PLANNING COMMISSION **Agenda**

520 E. Cascade Avenue - PO Box 39 - Sisters, Or 97759 | ph.: (541) 549-6022 | www.ci.sisters.or.us

THURSDAY, SEPTEMBER 10, 2020
SPECIAL MEETING 5:30 PM
520 E. Cascade Avenue, Sisters, OR 97759 - Council Chambers

The Planning Commission meeting will be open to the public via Zoom. Using Zoom is free of charge. The public is invited to join the meeting with your computer or telephone by going to the following link: https://www.ci.sisters.or.us/bc-pc/page/planning-commission-special-meeting

5:30 PM REGULAR MEETING/PUBLIC HEARING

I. CALL TO ORDER / DETERMINATION OF QUORUM / ADOPTION OF AGENDA

II. APPROVAL OF MINUTES: August 20, 2020

III. VISITOR COMMUNICATION*: There will be no verbal Visitor Communication. Written communication can be submitted for the record to nmardell@ci.sisters.or.us or dropped in the utility mail drop by 4:00 pm on Thursday, September 10, 2020.*

IV. PUBLIC HEARING 5:30 P.M.

FILE NUMBER(S): CP 20-03, ZM 20-02

APPLICANT: PX2 Investments
OWNER: United States Forest Service
LOCATION: 201 N Pine Street, Sisters, OR 97759: Map and Taxlot: 151005D000200
REQUEST: The Applicant is requesting approval of a Comprehensive Plan Map and Zoning Map Amendment to redesignate and rezone the property from Public Facilities, Urban Area Reserve, and Landscape Management/Open Space to Downtown Commercial, Multi-Family Residential, North Sisters Business Park, and Open Space. No specific development plans are proposed at this time. All materials can be found on the project website.
https://www.ci.sisters.or.us/community-development/page/sisters-woodlands-rezone-cp-20-03-zm-20-02

V. DISCUSSION: COMPREHENSIVE PLAN COMMITTEE STRUCTURE

VI. STAFF AND COMMISSIONER UPDATES

VII. ADJOURN

This agenda is also available via the Internet at www.ci.sisters.or.us. The meeting location is accessible to persons with disabilities. Requests for an interpreter for the hearing impaired or for other disability accommodations should be made at least 48 hours before the meeting by contacting Kerry Prosser, City Recorder at kprosser@ci.sisters.or.us

City Planning Commission Minutes
Thursday, August 20, 2020 – 5:30 P.M.
City Hall Council Chambers, 520 E. Cascade Avenue, Sisters, OR 97759

Chairman:	Jeff Seymour
Commissioners:	Cris Converse, Art Blumenkron, Scot Davidson, Mark Hamilton, Jack Nagel, Bob Wright
City Staff:	Cory Misley, City Manager, Nicole Mardell, Principal Planner, Paul Bertagna, Public Works Director, Kerry Prosser, City Recorder
Visitor:	Garrett Chrostek, City Attorney, Joe Bessman, City Traffic Engineer Erik Huffman, City Engineer, Caprielle Foote-Lewis, EDCO Sisters Manager, Sue Stafford, Nugget Newspaper
Applicant/Staff:	Tammy Wisco, Retia Consulting, LLC, Jerry Freund, Kevin Eckert, Todd Mobley, Nick Speros
Recording Secretary:	Carol Jenkins

I. CALL TO ORDER / ROLL CALL / DETERMINIATION OF AGENDA

Chairman Seymour called the meeting to order at 5:30 pm. All Commission members were present.

II. ADOPTION OF AGENDA

The Planning Commission made a motion to approve the Agenda for August 20, 2020.
Motion carries.

III. APPROVAL OF MINUTES – None

IV VISITOR COMMUNICATION – None
No written communication was submitted into the record.

Chairman Seymour stated that this is a continuation of review of the planning application CP 20-02 / ZM 20-01 involving a comprehensive Plan Map, Comprehensive Plan Text, and Zoning Map amendment for the property at 800 W. Barclay Drive, Sisters, OR. The public hearing is closed and therefore the sole purpose of this meeting is to deliberate towards a recommendation on the application.

Chairman Seymour stated that prior to beginning deliberations, I ask the members of the Planning Commission to disclose any ex -parte contacts, bias, or conflicts of interest. When your name is called, please indicate whether you intend to participate in or abstain from deliberations.

Bob Wright – None
Jack Nagel – None
Cris Converse – None
Art Blumenkron – None
Scot Davidson – None
Mark Hamilton – None
Jeff Seymour – As we all remember from the hearing, I did have a conflict and chose to abstain from participating. I will continue to abstain during these deliberations as well.

Chairman Seymour handed over the meeting to Vice Chair Converse.

Vice Chair Converse stated that staff will give a brief presentation summarizing the supplemental staff report. Staff please proceed with the staff report.

V. PUBLIC HEARING

File Number(s): CP 20-02, ZM 20-01
Applicant/
Owner: Three Sisters Holdings, LLC
Location: 800 W. Barclay Drive, Sisters, OR 97759
Map and Tax Lot: 151005D000100
Request: The applicant is requesting approval of a Zoning Map Amendment and Comprehensive Plan Map Amendment to rezone and re-designate the property from Urban Area Reserve to Light Industrial. The applicant is also proposing text amendments to the Comprehensive Plan related to the subject property and industrial land needs. Files associated with the project can be reviewed by visiting the project webpage:

https://www.ci.sisters.or.us/community-development/page/n-barclay-rezone-application-cp20-02-zm-20-01.

Planner Mardell stated that the item before you this evening is file no. CP 20-02, ZM 20-01, a Zoning Map, Comprehensive Plan Map, and Comprehensive Plan Text Amendment applications for the property located at 800 W. Barclay Drive. The applicant, 3 Sisters Holdings, LLC is seeking to rezone and re-designate a 15.58-acre property from Urban Area Reserve (UAR) to Light Industrial.

The Planning Commission held a public hearing on July 16, 2020. The applicant provided testimony and two members of the public, Kevin Eckert, and Capi Food-Lewis (EDCO) provided verbal testimony in support of the application. No verbal testimony for or against the application was received.

During the hearing, the draft conditions of approval provided by staff were discussed at length. The applicant provided several requests for changes to the conditions of approval for the Planning Commission to consider. Most of the conditions of approval relate to financial contributions to or construction of infrastructure projects that are needed to mitigate the impacts of development associated with the new Light Industrial zoning and allowed uses. These included a request to

remove a condition of approval requiring a trip cap, request to phase payments, or installation of infrastructure, content to be included in supplemental water/sewer memos, etc.

