, approved with fewer lots, or denied.

On the following page, we graph multiple inventory scenarios. Scenario 1 (blue) assumes that all "In Process" projects will be approved as submitted. The Cutsforth annexation is not included in the inventory. Scenario 2 (green) takes the inventory in Scenario 1 and adds 20 additional lots in for development of the Cutsforth property on April 1, 2020. Scenario 3 (orange) assumes that based on appeals, the Seven Acres subdivision is prevented from being developed. It is calculated as Scenario 2 minus the 22 lots proposed in the Seven Acres development. Scenario 4 (red) assumes that based on appeals, the Redwood Landing subdivision is prevented from being developed. It is calculated as Scenario 2 minus the 83 lots proposed in Phase 1 of the Redwood Landing development.


3 Year Projected Lot Inventory
All current applications approved, without Cutsforth
All current applications approved, Cutsforth added 4/1/2020
Seven Acres denied, Cutsforth added 4/1/2020
Redwood Landing denied, Cutsforth added 4/1/2020
Calculated 3-Year Demand (212 Lots)
PROJECTED LOT INVENTORY
350
300
250
200
150
100
50
0
7/1/18
10/1/18
1/1/19
4/1/19
7/1/19
10/1/19
1/1/20
4/1/20
7/1/20
10/1/20
1/1/21
4/1/21
7/1/21
DATE

III. Pre-application Meeting Minutes

April 10, 2018

Frank & Kathe Cutsforth
PO Box 261
Canby, OR 97013

Pat Sisul
375 Portland Avenue
Gladstone, OR 97027

Sent via email

Subject: Preapplication Conference

A Preapplication Conference for **2265 & 2285 NE Territorial Road** has been scheduled for **Tuesday, May 1, 2018 at 10:30 am** located at the City Shops Conference room 1470 NE Territorial Road, Canby, Oregon.

PLEASE NOTIFY ANY OF YOUR PEOPLE THAT NEED TO ATTEND.

The following are the service providers that have been notified and received the prints you provided.

Canby Fire District, Todd Gary	503-266-5851	CUB, Water, Doug Quan	503-266-1156
Canby Planning, Bryan Brown	503-266-0702	CUB, Electric, Gary Stockwell	503-266-1156
Canby Public Works, Jerry Nelzen	503-266-0759	Curran-McLeod, Curt McLeod	503-684-3478
DirectLink, Dinh Vu	503-266-8201	Wave Broadband, Tim Gettel	503-307-0029
NW Natural, Dan Kizer	503-226-4211 x8166	Canby Public Works, Jennifer Cline	503-266-0780
Canby Erosion Control, Shane Hester	503-266-0698		

If you have any questions, feel free to contact me at 503-266-0798.

Thanks,

Ronda Rozzell

Ronda Rozzell
Shop Complex Secretary

Pre-Application Meeting

2265 & 2285 NE Territorial Road
May 1, 2018
10:30 am

Attended by:

Hassan Ibrahim, Curran-McLeod Engineering, 503-684-3478
Kathe Cutsforth, Owner, 503-936-9629
Jerry Nelzen, Public Works, 971-253-9173
Gary Stockwell, CU Electric, 503-263-4307
Bill Makowski, CU Water, 971-563-6315
Gary Potter, Citizen, 503-476-6588
Pat Sisul, Sisul Engineering, 503-657-0188
Frank Cutsforth, Owner, 503-936-9629
Jennifer Cline, Public Works, 503-266-0780
Tim Gettel, Wave Broadband, 503-307-0029
Jim Stuart, Canby Utility, 503-263-4322

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

SISUL ENGINEERING, Pat Sisul

- The Cutsforth's own three properties along NE Territorial Road, adjacent to the railroad and they are planning on annexing into the City of Canby. The properties are in the R-1 zone and have three streets stubbing into the site currently and all the utilities are stubbed to the edge of the property.
- The back south section of the site is very steep and a branch of Willow Creek runs along it and it is not developable due to the excessive grades.
- We put together a layout of the site and we would like to discuss all the planning options available. There are two existing homes on site and tax lot 800 by NE Territorial Road will remain, but we will modify the access bringing it through the development rather than coming off NE Territorial Road and utilize a portion of the existing driveway with a sidewalk along the driveway with the assumption the city would want a pedestrian connectivity to NE Territorial Road. The Cutsforth's home would remain on lot 16 and they would like to keep their water well for the time being and we want to make sure this will not be a problem. Jim said he did not have an issue with it unless the city has any codes to prevent them from keeping the well. Pat said the only complication we have is the storm drainage and keeping the drywells 267 ft away from the well.

CURRAN-MCLEOD ENGINEERING, Hassan Ibrahim

- There is sanitary sewer available at NE Territorial Road, NE 19th Court, NE 20th Avenue and N Walnut Street. The two houses are on septic and Frank said yes. Hassan said when we reconstructed NE Territorial Road we did provide a sewer lateral stub for the house at 2265 NE Territorial Road and when you want to connect after your septic fails you can make the connection. There will be system development charges (SDC) for the sewer and are you planning on keeping the houses on septic and Frank said he did not know yet. Pat said they would be on septic until the time they develop and I would assume be on city sewer. Bryan

said there is an ordinance and I think when a gravity sewer line is within 100 ft of your structure you are required to tie into it. What I do not know is if it applies to a water line and you would need to check. Hassan said from what I am hearing you will need to make those connections to the sewer. Pat asked if Hassan could provide him with the NE Territorial Road improvement as-builts, how deep the sewer lateral was on NE Territorial Road and was it behind the sidewalk and Hassan said it was very deep and yes it was stubbed behind the sidewalk.

- How wide are you planning on these streets and Pat said NE 19th Court, NE 20th Avenue and N Walnut Street are all stubbed to the property under the old standard, which is 40 ft wide right-of-way (ROW) and 36 ft wide paved curb to curb. I would expect to take NE 19th Court and keep it at a 36 ft wide street with curb tight sidewalks for the little extension and the same with NE 20th Avenue. On N Walnut Street we would keep the existing section and transition and build this street with the current 34 ft paved curb to curb along with a planter strip. This whole neighborhood is built with the 40 ft ROW and I know when we built Dinsmore Estates we were the last subdivision to come in and we kept the 40 ft ROW through this last piece to keep it similar with the existing. Our question is should we treat this subdivision like the existing and Bryan said you are planning on 34 ft wide with planter and Pat described how the streets would be laid out. Bryan stated you are definitely moving towards our new standards and it makes sense doing the transitions as you described. Hassan said the bulb needs to be 48 ft curb radius and I do not like this corner here (lot 12) and if we can sweep it into the eyebrow by shaving it off a bit.
- Jerry, Jennifer and I visited the site and you did not make mention getting rid of the existing pond. I think we agreed in principle to do away with the pond except there is another pipe from what I can see that goes northwest into the pond and it does not show on the plan. My thoughts are it is an overflow from the drywell and Pat said yes this catch basin goes into the pond and Hassan said it needs to be capped. We want the pond to go away and since you are placing drywells in and we want to do an overflow into Willow Creek and Jennifer said we have a couple of concerns, one is a drywell on this site is failing on N Walnut Street and Pat said this is just a sedimentation catch basin and when we designed the subdivision we did not put any drywells in and it drains into an infiltration pond. Jennifer said we need to have a report stating these drywells will function and I think because this is a tributary going to the Willamette River you may need to get approval from DEQ to have the outlet to the creek and they will want to see what pretreatment is going to happen. I am trying to get away from having manholes and access points and easements on private property because our vactor truck cannot get to them. Pat said this pond is not public and it is not part of the Cutsforth's subdivision and decommissioning it is between the Cutsforth's and the Netter's to workout. The Netter's own it and do the maintenance on the pond and it is the Netter's long term plan in the future for both parties to get a lot out of it and I put it in the plans for us to discuss it today. If this cannot be done or too expensive to decommission, then they will probably take this area next to it and put in their own pond rather than drywells with an overflow to the river. This is the fallback and our experience with drywells in this area is questionable and Jerry said they work but they are slow. Pat said this is the reason for the overflow and we would have to test it and see what we can get out of it. Jerry said they were not getting the depth through the clay and had to go to a depth of 32 ft. Hassan asked if the city had an

NPDES MS4 permit which allows us to discharge into waterways and Jennifer will check and see if the city has an outfall permit. Hassan said you will have to submit to DEQ if we do not have the MS4 permit on file. Pat said if this becomes too difficult to do we would just leave the pond alone and forget this half a lot and put in another pond with a drywell overflow. Hassan said in his opinion it will not be difficult it is just a matter of treatment and Pat said the reason for this manhole is when you get to the top of the bank it drops off and you need something back there to make a grade change. This is more of a subdivision question than an annexation question and we want to make sure we are thinking on the same level. Hassan said we are pushing for the overflow due to selfish reasons because we have problems on the other side of this project site and we want to alleviate the problem, we would like to push for the overflow. Jerry said he has all the drywells connected in the area and this could potentially go back the other way into NE Territorial Road. We put in a 12 inch pipe and it is something to think about and Pat said when we get to that point we need to go to the site and discuss access. Jennifer said she would need an easement from the Netter's and Pat said the manhole is already here and has a pipe headed in that direction. We were thinking in the future it would go that way, but it can be easily changed. We will give you an easement, either way, it ends up going.

- All private storm stays on site.

CITY OF CANBY, PUBLIC WORKS DEPARTMENT, Jennifer Cline

- Just make the transition back further for the streets at the property lines.

CANBY UTILITY, ELECTRIC DEPARTMENT, Gary Stockwell

- The annexation policy will apply and currently, the property is served by Portland General Electric (PGE) and upon annexation, it will become a customer of Canby Utility. However, the actual cutover is deferred until development takes place on the property. The two existing homes will be incorporated into the subdivision and hooked up to Canby Utility. PGE has varied on the buyout costs and some of the subdivisions they remove their equipment and work with the developer directly and some of the subdivisions they will have us pay a buyout. If we are involved we would pass the costs onto the development fees.
- We have stubs from the previous developments in place to serve the property and also some conduits on NE Territorial Road and when you do your street improvements we will extend the conduits. Pat said we are planning on removing the driveway approach and Gary said we will place it back of sidewalk.
- The city can decide if they are comfortable with the current street lighting or if they want to add a light.
- Once the subdivision plan is approved send me the plan and I will put together an electrical design.

CANBY UTILITY, WATER DEPARTMENT, Jim Stuart

- As far as any water concerns we have already discussed it and as far as looping the system lots 1 and 3 will be coming off NE Territorial Road and the water line if very deep. The houses on wells, if you decide to connect to our system you will need to have a backflow prevention. Should they decide to decommission the wells, either one they will need to send

us a copy of all the decommissioning documents. Bill said you will be using a smaller line feeding lots 2 and 4 because they will be the only lots on this end of the line. Pat said there is a water main running through here and it was put in solely to loop the system because at the time we could not have dead end mains and no one is hooked to this line and Jim said we will look at it and get back to you. Pat said there is a gate valve at either end.

WAVE BROADBAND, Tim Gettel

- Tim asked Gary when he completes his electrical design to send him a copy and asked Pat to let him know when the trench is open and available.

CITY OF CANBY, PLANNING DEPARTMENT, Bryan Brown

- I do not know how much of these back lots are developable because of the steep slope, lots 14 through 17 are too big for an R-1 zone and you are not able to lot average because there are so many oversized lots. The provision in the code allowing you to do lot averaging will not work because you would have to shrink the other lots to compensate for the huge ones. Pat said the land right behind the house begins the fall and Bryan suggested bringing the looped roadway behind the houses to make it work. Discussion ensued on the large lot size. A proposed decision was to do a tract for each of the lots 14 through 17 and have each lot owner responsible for their tract maintenance. The rest of the design looks good.
- Evan though the traffic is flowing through the existing developed streets I believe we need to do a bare minimum traffic study. You will need to provide us with a $500.00 deposit to do a scope of work and hopefully, only a traffic generated letter will be needed. The cost is at least a $1,750.00, but I do not know if that will be the cost and I cannot guarantee there will not be anything else. Pat asked about the driveway and pedestrian connection and Bryan said there would not be any way you could add the pedestrian walkway after the existing home was sold, but if it is already existing they would accept it. Pat said we put the sidewalk here because part of the driveway falls on the railroad property and we cannot put the sidewalk on that side and keep much of the existing driveway. Bryan said you should make sure you have the full width of the driveway and Hassan asked if the fire department would have an issue and Pat said he thought they would use NE Territorial Road. Jennifer said you will probably have to add a hydrant for the fire department requirements. Pat said he will talk to Todd Gary about the fire department issues.
- Pat asked about the demonstration for analysis on the most current annexation and Bryan said he would send him a copy of the staff report on the latest annexation.
- You will need to have a neighborhood meeting.
- I put a question mark on the date of June 20th for the Planning Commission meeting, because I do not think you can make it and I am thinking either July or August.

IV. Neighborhood Meeting Notice & Notes

SISUL ENGINEERING
A Division of Sisul Enterprises, Inc.
375 PORTLAND AVENUE, GLADSTONE, OREGON 97027
(503) 657-0188
FAX (503) 657-5779

May 11, 2018

RE: Neighborhood Meeting for proposed annexation
Assessor Map 31E27DB, Tax Lots 00601, 00800, 00900
2265 & 2285, NE Territorial Road

Dear Neighborhood Property Owner or Resident,

You are invited to attend a neighborhood meeting to discuss a proposal by Frank and Kathe Cutsforth to annex 3 parcels on NE Territorial Road into the City of Canby. The 3 parcels total 9.0 acres and are located near the Territorial Road intersection with 99E. A map of the property is located on the reverse side of this letter. You are receiving this notice because you own land or reside within 500 feet of the site.

The meeting will occur at 6:00 pm on Thursday, May 31st, 2018 at Cutsforth's Olde Town Hall, located upstairs at 225 NE 2nd Avenue. If needed, an elevator is located on the southeastern side of the building, facing the railroad.