The Planning Commission closed the oral portion of the hearing and left the written record open for 21 days to allow the applicant and staff to further refine the conditions of approval. During the open record period, the applicant and staff discussed the conditions of approval and reached consensus on some revisions to those items. The correspondence is included in Exhibit A, and the updated conditions of approval are in Exhibit B, dated August 13, 2020. A detailed discussion of the changes is included in the supplemental staff report. One note – in the staff report, the timing for the transportation mitigation states, "prior to approval of the Master Plan", but should be "prior to Master Plan application" as shown in Exhibit B.

Vice Chair Converse stated that she will ask the Commissioners one at a time to see if you have any questions of staff.

Mark Hamilton – No questions.
Jack Nagel – No questions.

Scot Davidson – I would like to comment on appreciation of the work that staff and the applicant did to work through these issues and come to a series of appropriate agreements – so this is great. I have one question as I walk through the current state of the agreement – Planner Mardell what you think are the open risks because of the terms that you have agreed to here.

Planner Mardell stated that in terms of risk, I do not really see any risk that the City has based on the conditions of approval. We tried to make sure that we were requiring the mitigation for impacts related to water, sewer, transportation – our City systems, etc. Before or when development on this property is occurring, maybe trying to get over impact from development, and at this time, I do not see any risks, but would welcome any member of our team to help answer that question as well.

City Attorney Chrostek stated that I concur with what Planner Mardell said, and the biggest difference is that we will be looking at transportation a little bit more, on more occasions, then we would have had we done trip caps upfront. While it may result in a little more piecemeal analysis, it is still occurring before development occurs. I do not see ultimately a risk there.

Scot Davidson stated ok that is all I have. No more questions.

Art Blumenkron – No questions.

Bob Wright – I have one comment that I brought to Planner Mardell earlier today. In Exhibit H, there was a discussion about conditions being met prior to Planning Commission application versus approval. It is going to be prior to application and not prior to approval on specifically item number 3 – which is the payment of $ 98,604 for the transportation improvements. I thought the 21 days to go through the conditions was well worth it, clarifies and narrowed down the important aspects of making this project move through the system smoothly, and not having questions lingering in the future process of this project.

Cris Converse – I echo what Commissioner Wright said, and that they did a great job in compromising, and still making sure everyone agreed to the conditions.

Vice Chair Converse stated that we will now move into Deliberations. As always, our options are to: (1) approve the application as submitted; (2) approve the application subject to conditions of approval, or (3) deny the application.

Vice Chair Converse will now take roll call:

Mark Hamilton – No further comments. Accept with conditions that staff is recommending.
Jack Nagel – No further comments. Accept with conditions that staff is recommending.
Scot Davidson – No further comments. Accept with conditions that staff is recommending.
Art Blumenkron – No further comments. Accept with conditions that staff is recommending.
Bob Wright – No further comments. Accept with conditions that staff is recommending in Exhibit B.
Cris Converse – No further comments. Accept with conditions that staff is recommending in Exhibit B.

Vice Chair Converse asked if any Commissioner had further questions or comments before making a motion. No questions or comments.

Vice Chair Converse asked for a motion at this time.

Commissioner Blumenkron made a motion to approve with the conditions proposed by staff.
Commissioner Hamilton seconded.

Vice Chair Converse stated that the motion needed to be more specific in detail.

Vice Chair Converse asked what the pleasure of the Commission is, and do I have a motion.

Commissioner Wright made a motion to approve the Planning Commission Resolution 2020-04, approving the City files CP 20-02 and ZM 20-01 subject to the conditions of approval as presented by staff in the meeting packet Exhibit B.

Commissioner Nagel seconded.

Vice Chair Converse stated that I will take roll call if there are no further questions or comments.

Mark Hamilton – Aye
Jack Nagel – Aye
Scot Davidson – Aye
Art Blumenkron – Aye
Bob Wright – Aye
Cris Converse – Aye
Jeff Seymour – Recuse himself.

Vice Chair Converse stated that City file CP 20-02 and ZM 20-01 is hereby approved with conditions. *Motion carries.*

VI. STAFF AND COMMISSIONER UPDATES

Chairman Seymour turned this portion over to staff.

Planner Mardell stated that there are a couple of staff updates:

1. City Council did approve a Professional Services Agreement for the Comprehensive Plan Update – $95,000 contract with Angelo Planning Group based out of Portland. That contract will cover their technical expertise, and updating our Economic Opportunities Analysis, the Buildable Lands Inventory, working on a public engagement plan, as well as other based items that we will need for Comprehensive Plan Update. We are having an internal kick-off meeting on Monday to look at additional work to be done, looking at a draft committee structure, and have recommendations to bring to the Planning Commission in September. We will keep you updated as we move through that process and get closer to public engagement.

2. The Community Development Director position – the second round of interviews was done this week. We were able to interview three (3) people in the first round, and one (1) individual in the second round. That process is still in motion, and it appears that we might have a very good candidate in place.

3. The September 10th Public Hearing at 5:30 pm is a special meeting for the Forest Service Property middle parcel, Comprehensive Plan re-designation, and re-zoning application. The applicant was not able to attend on the regularly scheduled meeting, so we did decide based on their project schedule to move it up one week. The meeting will be via Zoom. If you want to have the regularly scheduled meeting this month, we will have plenty to cover with the Comprehensive Plan update, or we could cancel that meeting that would normally be on the Thursday, September 17th.

   The Commissioners were all in agreement to cancel the meeting on Thursday, September 17th.

Commissioner Hamilton asked Planner Mardell if there was going to be a workshop prior to the special hearing on September 10th to go over the big picture with that property.

Planner Mardell stated that because it is a public hearing, we will want to keep most of that discussion during the public hearing to avoid any accidental deliberations outside the formal public hearing. I will be sending out the staff report for that property, and if you have any questions or just wanted to ask about the reasoning process in general, feel free to call me and I will walk you through that application and staff report as well.

Commissioner Blumenkron asked Planner Mardell if there were any other land use applications that they should know about that have not been in the Nugget, etc.

Planner Mardell stated that I am working with City Manager Misley to develop a quarterly update of land use applications to send out. As of right now, there is a lot line adjustment, and final plat application which are minor.

- There is an application for the Threewinds Apartment development which you reviewed their Master Plan back in February. They came in with a Site Plan and Partition application to develop five (5) apartment buildings with a total of 50-units, so a total of 10-apartments per building. There are over five (5) phases and it is currently under review.

- There is an application in the North Sisters Business Park on Sun Ranch Drive for a 6,912 square foot warehouse with and office and storage on the second floor.

- There is an application for a modification to a Master Plan and a Replat at Village Meadows, property owned by Habitat for Humanity where they are looking to alter their current configuration of 4-lots to 10-lots.