We will provide a short presentation on the City of Canby annexation process and the features of the site, then we will open the meeting for questions that you may have. The meeting is anticipated to last 30-40 minutes and we will be available to answer questions following the meeting. We look forward to seeing you there.

Thank you,

Patrick A. Sisul, P.E.
Project Manager


SITE

31E27CA00208
Lori Andersen
1890 N Teakwood St
Canby, OR 97013

31E27DC00103
Timothy Austen & Rebekah Robinson
1873 N Teakwood Cir
Canby, OR 97013

31E27DB01300
Mary & Eric Baldwin
2057 N Vine St
Canby, OR 97013

31E27DB02300
Tomi Boyd
2066 N Vine St
Canby, OR 97013

31E27DB04001
Jack & Ruth Brito
2096 N Walnut St
Canby, OR 97013

31E27DC00109
W Burnum Jr
1821 N Teakwood Cir
Canby, OR 97013

31E27AD01500
City Of Canby
Po Box 930
Canby, OR 97013

31E27DB00508
Jeremy & Denise Conroy
1988 NE 19th Ave
Canby, OR 97013

31E27DB00601
Frank & Kathleen Cutsforth
Po Box 261
Canby, OR 97013

31E27DB01900
Joel & Thea Cutsforth
2051 NE 19th Ave
Canby, OR 97013

31E27DC00123
Richard Angelozzi & Lynn Roberta
1832 N Teakwood Cir
Canby, OR 97013

31E27DB03100
Charles Bailey
2101 N Walnut St
Canby, OR 97013

31E27DB01800
Douglas & Doborah Berkner
2027 NE 19th Ave
Canby, OR 97013

31E27DB02600
Squire Bozorth
2102 N Vine St
Canby, OR 97013

31E27DB00528
Lawrence Brons
2024 NE 21st Ave
Canby, OR 97013

31E27DD00600
Canby Ch Of The Nazarene Church Of
2323 SE Territorial Rd
Canby, OR 97013

31E27DB02500
Clinton & Tami Coleman
2114 N Vine St
Canby, OR 97013

31E27DB00200
Cowgirl Llc
21211 Olmstead Rd NE
Aurora, OR 97002

31E27DB00800
Frank & Kathleen Cutsforth
Po Box 261
Canby, OR 97013

31E27DB00524
Todd & Sharon Davis
1957 NE 20th Ave
Canby, OR 97013

31E27DB00513
Arneson Glen R (Trustee)
1924 NE 19th Ave
Canby, OR 97013

31E27DB04000
Donna & Randy Baker
2110 N Walnut St
Canby, OR 97013

31E27DB00509
Cheryl Boyce
1972 NE 19th Ave
Canby, OR 97013

31E27DB02700
John & Karen Brattain
2090 N Vine St
Canby, OR 97013

31E27DB00502
Marianne Bunnell
1851 NE 19th Ave
Canby, OR 97013

31E27DC00119
Dennis & Kay Carter
1870 N Teakwood St
Canby, OR 97013

31E27DB00546
Kenneth & Laura Collman
1938 NE 20th Ave
Canby, OR 97013

31E27DC00110
Joseph Cubillas
1819 N Teakwood Cir
Canby, OR 97013

31E27DB00900
Frank & Kathleen Cutsforth
Po Box 261
Canby, OR 97013

31E27DB03700
Raymond & Dorothy Davis
2142 NE 20th Ave
Canby, OR 97013

31E27DB00504
William Deller Jr
1921 NE 19th Ave
Canby, OR 97013

31E27DB03400
Christina Demulling
2015 N Walnut St
Canby, OR 97013

31E27DB02400
Mark & Dawn Depner
2078 N Vine St
Canby, OR 97013

31E27DC00115
Robin Downing & Downing Robin
1852 N Teakwood Cir
Canby, OR 97013

31E27DC00120
Jay & Maureen Formick
1876 N Teakwood St
Canby, OR 97013

31E27DC00108
James Frackowiak
1833 N Teakwood Cir
Canby, OR 97013

31E27DB00516
Richard Fry
401 SE 7th Ave
Canby, OR 97013

31E27DB01100
Ronald Gamble
2089 N Vine St
Canby, OR 97013

31E27DB00505
Anne Hansberry
1945 NE 19th Ave
Canby, OR 97013

31E27DC00104
William & Mary Hanson
Po Box 23
Canby, OR 97013

31E27DC00105
Donald Hart
1847 N Teakwood Cir
Canby, OR 97013

31E27DC00126
Keith & Cara Hawkins
1863 N Teakwood St
Canby, OR 97013

31E27CA00210
William & Marcine Rucker
1886 N Teakwood St
Canby, OR 97013

31E27DC00112
Elnoy Hessian
15623 Village Dr
Lake Oswego, OR 97034

31E27DB00514
Elaine Hill
1912 NE 19th Ave
Canby, OR 97013

31E27DB00510
Frank & Kimberly Hosford
1952 NE 19th Ave
Canby, OR 97013

31E27DB00506
Hostetler Ronald B (Trustee)
1967 NE 19th Ave
Canby, OR 97013

31E27DB00522
Paul & Pamela Huggins
1903 NE 20th Ave
Canby, OR 97013

31E27CA00207
James Hunter
1894 N Teakwood St
Canby, OR 97013

31E27DA00900
Gustafson Steve
2350 SE Territorial Rd
Canby, OR 97013

31E27DB00512
Reimer Jackson
1936 NE 19th Ave
Canby, OR 97013

31E27DB01600
Cynthia Jeskey
2009 N Vine St
Canby, OR 97013

31E27DB03800
Douglas & Chareen Kayser
2120 NE 20th Ave
Canby, OR 97013

31E27DB03200
Kenneth & Barbara Kendall
2095 N Walnut St
Canby, OR 97013

31E27DC00111
Sally Kloosterman
1810 N Teakwood Cir
Canby, OR 97013

31E27DB00511
David & Valerie Koch
1944 NE 19th Ave
Canby, OR 97013

31E27DB01400
Catherine Lear
2041 N Vine St
Canby, OR 97013

31E27DB01700
Cynthia Leask
2015 NE 19th Ave
Canby, OR 97013

31E27DB01500
Michael & Laura Lightner
2025 N Vine St
Canby, OR 97013

31E27DB00521
Cameron Long
1889 NE 20th Ave
Canby, OR 97013

31E27DC00114
Joseph & Nancy Meyer
1846 N Teakwood Cir
Canby, OR 97013

31E27DC00118
Janice Neff
1868 N Teakwood St
Canby, OR 97013

31E27DB00100
Oregon Conference Adventist Churches
19800 Oatfield Rd
Gladstone, OR 97027

31E27DC00106
Timothy & Roxann Peterson
1845 N Teakwood Cir
Canby, OR 97013

31E27DC00122
Alex Poe & Lyn Jessica
1848 N Teakwood Cir
Canby, OR 97013

31E27DC00127
Public Park
Po Box 930
Canby, OR 97013

31E27DB00525
Patrick Schauer
1969 NE 20th Ave
Canby, OR 97013

31E34A 00400
Schweitzer Gwen (Trustee)
22600 S Highway 99e
Canby, OR 97013

31E27CA00211
James & Diane Shishido
1884 N Teakwood St
Canby, OR 97013

31E27DC00125
Roger & Ann Skoe
1853 N Teakwood Cir
Canby, OR 97013

31E27DC00124
David & Sheila Morehouse
1822 N Teakwood Cir
Canby, OR 97013

31E27DB03300
Nick & Jamie Netter
2045 N Walnut St
Canby, OR 97013

31E34A 00500
Steven Skinner
Po Box 27
Canby, OR 97013

31E27DC00117
Steven Pfeifer
Po Box 641
Canby, OR 97013

31E27DB03600
Gary & Lisa Potter
2149 NE 20th Ave
Canby, OR 97013

31E27DB00544
Melinda Reynolds-Pena
1983 NE 21st Ave
Canby, OR 97013

31E27DC00121
David & Mariann Schindler
1864 N Teakwood Cir
Canby, OR 97013

31E27CA00212
A Scott
130 SW 2nd Ave STE 102
Canby, OR 97013

31E27DB00515
Kenneth & Jane Simmons
1896 NE 19th Ave
Canby, OR 97013

31E27DB00526
Gene Smith & Elizabeth Luchini
1991 NE 20th Ave
Canby, OR 97013

31E27DC00101
Geoff Mowry
1879 N Teakwood Cir
Canby, OR 97013

31E27DB04100
Nick & Jamie Netter
2045 N Walnut St
Canby, OR 97013

31E27DB02100
Petersen Lori H (Trustee)
2018 N Vine St
Canby, OR 97013

31E27DB00545
Thomas Pierce
1962 NE 20th Ave
Canby, OR 97013

31E27CA00213
Public Park
Po Box 930
Canby, OR 97013

31E27DB02200
Phillip & Jennifer Roland
2030 N Vine St
Canby, OR 97013

31E27DB01000
Ryan & Nicole Schulze
2105 N Vine St
Canby, OR 97013

31E27CA00209
Jonathan & Brianna Sheckard
1878 N Teakwood St
Canby, OR 97013

31E34A 00501
Steven Skinner
Po Box 27
Canby, OR 97013

31E27DB00527
Zane & Gloria Smith
2015 NE 20th Ave
Canby, OR 97013

31E27DB03900
Todd & Theresa Snelson
2084 N Walnut St
Canby, OR 97013

31E27DB02900
Shane & Susan Strangfield
2042 N Vine St
Canby, OR 97013

31E27DB00503
Ronald & Annette Swor
1883 NE 19th Ave
Canby, OR 97013

31E27C 00600
Linda Thomas
1864 N Redwood St
Canby, OR 97013

31E27DB00523
Bruce Tuner & Margaret Gratton
1935 NE 20th Ave
Canby, OR 97013

31E27 01000
Gentle Steve
1400 Douglas St # 1640
Omaha, NE 68179

31E33CC08200
Gentle Steve
1400 Douglas St # 1640
Omaha, NE 68179

31E27DB02000
Marilyn & John Warnell
2063 NE 19th Ave
Canby, OR 97013

31E27DB03000
Timothy Weaver
Po Box 814
Newport, OR 97365

31E27DC00107
Sharon Weaver & Bruce William
1839 N Teakwood Cir
Canby, OR 97013

31E27DC00116
Daniel Weber & Susan Carolyn
1858 N Teakwood St
Canby, OR 97013

31E27DC00102
William Walker
1875 N Teakwood Cir
Canby, OR 97013

31E27DB03500
James & Yvonne Wisely
2127 NE 20th Ave
Canby, OR 97013

31E27DC00113
Richard Wright
1836 N Teakwood Cir
Canby, OR 97013

31E27DB01200
Young Diane Morgan (Trustee)
2073 N Vine St
Canby, OR 97013

Neighborhood Meeting Attendance Sheet May 31, 2018

	Name	Address
1.	PAT SISUL	375 PORTLAND AVE. GLADSTONE
2.	Clint Coleman	2114 N Vine St Canby,
3.	Tim Weaver	2060 NE 19th Ave Canby
4.	Margaret Gratton	1935 NE 20th Ave Canby
5.	Bruce Turner	"
6.	TIM STUART	1320 N. Holly CANBY, OR 97013
7.	Lodell Halvorson	358 NW 1st, Canby OR
8.	Dave Koch	1944 NE 19th Ave
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		
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NE Territorial Road Annexation - Neighborhood Meeting
May 31, 2018, 6:00 pm @ Cutsforth's Olde Town Hall

Eleven people attended the meeting. Six were neighbors of the site, 2 were real estates agents representing a neighbor, one was the applicant's representative, and the 2 applicants were also in attendance. A sign in sheet is attached, although not everyone in attendance signed in.

The meeting began at 6:00 PM, some attendees arrived late.

Large maps were provided that showed the annexation area, including an Assessor Maps, an Aerial Map, the City of Canby Zoning Map, the City of Canby Comprehensive Plan Map, and a plan of a potential subdivision layout.

Pat Sisul began the meeting by discussing how the land use process works and that the Neighborhood meeting is the first opportunity for neighbors of the annexation area to have input on an application. Other opportunities for input would be after application is made and the City Staff requests comments from neighbors, or if they choose to testify at the Planning Commission or City Council hearings.

After a brief explanation of the process, the presentation moved to a discussion of the site proposed for annexation. The site is currently in Clackamas County, zoned RRFF-5. The City's Comprehensive Plan identifies the site as LDR, Low Density Residential. It would have Z-1 zoning when annexed into the City. R-1 zoning typically permits lots of between 7,000 and 10,000 square feet, although exceptions are available under certain circumstances. All housing in the R-1 zone is to be Single Family detached residential.

It was explained that no application has been submitted to the City of Canby at this time. This meeting is required before an application is submitted. It is expected that the application would be ready to submit before the end of June. This would likely lead to a Planning Commission hearing in August or September, with a City Council hearing approximately one month later. No subdivision is proposed at this time. A subdivision will likely be developed later, although the applicants aren't sure of what they want to do. After the discussion of the proposed development plan, the meeting was opened up for questions.

Below is a summary of topics that were discussed concerning the proposed annexation:

- Who are you here representing, the City? *No, I work for the Cutsforth's.*
- Why doesn't the site stay in the County, what's the negative? *The property cannot be further divided if it remains in the County. The applicants have toyed with the idea of annexing for 12 years and the time appears to right to them now, for a variety of reasons.*
- It's surprising that the site is not already in the City of Canby, why isn't it? *The land has just never been brought in. It's the last remaining piece along this side of Territorial Road that is in the County, although most parcels on the other side of Territorial are not in the City.*
- Traffic is a concern, what is your opinion of a roundabout at Territorial Road and Redwood Street? *That may be a good location for a roundabout. They take a lot of real estate, but the*

City owns a lot of real estate on the north side of Territorial Road at the intersection. I'm not an expert on warrants for traffic management devices such as those. The City would have their traffic engineer weigh in to make the determination.