Planner Mardell stated that I am still receiving quite a few land use inquires (5-10) per week on properties that are for sale, or just upcoming development projects with some preliminary activity as well.

City Manager Misley stated that I appreciate Planner Mardell for being very thorough with the updates and it is very much appreciated, as well as to the consultants for working through what has been a very busy and unusual summer.

City Manager Misley stated that we are taking to the Urban Renewal Agency Board, a final update to a project list for their consideration next Wednesday evening. If they choose to move forward with that, next month that would significantly free up some public funds within the Urban Renewal Agency boundaries which is essentially the Downtown footprint for us to utilize over the next decade. We have been chipping away at that project for quite a while and does not have direct land use Planning Commission nexus, but it is nonetheless something that will be another tool in the tool box to help shape the future in Downtown Sisters.

City Manager Misley stated that they are hoping that on September 10th, to be able to make a virtual introduction to the Planning Commission of Emme Shoup who is the RARE intern that is joining the City of Sisters team for the next 11-months. Her first day will be September 9th, so we may, or may not hit that 10th date, but you will get to know her. She will be working full time for those 11-months and her time will be spent on the Sisters Country Vision implementation, and half on the Sisters Comprehensive Plan update. Two sides of the coin in terms of long-range planning. She is very bright and a recent college graduate with experience and interest in Urban Planning and Design.

City Manager Misley stated that we totally respect the decision not to hold the Thursday, September 17th meeting in lieu of the 10th, but be prepared for quite a bit of engagement over the next 6-9-12 months because we have an ambitious timeline and we think it is realistic. We have the resources and team in place to be able to do it, do it right, but it is going to require quite a bit of engagement. I've heard personally from you as well as other community members ask about opportunities, and that was one of reasons we wanted to sit down with Jim Cornelius at the Nugget to emphasize that this is an opportunity over the next 6-9-12 months to really help shape the long term future of growth in Sisters. We will be back wanting to talk about that sooner than later, and we may even propose a joint City Council and Planning Commission meeting. That is an option to consider down the road.

Commissioner Davidson asked City Manager Misley about the traffic counter on Jefferson and Creekside Park and is that part of something bigger etc.

City Manager Misley stated that it is part of our traffic safety audit that we conducted with our Traffic Engineer, Joe Bessman and he has been in the loop on that. Our Public Works Department, Paul Bertagna, and Troy Rayburn have been heading that up with Joe Bessman, and Erik Huffman, our City Engineer as well. We have invested in some equipment and have been collecting data for quite a while now. It has been really interesting to see some of the early results, the volumes, the seeds, and being able to share that information directly with the different departments already, but ultimately we are going to be collecting that data and informing an update to our Transportation System Plan (TSP) and as we roll into winter and into spring, we will be able to prioritize and make some budget allocations for capital investments to help mitigate some of the issues such as intersections, straightaways, various stretches of road, etc. We will be trying to do some traffic calming measures and let that data inform us of where we need to make those investments.

Commissioner Nagel stated that the biggest problem that we are facing and it does involve Planning indirectly, is local traffic that is going to severely increase with all the new housing we are going to have out by the new High School, etc. I just do not see how we are going to handle the local traffic, plus there seems to be an increase of traffic through town on the highway, etc. It is becoming a serious problem with all the new housing.

VII. ADJOURN

Chairman Seymour adjourned the meeting at 6:10 p.m.

Respectfully submitted,

Carol Jenkins, Recording Secretary

STAFF FINDINGS & RECOMMENDATION

FILE NUMBERS: CP 20-03, ZM 20-02

LOCATION: 201 N Pine Street, Sisters OR 97759
Tax Map/Lot Number: 151005D000200

APPLICANT: PX2 Investments LLC

OWNER: United States Forest Service

APPLICANT'S ENGINEER: Nicholas Speros, PE, HHPR

APPLICANT'S TRAFFIC ENGINEER: Todd Mobley, PE, Lancaster Mobley

APPLICANT'S LAND USE PLANNER: Tammy Wisco, PE, AICP, Retia Consulting LLC

CITY STAFF: Nicole Mardell Principal Planner

REQUEST: The Applicant is requesting approval of a Comprehensive Plan Map Amendment (Type III/IV) to re-designate the property from Public Facilities, Urban Area Reserve, and Landscape Management to Commercial, Residential Multi-Family, Light Industrial, and Landscape Management. The applicant is also requesting a zone change from Public Facilities, Urban Area Reserve, and Open Space to Multi-Family Residential, North Sisters Business Park, Open Space, and Downtown Commercial and text amendments to the Comprehensive Plan in support of the map amendment and zone change.

APPLICABLE CRITERIA: City of Sisters Development Code (SDC):
- Chapter 4.1 – Types of Applications and Review Procedures
- Chapter 4.7 – Land Use District Map and Text Amendments

Statewide Land Use Goals
City of Sisters Comprehensive Plan
Oregon Administrative Rules
- Division 12 – Transportation Planning

HEARING DATE: **September 10, 2020, 5:30 pm**, Sisters City Council Chambers, 520 E. Cascade Avenue, Sisters, Oregon

PROJECT WEBSITE: https://www.ci.sisters.or.us/community-development/page/sisters-woodlands-rezone-cp-20-03-zm-20-02

FINDINGS OF FACT:

PROPOSAL DESCRIPTION: The applicant is seeking to amend the comprehensive plan map and zoning map to re-designate and rezone the 35.84-acre property as noted below:

Comprehensive Map (Exhibit C)
Existing
27.53 acres - Public Facilities (PF)
4.76 acres – Urban Area Reserve (UAR)
3.55 acres – Landscape Management (LM)

Proposed
25.06 acres – Residential Multi-Family (R-MFSD)
4.96 acres – Light Industrial (LI)
3.85 acres – Landscape Management (LM)
1.97 acres – Commercial (C)

Zoning Map (Exhibit C)
Existing
27.53 acres - Public Facilities (PF)
4.76 acres – Urban Area Reserve (UAR)
3.55 acres – Open Space (OS)

Proposed
25.06 acres – Multi-Family Residential (MFR)
4.96 acres – North Sisters Business Park (NSBP)
3.85 acres – Open Space (OS)
1.97 acres – Downtown Commercial (DC)

The applicant is also seeking several comprehensive plan amendments to Chapters 9 and 14 of the Comprehensive Plan to reflect the re-designation of the property and its impact on Economic Development and the City's industrial land supply.

SITE DESCRIPTION & SURROUNDING LAND USES: The 35.84-acre subject property is located south of W. Barclay Drive and between W. Hwy 20 and N. Pine Street. Several accessory structures related to Forest Service operations are located on the property and are to be removed prior to development. Topography on the site is generally flat and heavily treed with ponderosa pine and other native underbrush species. Portions of Barclay Drive and Pine Street are also part of the subject property's boundaries and are utilized as public roads through a United States Forest Service Special Use Permit.

The property to the south is also owned by the Forest Service, zoned Public Facilities, and contains the existing Sisters Ranger Station. Property to the north across W. Barclay Drive is currently undergoing land use review (CP 20-02/ZM 20-01) to rezone and re-designate the property from UAR to Light Industrial (LI). Properties to the east are zoned Highway Commercial and contain varied uses including hotels, grocery store, formula food establishments, bank facilities, and retail uses. Property to the west is zoned Light Industrial and Downtown Commercial. Uses in these areas include manufacturing, a veterinarian, hardware store, and office and retail space.

BACKGROUND: The site is currently owned by the United States Forest Service. The property was platted as Parcel 2 of PP 2019-19 and constitutes a legal lot of record. The property is under contract for sale with the applicant, PX2 Investments.

In 2010, the City of Sisters received a Transportation and Growth Management Grant from the Department of Land Conservation and Development. The purpose of this grant was to identify potential development scenarios for each of the three properties (67 net acres) owned by the Forest Service in Sisters. These projects resulted in four development scenarios that included a mixture of residential, commercial, light industrial, and park space. These development scenarios were intended to spur private development interest in development of the property, as a previous sale was unsuccessful. A description of the grant project and the development scenarios were incorporated into the City's Comprehensive Plan to provide guidance for potential development scenarios. As the development scenarios created in the 2010 project are now outdated and do not reflect today's market conditions, the applicant is requesting to remove the graphics and detail from the Comprehensive Plan.

SUMMARY OF CONCLUSIONARY FINDINGS: The subject applications can either be approved, approved with conditions, or denied on the basis of whether the applicable standards and criteria can be satisfied either as submitted, or as mitigated through conditions of approval. A detailed analysis of applicable standards and conclusionary findings specific to the requested Comprehensive Plan Amendments, Comprehensive Plan Map Amendment, and Zone Change are provided below.

STAFF RECOMMENDATION:
ZM 20-02: ***Approve with Conditions***. Based on the information and findings contained in this staff report, staff concludes that the requested Zoning Map Amendment satisfies the approval criteria and recommends that the Planning Commission recommend approval of this request, with conditions (Exhibit H), to the City Council.

CP 20-03: ***Approve with Conditions***. Based on the information and findings contained in this staff report, staff concludes that the requested Comprehensive Plan Text and Map Amendments satisfies the approval criteria and recommends that the Planning Commission recommend approval of this request, with conditions (Exhibit H), to the City Council.

EXHIBITS:
The following Exhibits are included in this staff report:

- **A. Vicinity Map**
- **B. Existing Mapping**
- **C. Proposed Mapping**
- **D. Transportation Analysis**
- **E. Proposed Comprehensive Plan Amendments**
- **F. Public Notice & Comments as of September 3, 2020**
- **G. Agency Review Comments as of September 3, 2020**
- **H. Recommended Draft Conditions of Approval**

APPLICABLE CRITERIA & STAFF FINDINGS

CONCLUSIONARY FINDINGS

The following findings relate to compliance with applicable criteria. The terms "subject property" or "site" refers to the subject site under consideration. The criteria applicable to this land use application are as follows:

City of Sisters Development Code (SDC):
Chapter 4.1 – Types of Applications and Review Procedures
Chapter 4.7 – Land Use District Map and Text Amendments

Statewide Land Use Goals
City of Sisters Comprehensive Plan
Oregon Administrative Rules
Division 12 – Transportation Planning

SISTERS DEVELOPMENT CODE
CHAPTER 4.1 – TYPES OF APPLICATIONS AND REVIEW PROCEDURES

4.1.200 Description of Permit/Decision-Making Procedures
All land use and development permit applications, except building permits, shall be decided by using the procedures contained in this Chapter. General provisions for all permits are contained in Section 4.1.700. Specific procedures for certain types of permits are contained in Section 4.1.200 through 4.1.600. The procedure "type" assigned to each permit governs the decision-making process for that permit. There are four types of permit/decision-making procedures: Type I, II, III, and IV. These procedures are described in subsections A-D below. In addition, Table 4.1.200 lists all of the City's land use and development applications and their required permit procedure(s).

…

C. **Type III Procedure (Quasi-Judicial).** Type III decisions are made by the Planning Commission after a public hearing, with appeals heard by the City Council. Type III decisions generally use discretionary approval criteria;
D. **Type IV Procedure (Legislative).** Type IV procedures apply to legislative matters. Legislative matters involve the creation, revision, or large-scale implementation of public policy (e.g., adoption of land use regulations, zone changes, and comprehensive plan amendments which apply to entire districts). Type IV matters are considered initially by the Planning Commission with final decisions made by the City Council and appeals possible to the Oregon Land Use Board of Appeals.

Table 4.1.200 **Summary of Development Decisions/Permit by Type of Decision-making Procedure**		
Action	**Decision Type**	**Applicable Regulations**
Subdivision	Type III	Chapter 4.3
Land Use District Map Change		
Quasi-Judicial (no plan amendment required)	Type III/IV	Chapter 4.7
Legislative (plan amendment required)	Type IV	Chapter 4.7

E. Notice of all Type III and IV hearings will be sent to public agencies and local jurisdictions (including those providing transportation facilities and services) that may be affected by the proposed action. Affected jurisdictions could include ODOT, the Department of Environmental Quality, the Oregon Department of Aviation, and neighboring jurisdictions.

***Staff Findings*:** The proposal includes a Comprehensive Plan Map Amendment, Comprehensive Plan Text Amendment, and Zoning Map Amendment. Per SDC 4.1.200(D), zone changes and plan amendments only constitute a Type IV decision when such amendments "apply to entire districts". SDC 4.7.300 describes the "application of adopted policy to a specific development application" as a quasi-judicial amendment that "follow the Type III procedure". The proposed plan amendments are specific to a limited number of properties under common ownership to facilitate a development concept for the site, but include some incidental plan amendments for that general to the entire City. It thus involves elements subject to both a Type III and a Type IV procedure.

Staff finds that this subject application is primarily quasi-judicial in nature but, in an effort to resolve any differing requirements between Type III and Type IV procedures, Staff followed the procedures that allowed for greater notice and opportunity for public participation or imposed a more stringent standard.