- Would you expect most of the traffic from the future subdivision to use Walnut or Vine? *I would expect most of the traffic to use Walnut, although there would be some additional vehicles using Vine.*
- There was a project approved on Redwood Street that permits lots as small as 5,000 sf. *The east side of N Redwood Street is in a Master Planned area known as the N Redwood Development Concept Plan. That Master Plan provided for density transfer when land was dedicated for parks. That was in the Master Plan that the City Council approved. I don't know that it was realized at the time what a large impact that density transfer might have on a neighborhood.*
- What prevents this site from having lots of 5,000 square feet? *The area off of N Redwood Street was master planned, and that master plan went to the City Council for approval that allowed special development provisions. This site does not have to be master planned at the time of annexation. It will simply come into the City as R-1 zoned land that must be the standards of the R-1 zone. The City Code does allow other types of developments, such as Planned Developments, that offer flexibility at the subdivision stage. These are uncommon in Canby and although they are permitted, they are unanticipated. The Cutsforth's have an idea in mind for the site and small lots are not their plan.*
- We heard that the project off of Redwood is building a bridge and filling wetlands, can they do that? *I'm not aware of that. Under certain circumstances wetlands can be filled, but there is mitigation that has to be done in order to compensate for the loss of the resource.*
- Do they have a say in what the subdivision looks like if they're not the developer? *They can, it depends upon who they choose to sell the land to at the time of development. Land deals can be structured in different ways. There was a large development approved off of SE 13th Avenue that was master planned. Although the land was zoned R-1.5, which permitted lots as small as 5,000 square feet, the original property owners wanted the lots to be larger. The average lot size ended up being between 6,200 and 6,300 square feet.*
- Does the City want to know what the homes will look like, such as size, architecture, etc. when a subdivision application is submitted? *No, the City does not ask for that information.*
- How large will the homes be? *We expect that the homes will be of similar size and likely similar style to the rest of the neighborhood. Although the builder isn't known, the homes that will be constructed need to be within a certain range. The land is too expensive, and the lots will be too large to build starter homes in the subdivision, while the neighborhood won't support multi-million-dollar homes. There is an appropriate range and builders know what that range is, it is similar to other homes recently constructed.*
- What will happen to the small area next to the existing infiltration pond in Walnut Crossing? *That area is not large enough to be a lot. The Netters own the pond next door and it's possible that the pond could be decommissioned, and the two small parcels could be combined into a single lot. There are more options available for storm drainage disposal now than there were back when Walnut Crossing subdivision was developed. The minimum distance between drywells and wells used to be 500 feet, but that was dropped to 267 feet when the City of Canby adopted their Stormwater Master Plan. So, it's now possible that the existing pond could be eliminated and served by a drywell. We expect that no matter what the*

storm drain facility is, that there will most likely be an overflow through the subdivision to the creek on the south side of the property.

- Could that area be a park? *It is up to the City of Canby as to whether they want park land in a subdivision or money in lieu of park land. To this point, the City has expressed that they will likely want the money in lieu of the park land. A lot of small parks becomes problematic because it means another unload and load of the park crew's mower to mow another small site. The City will make a final decision regarding a park at the subdivision stage.*
- What is the timeline? *The annexation application will likely be heard before the Planning Commission in August or September. After the Planning Commission, it goes to City Council, approximately 30 days later. It used to be that there was a public vote on whether land was annexed into the City, but that was overturned state-wide a couple of years ago. If approved by City Council, then work on a subdivision application could begin shortly after that. It would be conceivable to get the point of where underground work on a subdivision could begin in approximately one year, although, Frank and Kathe aren't sure what they want to do, after the land is annexed, and therefore, it isn't as likely that this site will be developed into a subdivision that quickly.*

The meeting ended at approximately 7:30 PM, although informal discussion did continue for several minutes.

Notes prepared by Pat Sisul, Sisul Engineering

V. Annexation Petition

ANNEXATION PETITION
CITY OF CANBY, OREGON

Consent to annex is hereby given by the undersigned, who represent more than half the owners of land in the territory, and who also own more than half of the land and real property in the contiguous territory, which represents more than half of the assessed value of all real property in the contiguous territory.

By signing below, I indicate my consent to and support of being annexed into the City of Canby, Oregon.

Property	Name of Owner	Signature	Acres	Assessed Value
Township 3S, Range 1E, Section 27DB, Tax Lot #'s 601, 800, 900	Frank Cutsforth		8.96	$931,363
	Kathleen Cutsforth			
TOTALS				
% Signed			**100%**	**100%**

VI. Transportation Planning Rule Letter

MEMORANDUM

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

DATE: June 4, 2018

TO: Bryan Brown, City of Canby

FROM: Christopher S. Maciejewski, PE, PTOE
Jordin Kelly, EIT

SUBJECT: Canby Cutsforth Annexation – Transportation Planning Rule (TPR) Analysis P#11010-100

This memorandum summarizes how the requirements of Oregon Administrative Rule (OAR) 660-012-0060, the Transportation Planning Rule (TPR), are met for a proposed annexation for a property on the southwest corner of the Highway 99E/NE Territorial Road intersection in Canby, Oregon (tax lots 31E27DB00 numbers 601, 800 and 900). There are currently two single family houses on the site that will remain as part of the proposed 22 unit subdivision (net difference of 20 single family units). The following section describes the consistency of the annexation request with both the City's Comprehensive Plan and Transportation System Plan as well as documents the net difference in trip generation between what is proposed and what is existing.

Property Zoning Designation

The proposed annexation is located outside Canby's City Limits in unincorporated Clackamas County and is currently designated Clackamas County RRFF-5: Rural Residential Farm Forest. The City's comprehensive plan designation is LDR: Low Density Residential and the proposed zoning is R-1: Low Density Residential. Therefore, the proposed zoning is consistent with the City's adopted Comprehensive Plan designation. Table 1 below summarizes the zone change information for these properties.

Table 1: Proposed Annexation at Tax Lot 31E27DB00 numbers 601, 800 & 900

Property	Tax Lots	Lot Size (acres)	Proposed Zoning	Clackamas County Zoning	City of Canby Comprehensive Plan Land Use
2285 & 2265 NE Territorial Road	31E27DB00 numbers 601, 800 & 900	9	R-1 (Low Density Residential)	RRFF-5 (Rural Residential Farm Forest)	LDR (Low Density Residential)

Transportation Planning Rule Findings

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 parcel. 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

Each of these criteria is addressed below:

(a) The proposed zoning is consistent with the City's Comprehensive Plan and adopted Transportation System Plan (TSP), including a review of the forecasted development types and amounts from the travel demand forecasts utilized for the TSP.[1]
(b) The City of Canby has adopted the Transportation System Plan (2010) and the proposed zoning is consistent with the TSP.
(c) This subsection 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.

Based on the discussion above, all three criteria are satisfied; therefore, the proposed rezone will not have a significant effect on the transportation system. Additionally, the transportation assessment performed as part of the City's TSP accounts for the proposed uses related to redevelopment of the property, therefore the proposed rezoning is consistent with the acknowledged transportation system plan.

Trip Generation Documentation

Trip generation is the method used to estimate the number of vehicles that are added to the surrounding roadway network as a result of the proposed project. The trip generation for the proposed project was estimated using similar land uses as reported by the Institute of Transportation Engineers (ITE).[2]

Trip generation was calculated for the proposed 22 dwelling units (ITE Land Use Code 210: Single Family Housing) as well as the existing two dwelling units for the AM and PM peak hour, and daily trips.

As shown in Table 2 at the top of the next page, the net vehicle trips (proposed minus existing) expected to be added to the surrounding roadway network is 19 (5 in, 14 out) AM peak hour trips, 23 (14 in, 9 out) new PM peak hour trips, and 230 daily trips.

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[1] These tax lots are included in TAZ 118 in the Canby Small Community Model which assumed 124 existing households and 166 future households.
[2] Institute of Transportation Engineers (ITE) manual, Trip Generation, 9th Edition.

Table 2: Net Trip Generation Summary

ITE Land Use	ITE Code	Daily Trips	AM Peak Hour			PM Peak Hour		
			IN	OUT	TOTAL	IN	OUT	TOTAL
Proposed: 22 Dwelling Units	210 (Single Family Detached Housing)	258	5	15	20	15	9	24
Existing: 2 Dwelling Units	210 (Single Family Detached Housing)	28	0	1	1	1	0	1
Net Vehicle Trips Added (Proposed – Existing)		**230**	**5**	**14**	**19**	**14**	**9**	**23**

VII. Deeds & Legal Descriptions

Customer Service Department
121 SW Morrison St., Suite 300
Portland, OR 97204
Phone: 503.219.TRIO (8746)
Fax: 503.790.7872
Email: cs.portland@firstam.com
Date: 2/7/2018

OWNERSHIP INFORMATION

Owner: Frank & Kathleen Cutsforth
CoOwner:
Site: OR 97013
Mail: PO Box 261 Canby OR 97013

Parcel #: 00774987
Ref Parcel #: 31E27DB00601
TRS: 03S / 01E / 27 / SE
County: Clackamas

PROPERTY DESCRIPTION

Map Grid: 746-F4
Census Tract: 022901 Block: 1027
Neightborhood: CANBY
School Dist: 86 CANBY
Impr Type:
Subdiv/Plat:
Land Use: RSFR - SINGLE FAMILY RESIDENCE
Zoning: Clackamas Co.-RRFF5 - Rural Residential Farm Forest 5 Acre Min
Watershed: Abernethy Creek-Willamette River
Legal: Section 27 Township 3S Range 1E Quarter DB TAX LOT 00601|Y|179081

ASSESSMENT AND TAXATION

Market Land: $33,396.00
Market Impr: $0.00
Market Total: $33,396.00 (2017)
% Improved: 0%
Assessed Total: $14,776.00 (2017)
Levy Code: 086-020
Tax: $204.09 (2017)
Millage Rate: 13.8122

PROPERTY CHARACTERISTICS

Bedrooms:	0	Building Area:	0 SqFt	Year Built:	0
Baths, Total:	0	First Floor:	0 SqFt	Eff Year Built:	
Baths, Full:	0	Second Floor:	0 SqFt	Lot Size Ac:	1.74 Acres
Baths, Half:	0	Basement Fin:	0 SqFt	Lot Size SF:	75,794 SqFt
Total Units:	1	Basement Unfin:		Lot Width:	0
# Stories:		Basement Total:	0 SqFt	Lot Depth:	0
# Fireplaces:	0	Attic Fin:	0 SqFt	Roof Material:	
Cooling:		Attic Unfin:	0 SqFt	Roof Shape:	
Heating:		Attic Total:	0 SqFt 0 SqFt	Ext Walls:	
Building Style:		Garage:	0 SqFt		

SALES AND LOAN INFORMATION

Owner	Date	Doc #	Sale Price	Deed Type	Loan Amt	Loan Type
		87-00524	$0.00		$0.00	

WARRANTY DEED — STATUTORY FORM
(INDIVIDUAL or CORPORATION)

EARL OLIVER and SABINA OLIVER, husband and wife

Grantor, conveys and warrants to .... FRANK D. CUTSFORTH and KATHLEEN M. CUTSFORTH, husband and wife

A tract of land in the Walter Fish D.L.C. No. 45, in Section 27, Township 3 South, Range 1 East of the Willamette Meridian, in Clackamas County, Oregon, desribed as follows:

Beginning at the most Westerly corner of that tract conveyed to Melisa Churchill, et al, by Deed Recorded in Book 313, Page 409, Clackamas County Records, said corner being North 0° 39' 30" West 112.35 feet North 32° 45' 30" East 1301.40 feet, and North 60° 42' 30" West 388.75 feet from the one-quarter corner between Sections 27 and 34, in said Township and Range; thence North 32° 45' 30" East along the Northwesterly line of said Churchill Tract 574.83 feet to the most Northerly corner thereof; thence North 60° 41' 15" West along the Southwest line of that tract conveyed to Richard Greer, et al, by Recorder's Fee No. 78-37881, Clackamas County Records, and the Westerly projection thereof, 132.00 feet; thence South 32° 45' 30" West 573.97 feet; thence South 60° 33' 45" East along the Westerly projection of the Southerly line of that tract conveyed to Melissa Churchill, et al, as aboved mentioned, 132.00 feet to the most Westerly corner of said tract and the point of beginning.

87 00524

87 00524

This instrument does not guarantee that any particular use may be made of the property described in this instrument. A buyer should check with the appropriate city or county planning department to verify approved uses.

Encumbrances: "This instrument will not allow use of the property described in this instrument in violation of applicable land use laws and regulations. Before signing or accepting this instrument, the person acquiring fee title to the property should check with the appropriate city or county planning department to verify approved uses."

Rights of the public and of governmental bodies in and to that portion of the premises herein described lying below the high water mark of an unnamed creek.

The true consideration for this conveyance is $ 17,400.00 (Here comply with the requirements of ORS 93.030*).

Dated this 5th day of January, 1987; if a corporate grantor, it has caused its name to be signed by order of its board of directors.

Earl Oliver
EARL OLIVER

Sabina Oliver
SABINA OLIVER

STATE OF OREGON,)
County of Clackamas) ss.
January 5, 19 87)

Personally appeared the above named EARL OLIVER and SABINA OLIVER and acknowledged the foregoing instrument to be their voluntary act and deed.

Before me:
Notary Public for Oregon
My commission expires: 11-30-87

STATE OF OREGON, County of) ss.
, 19

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

Before me:
Notary Public for Oregon
My commission expires:

* If the consideration consists of or includes other property or value, add the following:
"The actual consideration consists of or includes other property or value given or promised which is part of the whole consideration (indicate which)".