4.1.500 Type III Procedure (Quasi-Judicial)

…

***Staff Findings*:** Staff provided the required notice to those persons entitled to notice at least 14 calendar days before the September 10, 2020 public hearing. The notice contained all of the required information. Staff also published notice in a local newspaper as would be required for a Type IV decision. The public hearing will follow the requirements of SDC 4.1.500(C) and a decision will be issued in accordance with SDC 4.1.500(D) through (F).

4.1.600 Type IV Procedure (Legislative)

…

E. Decision-Making Considerations. The recommendation by the Planning Commission and the decision by the City Council shall be based on consideration of the following factors:

1. Approval of the request is consistent with the Statewide Planning Goals;
2. Approval of the request is consistent with the Comprehensive Plan; and
3. The property and affected area is presently provided with adequate public facilities, services and transportation networks to support the use, or such facilities, services and transportation networks are planned to be provided concurrently with the development of the property. The applicant must demonstrate that the property and affected area shall be served with adequate public facilities, services and transportation networks to support maximum anticipated levels and densities of use allowed by the District without adversely impacting current levels of service provided to existing users; or applicant's proposal to provide concurrently with the development of the property such facilities, services and transportation networks needed to support maximum anticipated level and density of use allowed by the District without adversely impacting current levels of service provided to existing users.
4. Compliance with 4.7.600, Transportation Planning Rule (TPR) Compliance

***Staff Findings*:** To the extent applicable, these requirements largely mirror the requirements for a quasi-judicial amendment and are more specifically addressed below.

4.1.700 General Provisions

….

***Staff Findings*:** The submitted applications contained all of the materials set forth in this Section and was deemed complete on July 16, 2020. The subject property constitutes a lot of record for the reasons set forth above.

CHAPTER 4.7 – LAND USE DISTRICT MAP AND TEXT AMENDMENTS

4.7.100 Purpose

The purpose of this Chapter is to provide standards and procedures for legislative and quasi-judicial amendments to this Code and the Land Use District map. These amendments will be referred to as "map and text amendments." Amendments may be necessary from time to time to reflect changing community conditions, needs and desires, to correct mistakes, or to address changes in the law.

Staff Finding: Staff finds that this provision is advisory.

4.7.200 Legislative Amendments

Legislative amendments are policy decisions made by City Council. They are reviewed using the Type IV procedure in Chapter 4.1, Section 600 and shall conform to Section 4.7.600, as applicable.

Staff Finding: The proposal involves a comprehensive map amendment, zoning map amendment, and comprehensive plan text amendments. Such amendments are primarily quasi-judicial in nature because they are specific to a limited number of properties. However, as discussed above with respect to Type IV Type IV procedures were followed when it would afford greater notice, afford more public participation, or impose a more stringent standard as compared to Type III procedures.

4.7.300 Quasi-Judicial Amendment

A. Quasi-Judicial Amendments. Quasi-judicial amendments involve the application of adopted policy to a specific development application or Code revision. Quasi-judicial map amendments shall follow the Type III procedure as governed by Chapter 4.1.500, using standards of approval in Subsection "B" below. The approval authority shall be as follows:

1. The Planning Commission shall review and recommend Land Use District map changes which do not involve comprehensive plan map amendments;
2. The Planning Commission shall make a recommendation to the City Council on an application for a comprehensive plan map amendment. The City Council shall decide such applications; and,
3. The Planning Commission shall make a recommendation to the City Council on a land use district change application that also involves a comprehensive plan map amendment application. The City Council shall decide both applications.

Staff Finding: The applicant is proposing a land use district change (i.e. zone change) that also involves a Comprehensive Plan Map amendment. Using the standards of approval in Subsection "C" above, the Planning Commission shall make a recommendation to the City Council on a land use district change application that also involves a comprehensive plan map amendment application and the City Council shall decide both applications.

B. Criteria for Quasi-Judicial Amendments. A recommendation or a decision to approve, approve with conditions or to deny an application for a quasi-judicial amendment shall be based on all of the following criteria:

1. Approval of the request is consistent with the Statewide Planning Goals;

Staff Finding: Findings for specific statewide planning goals with respect to the proposed zone change and comprehensive plan amendment are as follows:

Goal 1, Citizen Involvement: During the plan amendment and zone change process, public notice of the proposal was provided to affected agencies and property owners in the surrounding area. Planning staff also published notice of the proposal and public hearings. The City will hold public hearings before the Planning Commission and City Council. These opportunities for public involvement satisfy Goal 1.

Goal 2, Land Use Planning: The City of Sisters, through the Sisters Development Code, adopted criteria and procedures related to review of applications that have been acknowledged as compliant with State Land Use Goal 2. In accordance with Goal 2, the applicant applied for the plan amendment and zone change following the procedures set out in the Sisters Development Code. The City will provide public notice and conduct public hearings on the application in accordance with the Sisters Development Code. Staff finds that Goal 2 is satisfied because the proposal has been submitted and reviewed in accordance with the City's acknowledged planning review process.

Goals 3 and 4, Agricultural and Forest Lands: These Goals are not applicable as the Subject Property is not designated as either Agricultural or Forest Lands nor qualify as resource lands as the Subject Property is located within an urban growth boundary.

Goal 5, Natural Resources, Scenic and Historic Areas, and Open Spaces: Goal 5 aims "*To protect natural resources and conserve scenic and historic areas and open spaces*." The applicant is proposing to relocate existing open space area, from a narrow band along the length of the property, to a consolidated area adjacent to Highway 20/Barclay Drive. There will be no reduction in acreage of open spaced zoned area. This property is not listed within the City's Goal 5 inventory to be preserved, nor are there any conservation easements or deed restrictions per the title report provided by the applicant. Because there is no impact on the City's acknowledged Goal 5 inventory, the proposal does not implicate Goal 5.

Goal 6, Air, Water and Land Resources Quality: The applicant is proposing to re-designate the property from Public Facilities, Urban Area Reserve, and Landscape Management to Commercial, Residential Multi-Family, Light Industrial, and Landscape Management, a rezone from Public Facilities, Urban Area Reserve, and Open Space to Multi-Family Residential, North Sisters Business Park, Open Space, and Downtown Commercial. The application does not propose any development or site work and thus provides no change to the quality of the City's air, water, or land resources. Estimated impacts to the City's water and sewer systems are reviewed further below. At the time of development, the applicant will be required to provide more detailed plans relating to transportation, water, wastewater, and stormwater management on and adjacent to the site in accordance with the City's Development Code.

Goal 7, Areas Subject to Natural Hazards: The Subject Property does not include areas subject to flooding or landslide activity. The Subject Property is not located in a known natural disaster or hazard area. The natural hazard of wildfire for the Subject Property is the same as other properties in this geographic area. The proposal to rezone and re-designate the property does not pose any additional risk to natural hazard.