Earl Oliver and Sabina Oliver
117 NE 3rd
Canby, Oregon 197013
Grantor's Name and Address

Frank D. and Kathleen M. Cutsforth
2285 NE Territorial Road
Canby, Oregon 97013
Grantee's Name and Address

After recording return to:
Frank D. and Kathleen M. Cutsforth
2285 NE Territorial Road
Canby, Oregon 97013
Name, Address, Zip

Until a change is requested all tax statements shall be sent to the following address
Frank D. and Kathleen M. Cutsforth
2285 NE Territorial Road
Canby, Oregon 97013
Name, Address, Zip

SAFECO Stock No. ORL-0303 (Rev. 4-84)

STATE OF OREGON
County of Clackamas } ss.

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

87 00524

STATE OF OREGON * COUNTY OF CLACKAMAS *
JAN 15 PM 3:35
1987

Witness my hand and seal affixed
John F. Kauffman
JOHN F. KAUFFMAN
County Clerk

Recording Certificate
CO-44 (rev. 12-86)

SAFECO TITLE INSURANCE CO. C-45876

First American Title™

Customer Service Department
121 SW Morrison St., Suite 300
Portland, OR 97204
Phone: 503.219.TRIO (8746)
Fax: 503.790.7872
Email: cs.portland@firstam.com
Date: 2/7/2018

OWNERSHIP INFORMATION

Owner: Frank & Kathleen Cutsforth
CoOwner:
Site: 2265 NE Territorial Rd Canby OR 97013
Mail: PO Box 261 Canby OR 97013

Parcel #: 00775012
Ref Parcel #: 31E27DB00800
TRS: 03S / 01E / 27 / SE
County: Clackamas

PROPERTY DESCRIPTION

Map Grid: 746-F4
Census Tract: 022901 Block: 1015
Neightborhood: CANBY
School Dist: 86 CANBY
Impr Type:
Subdiv/Plat:
Land Use: RSFR - SINGLE FAMILY RESIDENCE
Zoning: Clackamas Co.-RRFF5 - Rural Residential Farm Forest 5 Acre Min
Watershed: Abernethy Creek-Willamette River
Legal: Section 27 Township 3S Range 1E Quarter DB TAX LOT 00800|Y|179081

ASSESSMENT AND TAXATION

Market Land: $231,214.00
Market Impr: $243,670.00
Market Total: $474,884.00 (2017)
% Improved: 51%
Assessed Total: $277,304.00 (2017)
Levy Code: 086-020
Tax: $3,830.18 (2017)
Millage Rate: 13.8122

PROPERTY CHARACTERISTICS

Bedrooms: 3	Building Area: 2,800 SqFt	Year Built: 1963
Baths, Total: 1	First Floor: 1,468 SqFt	Eff Year Built:
Baths, Full: 1	Second Floor: 0 SqFt	Lot Size Ac: 1.95 Acres
Baths, Half: 0	Basement Fin: 0 SqFt	Lot Size SF: 84,942 SqFt
Total Units: 1	Basement Unfin:	Lot Width: 0
# Stories: 1	Basement Total: 0 SqFt	Lot Depth: 0
# Fireplaces: 1	Attic Fin: 0 SqFt	Roof Material:
Cooling:	Attic Unfin: 0 SqFt	Roof Shape:
Heating: Heat Pump	Attic Total: 0 SqFt 0 SqFt	Ext Walls: 2
Building Style: 14 - Single family res, class 4	Garage: 441 SqFt	

SALES AND LOAN INFORMATION

Owner	Date	Doc #	Sale Price	Deed Type	Loan Amt	Loan Type
	7/1/1993	0000050421	$139,500.00		$0.00	Conv/Unk

STEWART TITLE

AFTER RECORDING RETURN TO:

FRANK D CUTSFORTH
KATHLEEN M CUTSFORTH
PO BOX 261
CANBY, OR 97013

UNTIL FURTHER NOTICE, ALL FUTURE TAX STATEMENTS SHALL BE SENT TO:
FRANK D CUTSFORTH
KATHLEEN M CUTSFORTH
PO BOX 261
CANBY, OR 97013
TAX ACCOUNT NO.: 3S1E 27DB 00800

STATUTORY WARRANTY DEED

DIANE LOUISE NIELSEN, TRUSTEE, OF MARY FLORENCE NIELSEN REVOCABLE LIVING TRUST U/T/D 11/6/92, Grantor, conveys and warrants to FRANK D CUTSFORTH and KATHLEEN M CUTSFORTH, Husband and Wife, Grantee, the following described real property free of encumbrances except as specifically set forth herein situated in CLACKAMAS County, Oregon, to-wit:

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

The said property is free from encumbrances EXCEPT: Rights of the public to any portion lying within the boundaries of roads or highways;

THIS INSTRUMENT WILL NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY APPROVED USES.

The true consideration for this conveyance is $139,500.00.

Dated this 13th day of July, 1993.

MARY F NIELSEN REVOCABLE LVG TRUST

Diane Louise Nielsen Trustee
DIANE LOUISE NIELSEN, TRUSTEE LIVING TRUST U/T/D 11/6/92

STATE OF OREGON
COUNTY OF CLACKAMAS

Personally appeared the above named DIANE LOUISE NIELSEN, TRUSTEE of the MARY FLORENCE NIELSEN REVOCABLE LIVING TRUST UTD 11/6/92, acknowledged the foregoing instruments to be her voluntary act and deed.

OFFICIAL SEAL
DEBORAH SCHABER
NOTARY PUBLIC-OREGON
COMMISSION NO.000156
MY COMMISSION EXPIRES JAN. 06, 1995

Deborah Schaber
Notary Public for State of Oregon
My commission expires 1/6/95

93 50421

Order No. 93068148-C

EXHIBIT "A"

Being a part of the Walter Fish D.L.C. No. 45 in Township 3 South, Range 1 East of the Willamette Meridian, in the County of Clackamas and State of Oregon, bounded and described as follows, to wit:

Beginning at an iron pipe driven on the Southerly boundary of County Road No. 1485, which point is North 0 degrees 39'30" West 112.35 feet distant and North 32 degrees 45'30" East 2303.09 feet distant and North 60 degrees 42'30" West 12.00 feet distant from the one-quarter section corner between Sections 27 and 34, Township 3 South, Range 1 East of the Willamette Meridian; running thence North 60 degrees 42'30" West tracing the Southerly boundary of County Road No. 1485, aforesaid, a distance of 204.38 feet to an iron pipe; thence South 32 degrees 45'30" West parallel to the Northwesterly boundary of the right of way of the Southern Pacific Railroad Company 427.06 feet to an iron pipe; thence South 60 degrees 42'30" East 204.38 feet to an iron pipe driven at a point which is 12.00 feet Northwesterly from the Northwesterly boundary of the right of way of the Southern Pacific Railroad Company; thence North 32 degrees 45'30" East parallel to the Northwesterly boundary of said railroad right of way 427.06 feet to the place of beginning.

2

STATE OF OREGON
County of Clackamas

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

93 JUL 19 PM 2:43

Witness my hand and seal affixed

JOHN KAUFFMAN
County Clerk

Recording Certificate
CCP-R4 (Rev 6/91)

93 50421

First American Title™

Customer Service Department
121 SW Morrison St., Suite 300
Portland, OR 97204
Phone: 503.219.TRIO (8746)
Fax: 503.790.7872
Email: cs.portland@firstam.com
Date: 2/7/2018

OWNERSHIP INFORMATION

Owner: Frank & Kathleen Cutsforth
CoOwner:
Site: 2285 NE Territorial Rd Canby OR 97013
Mail: PO Box 261 Canby OR 97013

Parcel #: 00775021
Ref Parcel #: 31E27DB00900
TRS: 03S / 01E / 27 / SE
County: Clackamas

PROPERTY DESCRIPTION

Map Grid: 746-F4
Census Tract: 022901 Block: 1027
Neightborhood: CANBY
School Dist: 86 CANBY
Impr Type:
Subdiv/Plat:
Land Use: AMSC - AGRICULTURAL MISC
Zoning: Clackamas Co.-RRFF5 - Rural Residential Farm Forest 5 Acre Min
Watershed: Abernethy Creek-Willamette River
Legal: Section 27 Township 3S Range 1E Quarter DB TAX LOT 00900|Y|179081

ASSESSMENT AND TAXATION

Market Land: $339,956.00
Market Impr: $502,360.00
Market Total: $842,316.00 (2017)
% Improved: 60%
Assessed Total: $639,283.00 (2017)
Levy Code: 086-020
Tax: $8,829.90 (2017)
Millage Rate: 13.8122

PROPERTY CHARACTERISTICS

Bedrooms: 5
Baths, Total: 4
Baths, Full: 4
Baths, Half: 0
Total Units: 1
Stories: 2
Fireplaces: 1
Cooling:
Heating: Heat Pump
Building Style: 15 - Single family res, class 5

Building Area: 4,357 SqFt
First Floor: 1,455 SqFt
Second Floor: 1,441 SqFt
Basement Fin: 1,455 SqFt
Basement Unfin:
Basement Total: 1,455 SqFt
Attic Fin: 0 SqFt
Attic Unfin: 0 SqFt
Attic Total: 0 SqFt 0 SqFt
Garage: 597 SqFt

Year Built: 1984
Eff Year Built:
Lot Size Ac: 5.25 Acres
Lot Size SF: 228,690 SqFt
Lot Width: 0
Lot Depth: 0
Roof Material:
Roof Shape:
Ext Walls: 2

SALES AND LOAN INFORMATION

Owner	Date	Doc #	Sale Price	Deed Type	Loan Amt	Loan Type
CUTSFORTH,FRANK D & KATHLEEN M	5/12/2015	0000027759	$0.00	Trust	$150,000.00	
CUTSFORTH,FRANK D & KATHLEEN M	3/2/2015	0000011044	$0.00	Trust	$196,000.00	
CUTSFORTH,FRANK D & KATHLEEN M	9/26/2011	0000054410	$0.00	Trust	$270,000.00	Conv/Unk
CUTSFORTH,FRANK D & KATHLEEN M	6/27/2005	0000058999	$0.00	Trust	$172,130.00	Conv/Unk
		80-16958	$0.00		$0.00	

FORM No. 633—WARRANTY DEED (Individual or Corporate)
1-1-74

STEVENS-NESS LAW PUB. CO., PORTLAND, OR. 97204

WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS, That MARISE L. MASSEY

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

Being a part of the Walter Fish Donation Land Claim No. 45 in Township 3 South, Range 1 East of the Willamette Meridian, in the County of Clackamas and State of Oregon, bounded and described as follows, to-wit:

Beginning at the intersection of the center of a spring branch with the Northwesterly boundary of the right of way of the Southern Pacific Railway Company which point is North 0° 39' 30" West 112.35 feet distant and North 32° 45' 30" East 1357.13 feet distant from the one-quarter Section corner between Sections 27 and 34, Township 3 South, Range 1 East of the Willamette Meridian. Running thence North 32° 45' 30" East tracing the

(Continued on reverse side)

A Recording Service of Transamerica Title Ins
A-108226

(IF SPACE INSUFFICIENT, CONTINUE DESCRIPTION ON REVERSE SIDE)

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

And said grantor hereby covenants to and with said grantee and grantee's heirs, successors and assigns, that grantor is lawfully seized in fee simple of the above granted premises, free from all encumbrances except rights of the public and of governmental bodies in that portion of the above described property lying below the high water mark of Spring Branch Creek.

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

The true and actual consideration paid for this transfer, stated in terms of dollars, is $ 57,500.00 .

①~~*However, the actual consideration consists of or includes other property or value given or promised which is*~~ *the whole* ~~*consideration (indicate which).*~~① *part of the* ~~*(The sentence between the symbols ①, if not applicable, should be deleted. See ORS 93.030.)*~~

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

In Witness Whereof, the grantor has executed this instrument this 3rd *day of* May , 1980 ; *if a corporate grantor, it has caused its name to be signed and seal affixed by its officers, duly authorized thereto by order of its board of directors.*

Marise L. Massey

Marise L. Massey

(If executed by a corporation, affix corporate seal)

STATE OF OREGON, County of Clackamas) ss.
May 3rd, 1980.

Personally appeared the above named MARISE L. MASSEY and acknowledged the foregoing instrument to be her voluntary act and deed.

Before me: Walter L. Bettis, Jr.
(OFFICIAL SEAL)
Notary Public for Oregon
My commission expires: 11/22/81

STATE OF OREGON, County of) ss.
, 19 .

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

Before me:
(OFFICIAL SEAL)
Notary Public for Oregon
My commission expires:

MARISE L. MASSEY
1254 Terrace Place, Timber Terrace Apts.
Canby, Oregon 97013
GRANTOR'S NAME AND ADDRESS

FRANK D. and KATHLEEN M. CUTSFORTH
865 N. Hawthorne Street
Canby, Oregon 97013
GRANTEE'S NAME AND ADDRESS

After recording return to:

BETTIS & REIF
160 N. W. Third Ave.
Canby, Oregon 97013
NAME, ADDRESS, ZIP

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

FRANK D. and KATHLEEN M. CUTSFORTH
865 N. Hawthorne Street
Canby, Oregon 97013
NAME, ADDRESS, ZIP

SPACE RESERVED FOR RECORDER'S USE

STATE OF OREGON, County of) ss.

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

Witness my hand and seal of County affixed.

Recording Officer
By Deputy

80 16958

(Legal description continued)

Northwesterly boundary of said Railway right of way 945.96 feet to the Southwesterly right of way boundary of County Road No. 1485; thence tracing the Southwesterly boundary of said Road North 60° 42' 30" West 12.00 feet; thence parallel to the Northwesterly boundary of the right of way of the said Southern Pacific Railway Company South 32° 45' 30" West 427.06 feet; thence North 60° 42' 30" West 182.33 feet to a point; thence South 32° 34'30" West 440.00 feet, more or less, to a point in the center of the aforesaid spring branch; thence Southeasterly tracing the meander of the center of said spring branch up stream 200 feet, more or less, to the place of beginning.