Goal 8, Recreational Needs: The applicant is proposing to rezone and re-designate portions of the property to Multi-Family Residential, North Sisters Business Park, and Downtown Commercial. All of these zones allow for some form of residential development that is not currently allowed on the property under the Public Facilities zoning designation. The applicant's planning documents anticipate an additional 743 potential residents. The City's Park Master Plan sets an aspirational level of service standard of 5.0 acres of parks per 1,000 residents. The addition of these 743 residents would require approximately 3.7 acres

of additional park space, outside of what is already planned for in the 2016 City Parks Master Plan. As part of their application, the applicant is proposing to relocate existing Open Space zoned area from a narrow band along Highway 20, to a consolidated area on the northwest portion of the property. The applicant is intending to develop this open space area with a public amenity, to be determined through subsequent applications. In order to ensure this land is utilized for recreational purposes, a condition of approval has been added to require the applicant to submit preliminary plans for development of the Open Space area at the time of Master Plan application. Staff finds this relocation to provide a more efficient use of the Open Space zoned area for recreational purposes. This proposal meets the intent of Goal 8.

Goal 9, Economic Development:
The purpose of Goal 9 is to "*provide adequate opportunities throughout the state for a variety of economic activities vital to the health, welfare, and prosperity of Oregon's citizens".* Within the burden of proof, the applicant states there are three key areas in which the proposal meets Goal 9.

Industrial land (North Sisters Business Park)
The applicant, in coordination with Economic Development of Central Oregon, provided data and anecdotal evidence that there is a dearth in industrial land supply within City limits. The lack of available industrial land has led to five missed opportunities of attracting traded sector businesses to Sisters. The cause for this dearth in land supply includes – the rezoning of a portion of the Three Sisters Business Park for residential uses (Clearpine and Grand Peaks Subdivisions), the small size (0.5 to 0.75 acres) of existing North Sisters Business Park (NSBP) zoned parcels in the Sun Ranch Business Park, and growing interest and competition for land within the Sisters City limits. The applicant states the addition of five acres of NSBP zoned area will provide additional opportunities for economic development through industrial uses within the City limits.

Commercial land (Downtown Commercial)
The applicant, in coordination with Economic Development of Central Oregon, found that there is a lack of diversity and inventory for Downtown Commercial properties. The applicant also noted the City's 2018 Employment Lands Development Summary (conducted by CDD staff) notes that only 16% of Downtown Commercial zoned properties are vacant. The applicant is proposing to rezone a 1.97 acre portion of the property along Highway 20 to Downtown Commercial. This area could serve as an extension of downtown Sisters, for additional commercial development opportunities.

Residential land (Multi-Family Residential)
Within the burden of proof, the applicant states that a major inhibitor to economic development in Sisters is the lack of affordable workforce housing for employees. Although not directly tied to employment lands and economic development, the applicant states that the lack of housing has and will continue to contribute to missed opportunities for the relocation or start of new businesses within Sisters.

Staff finds that there is a need to augment the City's supply of land related to employment and economic development to meet demand for such lands within the planning period. The redesignation and rezoning of lands from primarily Public Facilities to a mix of residential, commercial, and industrial will promote increased economic development opportunities within the City limits. Staff finds the proposal to be in compliance with Goal 9.

Goal 10, Housing Development: The purpose of Goal 10 is to provide for the housing needs of citizens of the state. The applicant provided the following response to this goal in the burden of proof:

"The City completed a Housing Needs Analysis (HNA) and a Residential Buildable Lands Inventory (BLI) in June 2019. These analyses were paired with a Housing Strategies Report that recommended measures to help meet housing needs in the city.

The City's 2019 Housing and Residential Land Needs Assessment (Attachment O) determined that "[t]he results show a need for 1,057 new housing units by 2039, which would represent 72% growth over the current estimated supply." The associated net residential land need was identified as approximately 167 acres. In June 2019, the identified available net buildable residential land was 91 acres within the UGB, which was evenly split between Multi-Family Residential and Residential zones. Based on these analyses, the remaining needed net buildable residential land need is 76 acres (as of June 2019). This same report also identified a need for nearly every housing type, including townhomes, duplex through four-plex, multi-family, and condo flats at the low end of the pricing spectrum. Since the time that the BLI and HNA were published in June 2019, 120 residential building permits have been issued in the City of Sisters (Attachment R), leaving a significant remaining need for 936 housing units by 2039. The proposed Comprehensive Plan amendment and Zone Change applications include the addition of 25 gross acres of residential land (MFR) to the UGB, as well as an additional seven acres of light industrial and commercial land for which the development code allows some residential uses. These proposed buildable residential lands will support of Goal 10 by providing need residential lands.

Additionally, in June 2019, the City completed a Sisters Housing Strategies Report, focused on addressing the identified housing needs and deficit of land zoned for residential. The submitted applications directly support several of these strategies, including:

- *Plan for potential residential uses on the US Forest Service property in Sisters. Some future residential use of that property is assumed but the property is not currently zoned for residential use and therefore is not included in the inventory of buildable residential land. (p.12)*
- *Rezone land from other residential designations and/or from commercial, industrial or institutional designations to meet specific housing needs, assuming there is an adequate supply of land available to meet non-residential needs.* (p.13)…"

Staff agrees that the 2019 Housing Needs Analysis and Housing Strategies Report determined the need for more residential development within City limits to accommodate the projected need. In particular, staff finds the applicant chose zoning districts that promote diverse and higher density housing types through townhomes, live/work units, and mixed-use buildings. Although no development plans are proposed at this time, staff finds the applicant's proposal to rezone and re-designate the property meets Goal 10.

<u>Goal 11, Public Facilities and Services</u>: The proposal provides additional impact to City services as the uses in proposed districts (Multi-Family Residential, North Sisters Business Park, and Downtown Commercial) require more water and sewer capacity than was previously contemplated for the Public Facilities zoned area. The applicant has provided sufficient detail through its water and sewer impact analyses to determine appropriate mitigation to serve the site and ensure adequate capacity Citywide. Additional detail regarding mitigation is provided in section 4.7.300(B)(3) below.

<u>Goal 12, Transportation</u>: Statewide Land Use Goal 12 is implemented through OAR 660 Division 12 and more specifically the "Transportation Planning Rule" (TRP) in OAR 660-12-0060. The applicant provided a Traffic Impact Statement prepared by Lancaster Mobley titled "Updated Transportation Impact Study for Sisters Woodlands (CP 20-03/ZM 20-02)" and dated July 13, 2020. The City Traffic Engineer reviewed the traffic study for compliance with Goal 12 and the TPR. This application is somewhat unique, in that the property has been previously contemplated for high density development following analysis done in

2010 through a Transportation and Growth Management Grant (TGM) through the Department of Land Development and Conservation (DLCD). The overall purpose of the study is to compare the existing allowed uses to the proposed potential uses allowed by the new zoning districts, and mitigate for the most reasonable worst case impact to the City's transportation system based on that difference.