Also a tract of land bounded and described as follows, to-wit:

Being a part of the Walter Fish Donation Land Claim No. 45, in Township 3 South, Range 1 East of the Willamette Meridian, in the County of Clackamas and State of Oregon, bounded and described as follows, to-wit:

Beginning at the intersection of a spring branch with the Northwesterly boundary of the right of way of the Southern Pacific Railway Company which point is North 0° 39'30" West 112.35 feet distant and North 32° 45'30" East 1357.13 feet distant from the one-quarter section corner between Section 27 and 34, Township 3 South, Range 1 East of the Willamette Meridian, said point being the most Southerly corner of that certain 2.25 acre tract of land conveyed to Melissa Churchill and John Erickson by deed recorded in Book 292, page 315, Record of Deeds of Clackamas County, Oregon; running thence Northwesterly following the meanders of said spring branch and along the Southwesterly boundary of said 2.25 acre tract 200.00 feet, more or less, to the most Westerly corner thereof; thence North 32° 45'30" East tracing the Northwesterly boundary of said tract 440.00 feet, more or less, to an iron pipe driven at the Northwest corner of said tract; thence North 60°42'30" West 194.37 feet; thence South 32°45'30" West 574.83 feet to a point; thence South 60°42'30" East 388.75 feet to a point on the Northwesterly boundary of the right of way of the Southern Pacific Railway Company aforesaid; thence tracing the Northwesterly boundary of said right of way North 32°45'30" East 55.73 feet to the place of beginning.

TOGETHER WITH THE CERTIFICATE OF WATER RIGHT Issued June 26, 1972 under Permit No. 31213 by the State Engineer of the State of Oregon and recorded in State Record of Water Right Certificates, Volume 30, Page 38324.

STATE OF OREGON
County of Clackamas } ss.

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

80 MAY 7 A 8:45

RECORDER OF CONVEYANCES * OREGON * CLACKAMAS COUNTY

Witness my hand and seal of office affixed.

GEORGE D. POPPEN
County Clerk

Recording Certificate 80 16958

CCP-R4

2

VIII. Legal Description for Annexation

Griffin Land Surveying Inc.

6107 SW Murray Blvd. #409 – Beaverton, OR. 97008 Office: (503)201-3116

June 21, 2018

Cutsforth Annexation
Project: 0688

Cutsforth Property
Assessors Map 31E27DB
Clackamas County, Oregon

A tract of land situated in the S.E. 1/4 of Section 27, T.3S., R.1E., W.M., Clackamas County, Oregon, being more particularly described as follows:

Beginning at the most Easterly corner of 'WILLOW CREEK ESTATES 2', a subdivision filed in Clackamas County Plat Records; thence N 60°42'56" W along the Northeasterly line of said 'WILLOW CREEK ESTATES 2', 519.77 feet to the most Southerly Southeast corner of 'WILLOW CREEK ESTATES 1', a subdivision filed in Clackamas County Plat Records; thence N 32°39'17" E along the Southeasterly line of said 'WILLOW CREEK ESTATES 1', 285.60 feet to the most Easterly corner thereof; thence N 32°36'47" E along the Southeasterly line of 'VINE MEADOWS', a subdivision filed in Clackamas County Plat Records, 288.42 feet to the most Westerly corner of 'WALNUT CROSSING', a subdivision files in Clackamas County Plat Records; thence S 60°48'16" E along the Southwesterly line of said 'WALNUT CROSSING', 303.65 feet to the most Southerly corner thereof; thence N 32°41'03" E along the Southeasterly line of said 'WALNUT CROSSING', 417.04 feet to the Southwesterly Right of Way line of Territorial Road, being 30 feet, when measured at right angles, from the centerline; thence S 60°44'31" E along said Right of Way line, 216.19 feet to the Northwesterly line of Southern Pacific Railroad; thence S 32°39'27" W along said line, 1001.64 feet to the point of beginning.

Contains 8.91 Acres.

Griffin Land Surveying Inc.

6107 SW Murray Blvd. #409 – Beaverton, OR. 97008 Office: (503)201-3116

June 21, 2018

Cutsforth Annexation
Project: 0688

Territorial Road Right of Way
Assessors Map 31E27DB
Clackamas County, Oregon

A tract of land situated in the S.E. 1/4 of Section 27, T.3S., R.1E., W.M., Clackamas County, Oregon, being more particularly described as follows:

Commencing at the most Southerly corner of 'WALNUT CROSSING', a subdivision files in Clackamas County Plat Records; thence N 32°41'03" E along the Southeasterly line of said 'WALNUT CROSSING', 417.04 feet to the Southwesterly Right of Way line of Territorial Road, being 30 feet, when measured at right angles, from the centerline and the TRUE POINT OF BEGINNING; thence continuing N 32°41'03" E, 10.02 feet to a point 20 feet Southwesterly, when measured at right angles, from said centerline; thence N 60°44'31" W parallel with said centerline, 300.54 feet, more or less to the Southwesterly extension of the Southeasterly line of Spitz Road; thence Northeasterly along said Southeasterly line of Spitz Road, 50 feet to the Northeasterly Right of Way line of said Territorial Road, being 30 feet, when measured at right angles, from the centerline; thence S 60°44'31" E along said Northeasterly Right of Way line, 515.35 feet, more or less, to the Northwesterly line of Southern Pacific Railroad; thence Southwesterly along said line to said Southwesterly Right of Way line of Territorial Road, being 30 feet, when measured at right angles, from the centerline; thence N 60°44'31" W along said Right of Way line, 216.19 feet to the point of beginning.

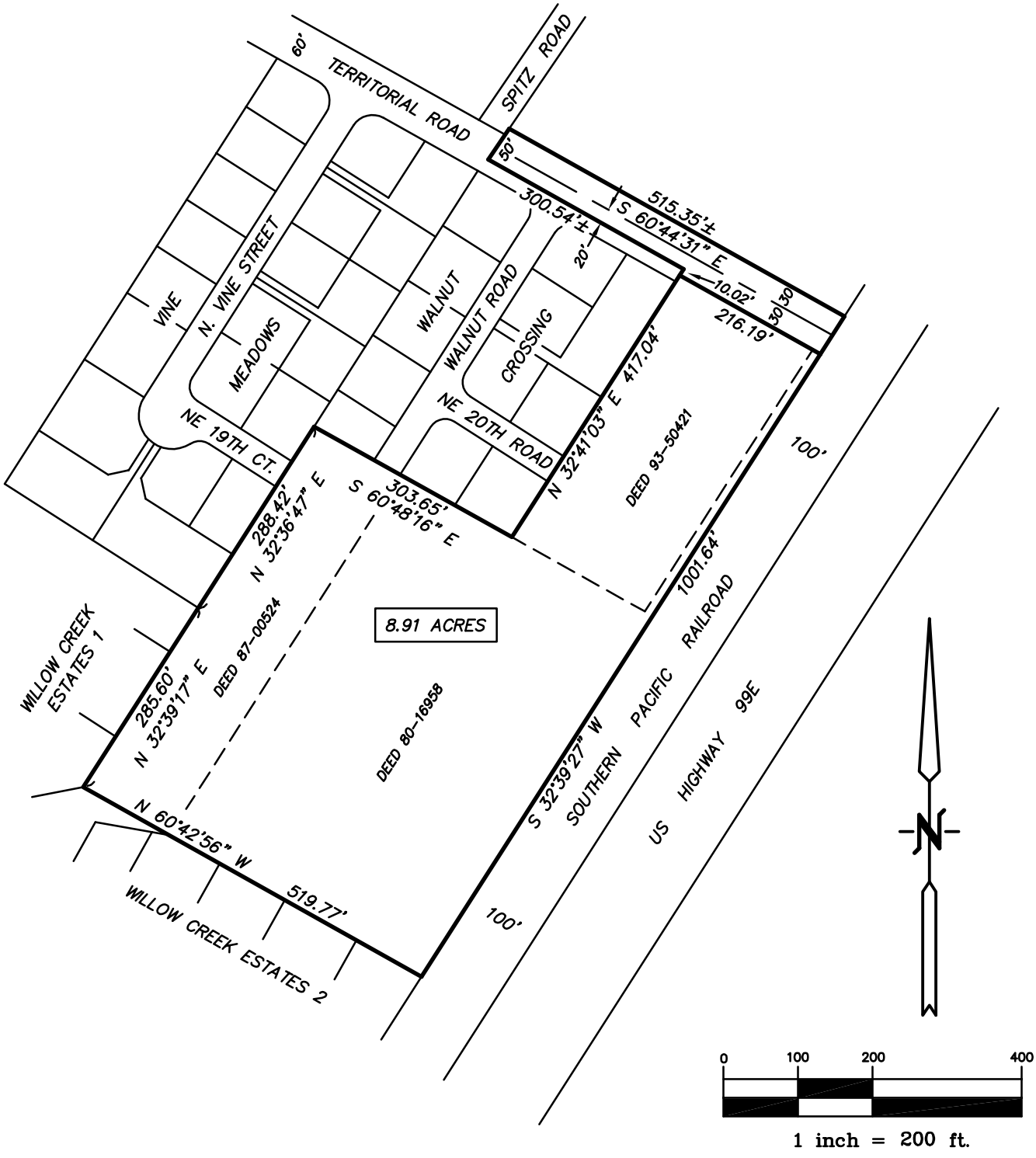
Contains 27,964 square feet.

EXHIBIT B

Exhibit Map

IN THE S.E. 1/4 OF SECTION 27, T.3S., R.1E, W.M.
CLACKAMAS COUNTY, OREGON

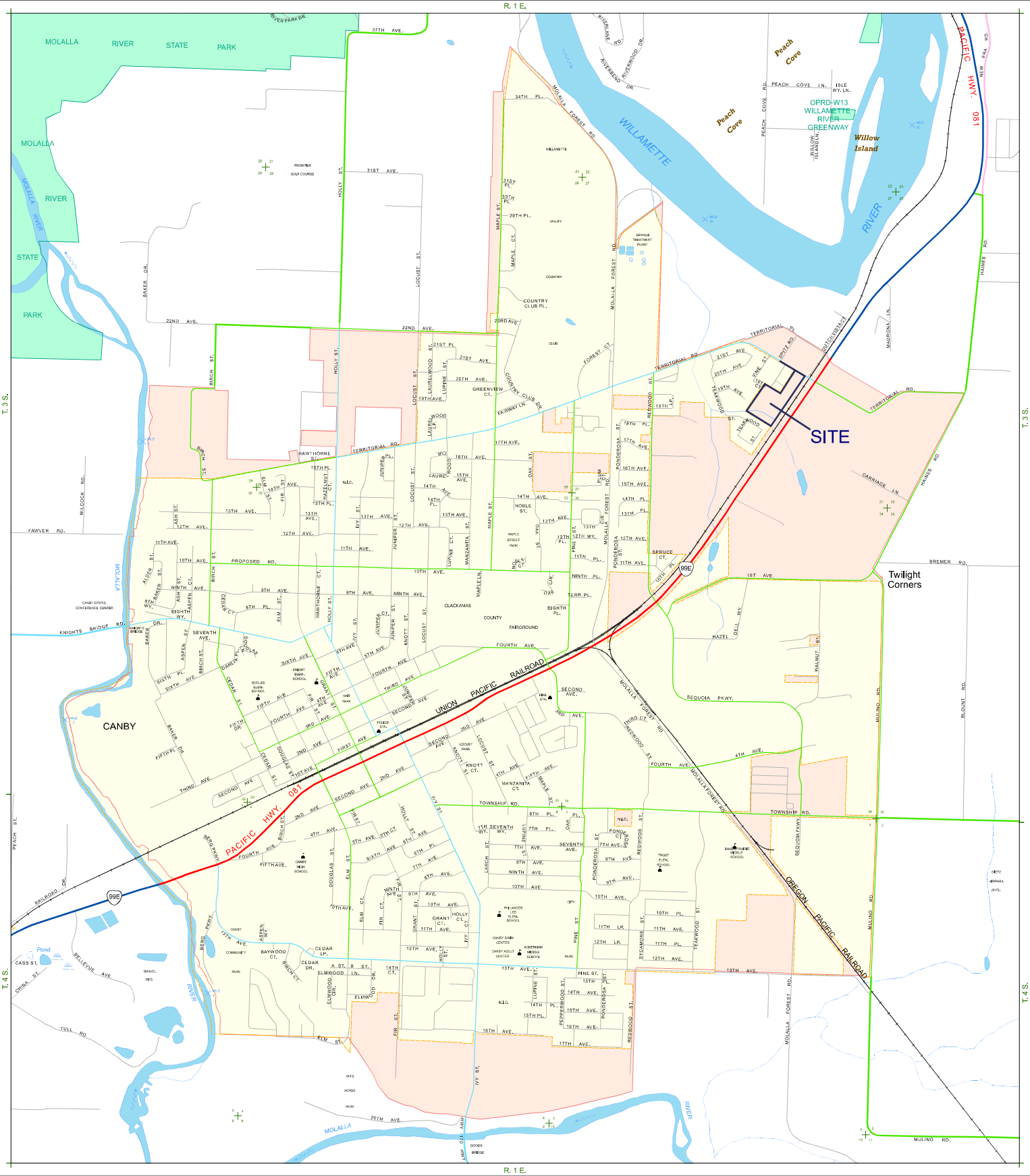
JUNE 21, 2018



GRIFFIN LAND SURVEYING INC.
6107 SW MURRAY BLVD. #409
BEAVERTON, OR. 97008
PHONE: (503)201-3116

IX. Maps

a. Vicinity Map
b. Aerial Map
c. Assessor Map
d. Comprehensive Plan Map
e. Record of Survey
f. Existing Conditions / Topographic Map
g. Conceptual Site Plan



LEGEND

FUNCTIONAL CLASSIFICATION

STATE HWY	OTHER JURISDICTION	
		INTERSTATE
		PRINCIPAL ARTERIAL
		MINOR ARTERIAL
		URBAN COLLECTOR/ RURAL MAJOR COLLECTOR
		MINOR COLLECTOR
		LOCAL ROAD

FOR FURTHER FUNCTIONAL CLASSIFICATION INFORMATION, CONTACT ODOT REGION OFFICE.