The analysis noted the addition of approximately 43 weekday p.m. peak hour trips. This level of development would have significant impact to two City intersections: US 20/Pine Street and US 20/Locust Street. The applicant is proposing to mitigate the proposed impacts with payments toward improvements that will benefit the implementation of the Alternate Route to US 20 along Barclay Drive, which would direct traffic away from the impacted intersections.

The specific improvements identified by the City and ODOT include the following:

- Variable Message Signs for eastbound and westbound US 20 traffic (Est. $400,000 with overhead mount, cabinet, and wireless communication system).
- Alternate Route Wayfinding Signage (Est. $10,000 with fabrication/installation)
- Completion of single-lane US 20/Locust roundabout (Assumed funded, $0)
- Completion of Barclay/Locust roundabout (50% costs from SDC, 50% unfunded -$1,250,000)

Total Unfunded Projects: $1,660,000
Estimated Pro-Rata Impact to US 20: 35 / 1,498 Through Trips = 2.34%
= $38,785.05 pro-rata payment required

The Oregon Department of Transportation and the City Traffic Engineer are in agreement with the proposed mitigation conditions of approval surrounding transportation and TPR compliance. Additional detail regarding mitigation is provided in section 4.7.300(B)(3) below.

<u>Goal 13, Energy Conservation</u>: The purpose of Goal 13 is to ensure land and uses developed on the land shall be managed and controlled so as to maximize the conservation of all forms of energy, based upon sound economic principles. The applicant is proposing to redesignate the property from public facilities to a mixture of zones including Multi-Family Residential, Downtown Commercial, and North Sisters Business Park. Staff finds the applicant's preliminary planning estimates regarding the uses of the subject property will better facilitate compact neighborhood development with a mix of uses to better utilize energy systems adjacent to existing infrastructure.

<u>Goal 14, Urbanization</u>: The proposed application seeks to rezone existing land within the City limits and the City's Urban Growth Boundary from Public Facilities, Urban Area Reserve, and Open Space to a mixture of Multi-Family Residential, Downtown Commercial, North Sisters Business Park, and Open Space. The proposed amendments directly support the City's efforts to accommodate additional population growth within the City limits. The addition of housing, commercial areas, open space and light industrial uses will provide for more efficient use of the subject property.

<u>Goals 15 through 19</u>: Goals 15, 16, 17, 18 and 19 are not applicable because they only pertain to areas in western Oregon.

2. Approval of the request is consistent with the Comprehensive Plan;

Staff Finding: Compliance with applicable policies are discussed below.

3. The property and affected area is presently provided with adequate public facilities, services and transportation networks to support the use, or such facilities, services and transportation networks are planned to be provided concurrently with the development of the property. The applicant shall update the City of Sisters Master Plans for Water, Sewer, Parks and Transportation Systems subject to City Council approval, to reflect impacts of the rezoning on those facilities and long-range plans. The applicant must demonstrate that the property and affected area shall be served with adequate public facilities, services and transportation networks to support maximum anticipated levels and densities of use allowed by the District without adversely impacting current levels of service provided to existing users; or applicant's proposal to provide concurrently with the development of the property such facilities, services and transportation networks needed to support maximum anticipated level and density of use allowed by the District without adversely impacting current levels of service provided to existing users; and,

Staff Finding: The applicant has provided detail regarding impacts to water, sewer, parks and transportation systems resulting from anticipated uses of the subject property under the proposed zoning. Specific details on impacts to public facilities are addressed below.

Water Impacts

The applicant's engineer provided a water and sewer analysis memorandum dated May 26, 2020 for review by the City. The applicant provided the following water analysis:

The City's Water infrastructure is outlined in the 2017 Water Capital Facilities Plan Update (WCFPU or Master Plan), current version dated April 2017. A fire flow analysis will be provided with the Master Plan application that will be specific to the proposed site plan and water main layout.

Available Water – City staff has previously confirmed water is available to serve the property.

Water Rights – As requested, a water volume analysis based on land use was performed to determine the acreage of water mitigation rights necessary to be purchased by the City (or reimbursed for) and the corresponding fee required to be paid at building permit issuance to offset this City cost.

The OS and PF zoned areas have existing water rights credit based on their land use. City staff has stated the UAR zoned areas do not have any associated water rights credit. Based on the proposed uses and unit counts, a new water rights calculation will determine the total volume of water rights needed for the project. The existing water rights will then be subtracted from the new total to determine the net volume required and fees due that will be payable at building permit. The existing water rights associated with the property can be calculated as follows:

- *4.8 acres UAR (excluded from Master Plan) = 0 EDU's.*
- *3.5 acres OS x (43,560 SF / acre) x (1 EDU / 20,000 SF OS) = 7.6 EDU's.*
- *27.5 acres PF x (43,560 SF / acre) x (1 EDU / 10,000 SF PF) = 119.8 EDU's.*
  Total assumed EDU's allocated to subject property = 127.4 EDU

127.4 EDU x 2.2 people/dwelling unit = 280.3 people x 300 gallons per capita per day = 84,090 gpd
84,090 gpd x 365 days / year = 30,692,850 gallons / year = 94.19 acre-ft / year.

The gross proposed project water rights needed for the property can be calculated using the proposed mix of units and non-residential uses as noted in the sewer analysis, and is re-summarized as follows:

- *Cottage housing: 72 units x 1.0 = 72.0 EDU's*
- *Apartments: 112 units x 0.80 = 89.6 EDU's*
- *Townhomes with ADU: 79+79 =158 units x 0.80 = 126.4 EDU's*
- *Congregate Housing (80 beds @ 2 bd/rm = 40 rms x 0.40 = 16.0 EDU's*
- *2.6 acres of NSBP: (2,000 gallons per acre per day) = * see below*
- *0.55 acres of DC: (1 EDU per 5,000 SF) = 4.8 EDU's*
- *2.3 acres of OS @ PF (1 EDU per 10,000 SF) = 10.0 EDU's*
  Total = 318.8 EDU's + NSBP

** For the NSBP area, the water volume was calculated using a value of 2,000 gallons per acre day, which yields: 2.6 NSBP acres x (2,000 gallons / acre / day) = 1,898,000 gallons / year = 5.82 acre-ft / year*

318.8 EDU x 2.2 people/dwelling unit = 701.4 people x 300 gallons per capita per day = 210,420 gpd
210,420 gpd x 365 days / year = 76,803,300 gallons / year = 235.70 acre-ft / year.