- INTERSTATE - US, ROUTE - ORE, ROUTE
- NATIONAL HIGHWAY SYSTEM ROUTE
- CITY LIMIT
- URBAN GROWTH BOUNDARY
- RAILROAD - AMTRAK PASSENGER STATION
- GRAVEL PIT - QUARRY - ODOT STOCKPILE
- ODOT MAINTENANCE STATION
- PUBLIC BUILDING
- COURTHOUSE
- HOSPITAL
- CITY HALL
- ARMORY
- POST OFFICE
- SCHOOL
- LIBRARY
- SAFETY REST AREA
- WEIGH STATION
- PARK & RIDE LOCATION
- INTERCITY - CITY TRANSIT
- COMMERCIAL - GENERAL AVIATION
- PORT FACILITY

Published by

PREPARED DIGITALLY BY THE OREGON DEPARTMENT OF TRANSPORTATION IN COOPERATION WITH THE U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

NORTH

"This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information."

SCALE

0 650 1,300 2,600 Feet

0 195 390 780 Meters

OREGON TRANSPORTATION MAP

Showing Federal Functional Classification of Roads
City of

CANBY

CLACKAMAS COUNTY
2013 Edition

PARK & RIDE | INTERBUS | AMTRAK — AVAILABLE TRANSPORTATION SERVICES SHOWN WITH YELLOW BACKGROUND

PORT | AIRPORT | COMM. AIR — AVAILABLE TRANSPORTATION SERVICES SHOWN WITH YELLOW BACKGROUND

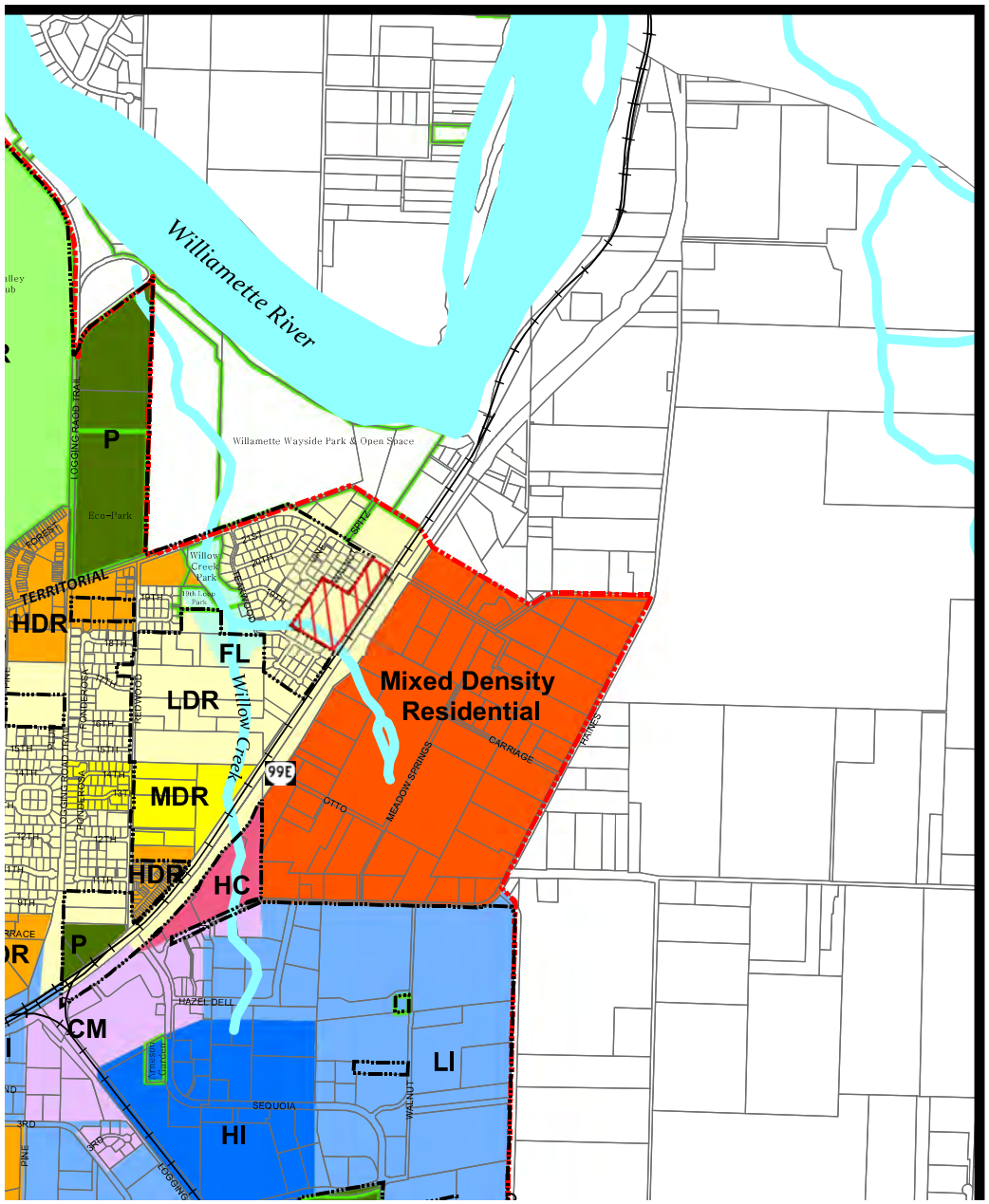
Copies Available from the Oregon Department of Transportation, Geographic Information Services Unit, Mill Creek Office Building, 555 13th St. NE, Salem, Oregon 97301, (503) 986-3154, http://www.oregon.gov/ODOT/TD/TDATA/Pages/gis/citymaps.aspx
Population numbers are based on current Oregon Population Report, College of Urban and Public Affairs, Portland State University, http://pdx.edu/prc


N
1000 ft
S Carriage Ln
SE Territorial Rd
S Dutch Vista Ct
99E
South Hwy 99 E
SITE
N Walnut St
Spitz Rd
NE Territorial Pl
N Vine St
N Teakwood St
NE 21st Ave
NE 20th Ave
NE 19th Ave
N Teakwood St
Otto Rd
N 19th Loop
N Redwood St
NE Territorial Rd
NE 18th Pl
NE 17th Ave
NE 16th Ave
NE 15th Ave
NE 14th Pl
NE 13th Pl
N Ponderosa St
Logging County Rd
N Forest Ct
N Pine St
Google Earth
©2018 Google


NW1/4 SE1/4 SEC. 27 T.3S. R.1E. W.M.
CLACKAMAS COUNTY
1" = 100'
D.L.C.
WALTER FISH NO. 45
3 1E 27DB
This map was prepared for assessment purpose only.
CANCELLED
101
501
500
507
600
2800
602
700
SEE MAP 3 1E 27
SEE MAP 3 1E 27AD
TERRITORIAL ROAD
TERRITORIAL RD.
SPITZ RD.
VACATED
CJ 39-231
1/16 COR.
86-20
86-02
P PLAT 2007-061
RIGHT-OF-WAY 0.64 ACRES
RRFF-5
REAL PROPERTY
8.91 ACRES
SEE MAP 3 1E 27CA
SEE MAP 3 1E 27DC
SEE MAP 3 1E 27DA
U. S. HIGHWAY 99E
SOUTHERN PACIFIC RAILROAD
21ST AVENUE
20TH AVENUE
19TH AVE
NE 19TH CT.
NE 20TH AVE.
TEAKWOOD ST.
MEADOW VINE ST.
NORTH WALNUT ST.
SUNNYSIDE
3 1E 27DB
BOOK 28

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

Record of Survey

IN THE S.E. 1/4 OF SECTION 27, T.3S., R.1E, W.M.
CLACKAMAS COUNTY, OREGON

JUNE 21, 2018

FOR: FRANK CUTSFORTH

CLACKAMAS COUNTY SURVEYOR

RECEIVED: _____

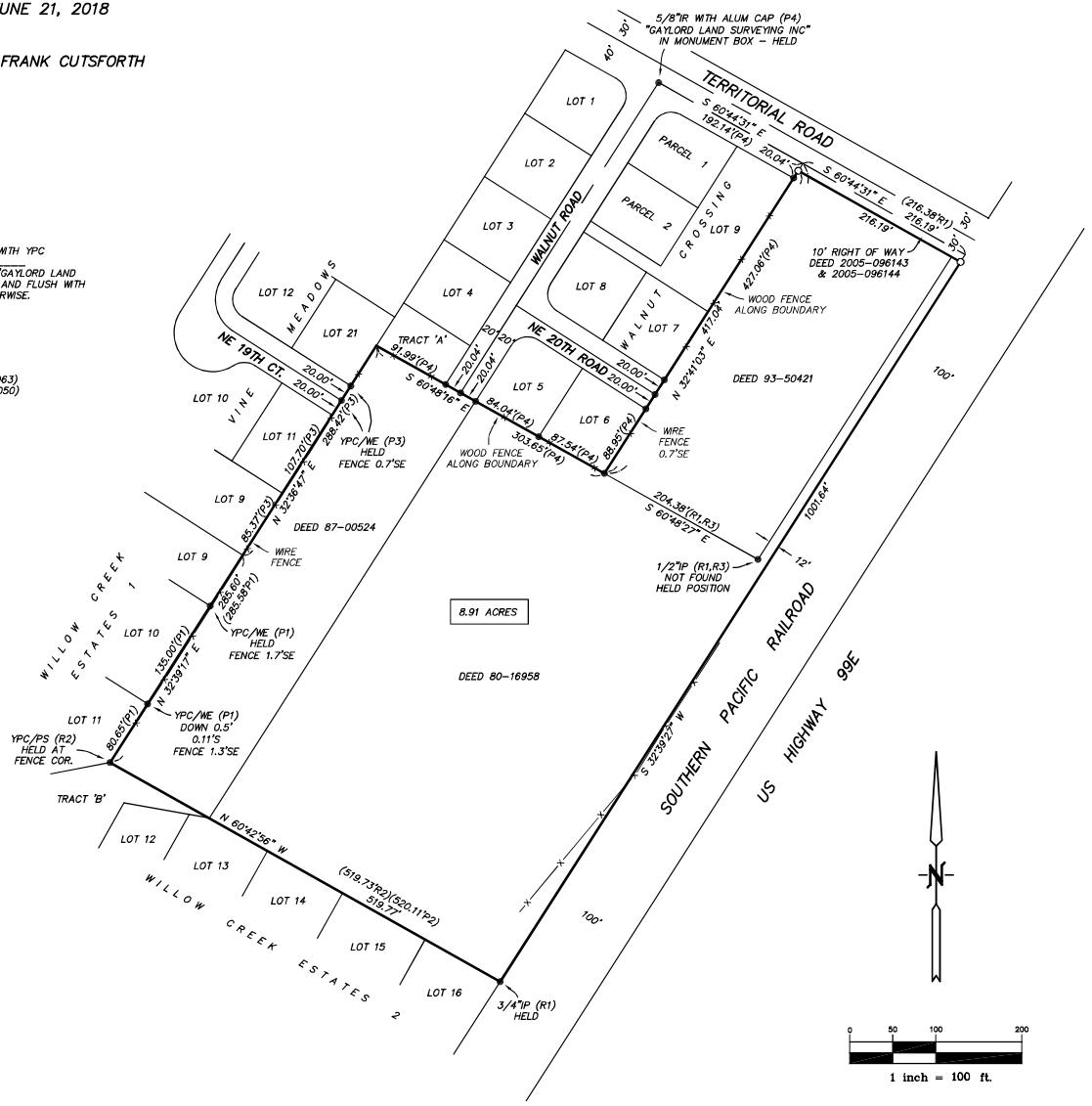
ACCEPTED FOR FILING: _____

SURVEY NUMBER: _____

LEGEND:

- ○ – DENOTES SET 5/8"x30" IROD ROD WITH YPC INSCRIBED "LS 2147", SET ON
- ● – DENOTES HELD 5/8" IR WITH YPC "GAYLORD LAND SURVEYING INC" PER P4, STRAIGHT AND FLUSH WITH THE SURFACE, UNLESS NOTED OTHERWISE.

YPC – 5/8"IR WITH YELLOW PLASTIC CAP (INSCRIBED AS NOTED)
YPC/PS – YPC "LS 1842"
YPC/WE – YPC "WILHELM ENG OR LS 2413"
IP – INSIDE DIAMETER IRON PIPE
IR – IRON ROD
P1 – WILLOW CREEK ESTATES 1 (PLAT 2963)
P2 – WILLOW CREEK ESTATES 2 (PLAT 3050)
P3 – VINE MEADOWS (PLAT 3436)
P4 – WALNUT CROSSING (PLAT 3892)
R1 – DTM 117
R2 – PS 21464
R3 – SN 2004–298



NARRATIVE:

THIS SURVEY WAS PERFORMED TO SET OUT THE EXTERIOR BOUNDARIES OF THOSE TRACTS DESCRIBED IN DEEDS 80–16958, 87–00524 AND 93–50421 CLACKAMAS COUNTY RECORDS. THE BASIS OF BEARINGS IS THE SOUTHEAST LINE OF THE PLAT 'WALNUT CROSSING'.

MONUMENTS WERE HELD ALONG THE BOUNDARIES OF THE ADJOING SUBDIVION PLATS AS SHOWN TO ESTABLISH THE SW AND NW LINES OF THE SUBJECT PROPERTY.

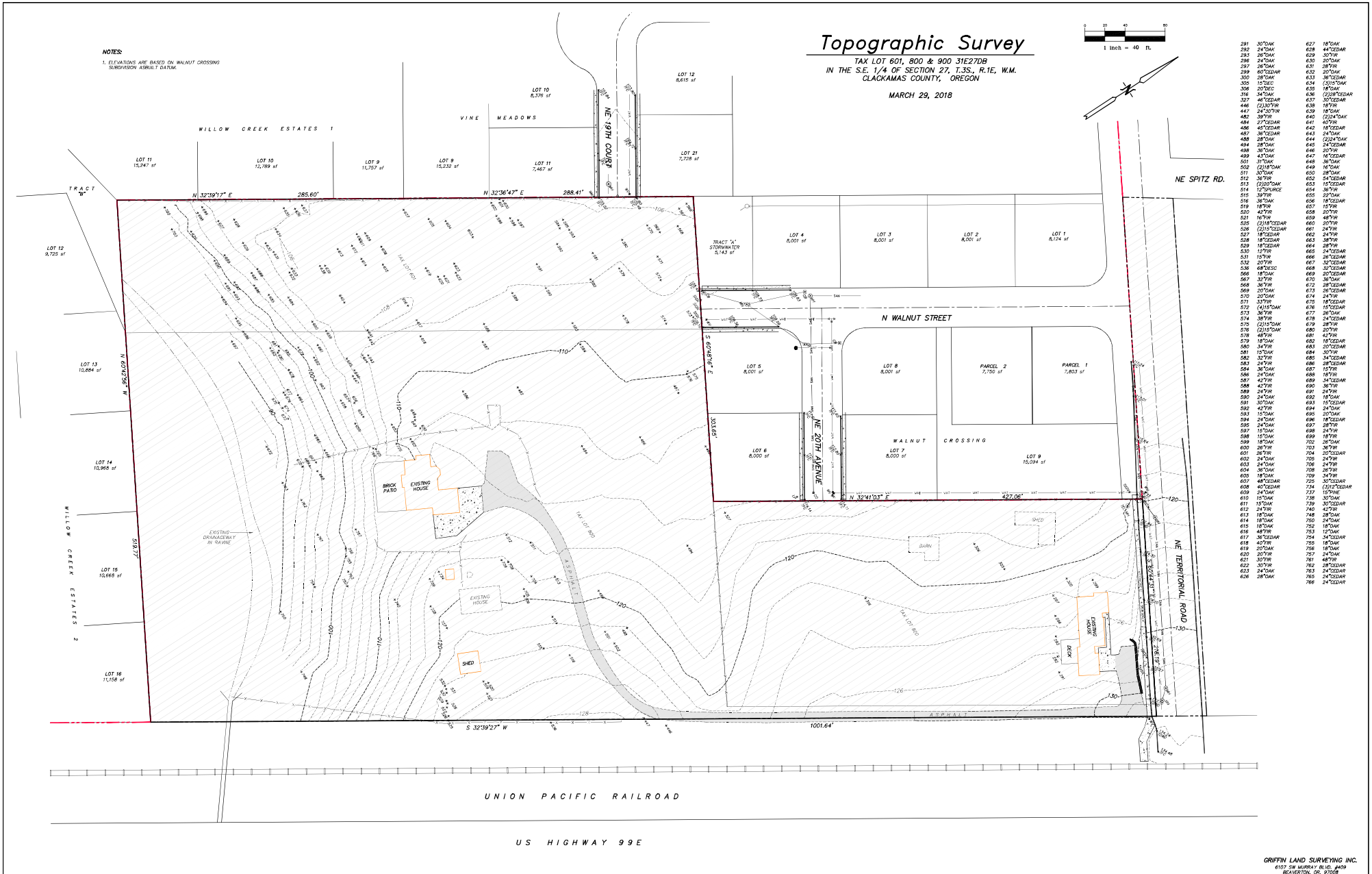
TERRITORIAL ROAD: HELD MONUMENTS AND DIRECTION (S 60°44'31" E) PER THE PLAT 'WALNUT CROSSING' AS SHOWN.

SOUTHEAST LINE: HELD THE MONUMENT AT THE NE CORNER OF 'WILLOW CREEK EXTAES 2' AND A POINT 12', MEASURED AT RIGHT ANGLES, FROM THE 1/2"IP SET IN DTM 117 PER SAID SURVEY AND ADJACENT DEEDS AND INTERSECTED WITH THE SW RIGHT OF WAY OF TERRITORIAL ROAD.

REGISTERED
PROFESSIONAL
LAND SURVEYOR

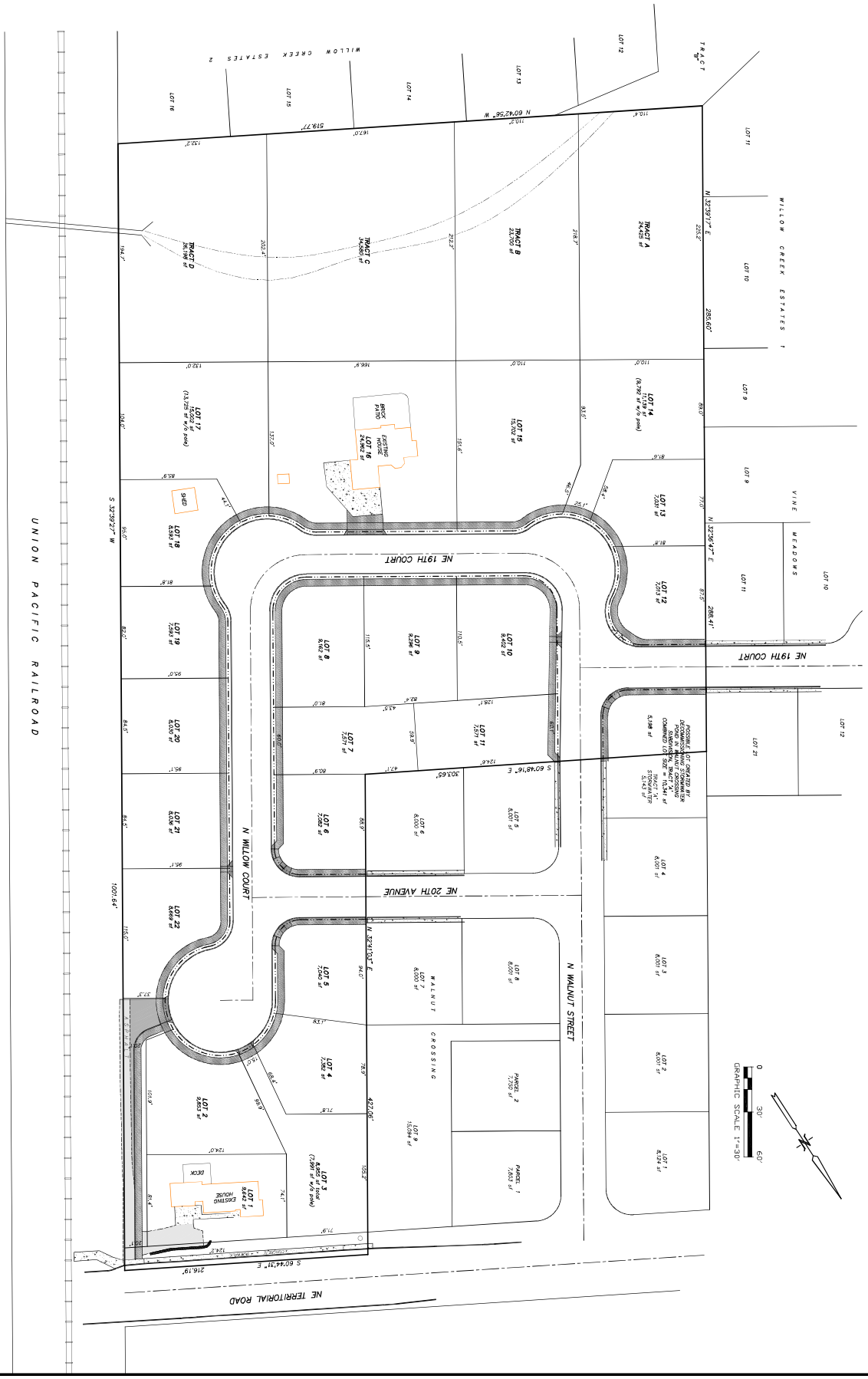
OREGON
JULY 26, 1985
KENNETH D. GRIFFIN
2147
RENEWS: 6/30/19
0627 TIMBER PARK RS

GRIFFIN LAND SURVEYING INC.
6107 SW MURRAY BLVD. #409
BEAVERTON, OR. 97008
PHONE: (503)201–3116



291	30"OAK	627	18"OAK
292	24"OAK	628	44"CEDAR
293	26"OAK	629	30"FIR
296	24"OAK	630	20"OAK
297	28"OAK	631	28"FIR
299	60"CEDAR	632	20"OAK
300	28"OAK	633	36"CEDAR
305	15"DEC	634	(3)15"OAK
306	20"DEC	635	18"OAK
316	34"OAK	636	(2)28"CEDAR
327	46"CEDAR	637	30"CEDAR
446	(2)30"FIR	638	18"FIR
447	24"30"FIR	639	18"OAK
482	39"FIR	640	(2)24"OAK
484	27"CEDAR	641	40"FIR
486	45"CEDAR	642	18"CEDAR
487	36"CEDAR	643	24"OAK
488	28"OAK	644	(2)24"OAK
494	28"OAK	645	24"CEDAR
498	36"OAK	646	20"FIR
499	43"OAK	647	16"CEDAR
501	31"OAK	648	36"OAK
502	(2)18"OAK	649	16"OAK
511	30"OAK	650	28"OAK
512	36"FIR	652	54"CEDAR
513	(2)20"OAK	653	15"CEDAR
514	12"SPURCE	654	36"FIR
515	39"FIR	655	22"OAK
516	36"OAK	656	18"CEDAR
519	18"FIR	657	15"FIR
520	42"FIR	658	20"FIR
521	16"FIR	659	48"FIR
525	(2)18"CEDAR	660	20"FIR
526	(2)15"CEDAR	661	24"FIR
527	18"CEDAR	662	24"FIR
528	18"CEDAR	663	38"FIR
529	18"CEDAR	664	28"FIR
530	12"FIR	665	24"CEDAR
531	15"FIR	666	26"CEDAR
532	20"FIR	667	32"CEDAR
536	68"DESC	668	32"CEDAR
566	18"OAK	669	20"CEDAR
567	32"FIR	670	36"OAK
568	36"FIR	672	28"CEDAR
569	20"OAK	673	26"CEDAR
570	20"OAK	674	24"FIR
571	33"FIR	675	18"CEDAR
572	(4)15"OAK	676	15"CEDAR
573	36"FIR	677	26"OAK
574	38"FIR	678	24"CEDAR
575	(2)15"OAK	679	28"FIR
576	(2)15"OAK	680	20"FIR
578	48"FIR	681	42"FIR
579	18"OAK	682	18"CEDAR
580	34"FIR	683	20"CEDAR
581	15"OAK	684	30"FIR
582	32"FIR	685	34"CEDAR
583	24"FIR	686	28"CEDAR
584	36"OAK	687	15"FIR
586	24"OAK	688	18"FIR
587	42"FIR	689	34"CEDAR
588	42"FIR	690	36"FIR
589	24"FIR	691	24"FIR
590	24"OAK	692	18"OAK
591	30"OAK	693	15"CEDAR
592	42"FIR	694	24"OAK
593	15"OAK	695	20"OAK
594	24"OAK	696	18"CEDAR
595	24"OAK	697	28"FIR
597	15"OAK	698	24"FIR
598	15"OAK	699	18"FIR
599	18"OAK	702	26"OAK
600	26"FIR	703	36"FIR
601	26"FIR	704	20"CEDAR
602	24"OAK	705	24"FIR
603	24"OAK	706	24"FIR
604	36"OAK	708	26"FIR
605	18"OAK	709	34"FIR
607	48"CEDAR	725	30"CEDAR
608	40"CEDAR	734	(3)12"CEDAR
609	24"OAK	737	15"PINE
610	15"OAK	738	30"OAK
611	15"OAK	739	30"CEDAR
612	24"FIR	740	42"FIR
613	18"OAK	748	28"OAK
614	18"OAK	750	24"OAK
615	18"OAK	752	18"OAK
616	48"FIR	753	12"OAK
617	36"CEDAR	754	24"CEDAR
618	40"FIR	755	18"OAK
619	20"OAK	756	18"OAK
620	20"FIR	757	24"OAK
621	30"FIR	761	48"FIR
622	30"FIR	762	28"CEDAR
623	24"OAK	763	24"CEDAR
626	28"OAK	765	24"CEDAR
		766	24"CEDAR

GRIFFIN LAND SURVEYING INC.
6107 SW MURRAY BLVD. #409
BEAVERTON, OR. 97008
(503) 201-3116



SHEET 1 OF 3 SHEETS	JOB SCALE:05-057	DRAWN FS	SCALE 1" = 40'	DATE JUNE, 2018	SISUL ENGINEERING 375 PORTLAND AVENUE GLADSTONE, OREGON 97027 (503) 657-0188	Conceptual Site Plan	Proposed Annexation Frank + Kathe Cutsforth	REVISIONS BY

Laney Fouse

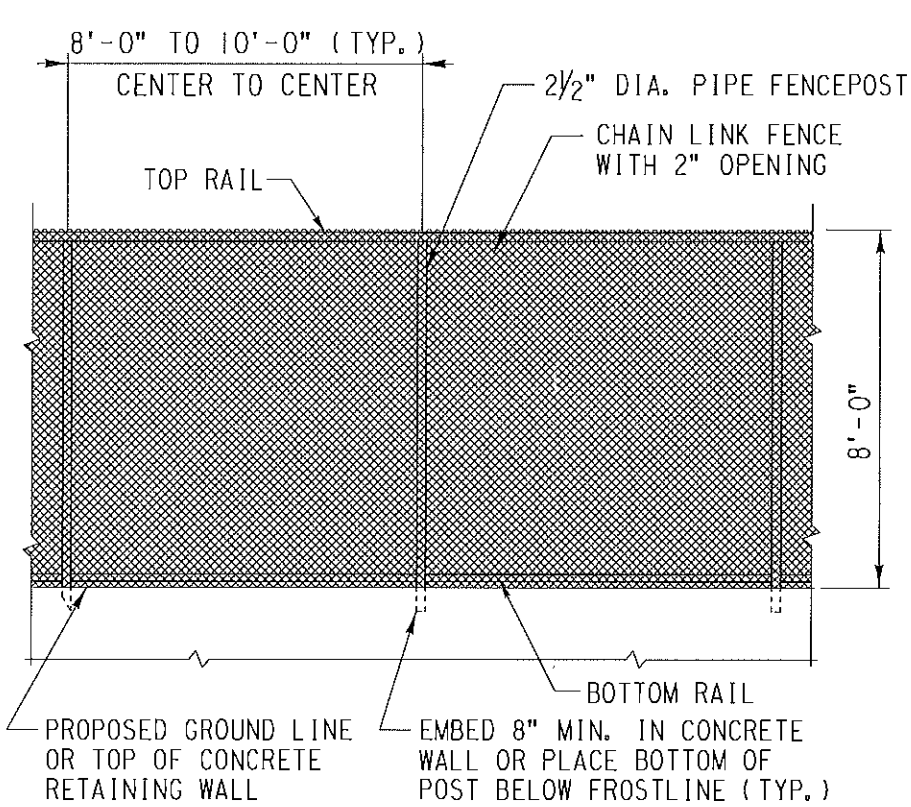
From: DANIELSON Marah B <Marah.B.DANIELSON@odot.state.or.us>
Sent: Wednesday, August 29, 2018 4:35 PM
To: David Epling
Subject: ANN 18-02/ZC 18-02
Attachments: Rail Fence details.pdf

Hi David,
ODOT has review the proposed annexation and zone change and determined there will be no significant impacts to OR 99E and no additional state review is required.

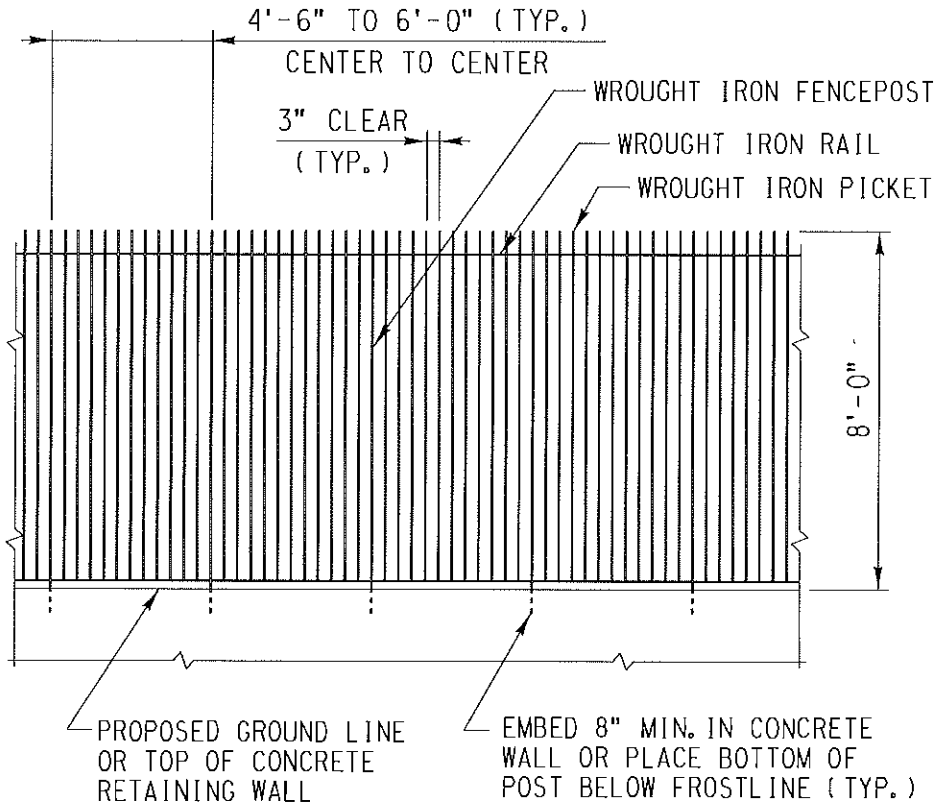
At the time of development, we recommend the applicant install continuous fencing (no gates) along the property line fronting the rail tracks to ensure the safe operation of trains by preventing illegal trespassing of pedestrians across the tracks (see attached Rail Fence Detail).

The applicant is advised that a residential development on the proposed site may be exposed to noise from heavy rail freight trains or passenger trains. It is generally not the State's responsibility to provide mitigation for receptors that are built after the noise source is in place. Builders should take appropriate measures to mitigate the noise impacts.

Thank you for the opportunity to comment.
Marah Danielson, Senior Planner
ODOT R1 Development Review Program
(503) 731-8258
marah.b.danielson@odot.state.or.us



CHAIN LINK FENCE



WROUGHT IRON PICKET FENCE

FENCE ELEVATION

SCALE: 3/16" = 1'-0"

REVISIONS		
DATE	LTR.	DESCRIPTION
/		
/		
/		
/		
/		
/		

DESIGN BY: RAF | DRAWN BY: FJS | CHECKED BY: KHJ

APPROVED:

K.H. Jennison

BNSF - ASSISTANT DIRECTOR STRUCTURES DESIGN

George J. Mayn

UPRR - MGR SPECIAL PROJECTS STRUCTURES DESIGN

BNSF RAILWAY | UNION PACIFIC

BRIDGE STANDARDS

RIGHT-OF-WAY FENCING

FENCE DETAILS

FILE OWNER: UPRR	DATE: 1/24/07
PLAN NO.: 711000	SHEET: 1

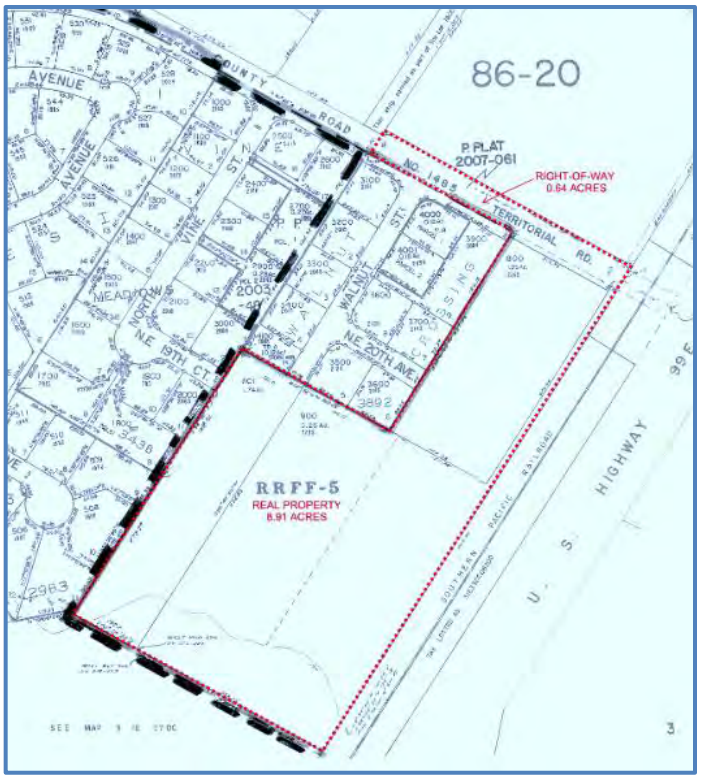
PLOTTED: 3/30/2007 2:53:20 PM

FILE NAME: P:\ustation\dgn\std\pp_guidelines.dgn

City of Canby

PUBLIC HEARING NOTICE &
REQUEST FOR COMMENTS FORM
City File No.: ANN 18-02/ZC 18-02
Project Name: CUTSFORTH ANNEXATION, & ZONE CHANGE
PUBLIC HEARING DATES: PC—September 10, 2018.
CC – October 3, 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 18-02/ZC 18-02). Applicant proposes to annex and re-zone in accordance with the Canby Comprehensive Plan, properties located in an unincorporated area of Clackamas County on the south side of NE Territorial Road, west of State Highway 99E and Union Pacific Railroad, and north and west of Willow Creek Estates Subdivision. Both Public Hearings will be held in the Council Chambers, at 222 NE 2nd Ave, Canby, OR 97013. ***The Planning Commission will meet Monday, September 10, 2018, 7 pm. The City Council will meet Wednesday, October 3, 2018, 7 pm.***



Location: 2265 & 2285 NE Territorial Rd, No Situs (Tax Lot 00601), and 0.64 acre of NE Territorial Road R.O.W. (See properties in red on map at left)**.**
Tax Lots: 31E27DB00601, 31E27DB00800, and 31E27AD00900.
Lot Size & Zoning: 9.55 acres, zoned Clackamas County Rural Residential Farm Forest-5 Acre (RRFF-5)
Property Owners: Frank & Kathleen Cutsforth
Representative: Pat Sisul
Application Type: Annexation & Zone Map Amendment (Type IV)
City File Number: ANN 18-02/ZC 18-02
Contact: David Epling, eplingd@canbyoregon.gov
503-266-0686
Comments Due – If you would like your comments to be incorporated into the City's Staff Report, please return the Comment Form by August 29, 2018 for the Planning Commission meeting and by September 21, 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 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 on the annexation, and this property annexation does not require 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 Hearing and may also be delivered in person during the Public Hearing. Prior to the Public Hearing 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 Planning staff report will be available starting Friday, August 31, 2018 and the Council Staff Memo will be available on September 25, 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:

- 16.16 R-1 Low Density Residential Zone
- 16.54 Amendments to Zoning Map
- 16.24 Annexations
- 16.89 Application & Review Procedures
- Clackamas County/City of Canby Urban Growth Management Agreement
- State Statutes – ORS 195.065 and 282
- Canby Comprehensive Plan

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 August 29, 2018.
Written comments to be included in City Council packet are due by September 21, 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 18-02/ZC 18-02 Cutsforth Annexation and Zone Change

COMMENTS:

1. Sanitary sewer service is available on all adjoining stubbed streets (NE 19th Ct, NE 20th Ave and N Walnut Street) to serve this subdivision.

2. All of the proposed public streets NE 19th Ct, NE 20th Ave and N Walnut Street shall be constructed to City local street standards as per Public Works Design Standards Chapter 2.

3. Existing septic tanks for the existing two houses shall be abandoned and connected to the new sanitary sewer.

4. The existing pond can be abandoned and subject to stormwater disposal mechanism acceptable to the City.

5. Stormwater can also be discharged to Willow creek and subject to downstream analysis by the design engineer.

6. The City would like to have a storm drainage line constructed to alleviate the drainage problems on N Vine Street and discharging into Willow Creek.

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
AGENCY: Curran-Mcleod Consulting Engineers, Inc.
DATE: August 30, 2018

Thank you!

BEFORE THE PLANNING COMMISSION
OF THE CITY OF CANBY

A REQUEST FOR APPROVAL OF	**)**	**FINDINGS, CONCLUSION & FINAL ORDER**
ANNEXATION AND ZONE CHANGE	**)**	**ANN 18-02/ZC 18-02**
FOR PROPERTY LOCATED IN	**)**	**FRANK AND KATHLEEN CUTSFORTH**
NORTHEAST CANBY AT 2265/2285 NE	**)**	
TERRITORIAL ROAD	**)**	

NATURE OF THE APPLICATION

The Applicants sought approval for an annexation/zone change application ANN 18-02/ZC 18-02 to annex 9.55 acres of real property described as Tax Lots 31E27DB00800, 00900 and 31E27AD00601 Clackamas County, Oregon. The property is zoned Clackamas County RRFF-5 and is requested to be zoned City R-1, (Low Density Residential).

HEARINGS

The Planning Commission considered applications ANN 18-02/ZC 18-02 after the duly noticed hearing on September 10, 2018 during which the Planning Commission recommended by a 7/0 vote that the City Council approve ANN 18-02/ZC 18-02 per the recommendation contained in the staff report. This includes approval of the proposed Development Agreement.

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 August 29, 2018 and presented at the September 10, 2018 public hearing of the Planning Commission.

FINDINGS AND REASONS

The Planning Commission considered applications ANN 18-02/ZC 18-02 at a public hearing held on September 10, 2018 during which the staff report was presented, including all applicant submittal attachments. Staff recommended that the Planning Commission forward a recommendation of approval to the City Council for the proposed annexation and new zoning designation in accordance with the Comprehensive Plan Map land use 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/Development Agreement with their directed revision meets all applicable approval criteria, and approved Files ANN 18-02/ZC 18-02 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 the from the public hearing, the Planning Commission recommended to the City Council **APPROVAL** of annexation and zone change applications **ANN 18-02/ZC 18-02** as follows:

1. ANN 18-02/ZC 18-02 be approved and,
2. Upon annexation, the zoning of the subject properties be designated as R-1 as indicated by the Canby Comprehensive Plan Map.

I CERTIFY THAT THIS ORDER approving **ANN 18-02/ZC 18-02 CUTSFORTH ANNEXATION & ZONE CHANGE** which was presented to and **APPROVED FOR RECOMMENDATION TO THE CITY COUNCIL** by the Planning Commission of the City of Canby.
DATED this 10th day of September, 2018.

_____
John Savory
Planning Commission Chair

_____
Bryan Brown
Planning Director

_____
Laney Fouse, Attest
Recording Secretary

ORAL DECISION: September 10, 2018

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

WRITTEN DECISION: September, 2018

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