Post-project water volume = 5.82 ac-ft / year + 235.70 ac-ft / year = 241.52 ac-ft / year

Net water volume required = 241.52 ac-ft / year – 94.19 ac-ft / year = 147.33 ac-ft / year

Reduce by 180 days per year (use 0.5) and 40% consumption factor
(147.33 acre-ft / year) x 0.5 x 0.40 = 29.47 acre-ft / year
One acre purchased of water rights provides 1.8 acre-ft / acre / year at a cost of $6,800 / acre.
Acres needed to be purchased ➔ (29.47 acre-ft) / (1.8 acre-ft / acre) = 16.37 acres
Fee Calculation ➔16.37 acres x ($6,800 / acre) = $111,316 total due at building permit issuance.
The fee total is for the entire project and will be divided on a per unit or similar basis.

The City Engineer reviewed the water analysis and found the following mitigation is required to reduce the proposal's impact on the City's water infrastructure

Water Infrastructure:
A 10" water main exists along the west boundary of the property, within an easement to be granted in coordination with USFS. Variable size water main exists along the east boundary of the property in Pine Street (8"-12" variable). No water main exists in Barclay Drive along the property boundary. The south boundary has no water main, however an existing 10" main exists across the USFS property south of the boundary. No water mains or other infrastructure are identified in the Water Capital Facilities Plan on the subject property. Development of the property will require looping of water mains in general and will require all water mains for the development to be extended to and through the subject property. All water infrastructure shall be constructed per City of Sisters Standards and Specifications.

Water Mitigation:
The subject property has 127.4 EDUs of allocated water use per the City's Water Master Plan. The developer has proposed a water mitigation fee for the anticipated EDU increase on the property. The water mitigation fee is based on typical City calculations for water mitigation. The calculated water right acreage is 16.37 acres at $6,800 per acre, a calculated total of $111,316. Water mitigation fees for 16.37 acres of water rights shall be required as part of development. Fee amount shall be based on current water right acre cost. The first 127 EDU's of development on the subject property do not require water mitigation fee. Developer shall provide information at building permit application indicating whether building permit is within the first 127 EDU's. All EDU's following the 127th EDU shall require a water

mitigation fee. 324 total projected EDUs – 127 existing EDUs = 197 EDUs. $111,316/197 = $565.05 per EDU due at the time of building permit.

Sewer Impacts

The applicant's engineer provided a water and sewer memorandum analysis dated May 26, 2020.

The applicant provided the following sewer analysis:

Based on current zoning, the following existing design sewer flow for the entire subject property in the Master Plan is calculated as follows:

- *4.8 acres UAR (excluded from Master Plan) = 0 EDU's.*
- *3.5 acres OS x (43,560 SF / acre) x (1 EDU / 20,000 SF OS) = 7.6 EDU's.*
- *27.5 acres PF x (43,560 SF / acre) x (1 EDU / 10,000 SF PF) = 119.8 EDU's.*
  Total assumed EDU's allocated to subject property = 127.4 EDU

The corresponding design flow in gallons per minute can then be calculated. In the Master Plan, a design flow of 125 gallons per day (gpd) is assigned to each EDU and the existing design flow is calculated as:
127.4 EDU x 15 gpd / EDU x (1 day / 1,440 minutes) x 2.4 peak factor = 26.5 gpm.

However, City staff has stated the actual flow is 165 gpd per EDU (75 gpcd x 2.2 capita/dwelling) and requested the design flow calculation utilize this higher value. Of note, this value was determined by taking the total measured flow for 2019 at the treatment facility divided by the 2019 population of Sisters. In other words, the EDU design flow value does not account for any flows generated by non-residential uses. Utilizing this more conservative value, the existing design flow of the property is:
127.4 EDU x 165 gpd / EDU x (1 day / 1,440 minutes) x 2.4 peak factor = 35.0 gpm.

The proposed mix of residential and non-residential uses and units can be summarized as follows;

- *Cottage housing: 72 units x 1.0 = 72.0 EDU's*
- *Apartments: 112 units x 0.80 = 89.6 EDU's*
- *Townhomes with ADU: 79+79 =158 units x 0.80 = 126.4 EDU's*
- *Congregate Housing (80 beds @ 2 bd/rm = 40 rms x 0.40 = 16.0 EDU's*
- *2.6 acres of NSBP: (1 EDU per 20,000 SF) = 5.7 EDU's*
- *0.55 acres of DC: (1 EDU per 5,000 SF) = 4.8 EDU's*
- *2.3 acres of OS @ PF (1 EDU per 10,000 SF) = 10.0 EDU's*
  Total = 324.5 EDU's

The analysis goes on to discuss specific city facilities, including pump stations, gravity lines and force mains within the City to be impacted by this additional projected usage. The City Engineer reviewed the proposal for compliance and found the need for the following mitigation measures based on the sewer analysis:

Pump Station #2: Pump Station #2 is nearing capacity and the additional flows identified in the application will require wetwell and emergency backup generator upgrades. A fee of $72,972.97 is required to mitigate the impacts to Pump Station #2. This fee is due prior to recording of any plat or approval of any building permit on the subject property.

For any phase of development which is planned to exceed a total overall property development of 127 EDU's, infrastructure improvements for that phase shall include the re-direction of the existing force main from Pump Station #2. The force main shall be reconstructed so that its outfall in Barclay Drive is abandoned and the outfall is at the City's 15" trunk line. SDC credits may be available for the costs associated with the reconstruction of the force main, as it will relieve capacity concerns in Barclay Drive.

Westside Pump Station: The City's Wastewater Facilities Plan includes development of a new Westside Pump Station which is to be located adjacent to the subject property. The additional flows identified in the application, those flows above that anticipated under current zoning, will require that the Westside Pump Station be designed for larger flows than originally anticipated. A fee of $280,768 is required to mitigate the impacts to the Westside Pump Station. The fee shall be due at the time of final plat of any phase of development in which 127 EDU's for the overall property is anticipated to be exceeded.

Transportation

The applicant provided a Traffic Impact Statement prepared by Lancaster Mobley titled "Updated Transportation Impact Study for Sisters Woodlands (CP 20-03/ZM 20-02)" and dated July 13, 2020.

The study found the following:

- *Due to insufficient traffic volumes, traffic signal warrants are not projected to be met at the unsignalized study intersections of W Barclay Drive at N Pine Street, W Hood Avenue at US Highway 20, and N Pine Street at US Highway 20 under any of the analysis scenarios. Left-turn lane warrants are projected to be met under the year 2040 planning horizon plus zone change scenario for the intersection of W Barclay Drive at N Pine Street, specifically for the westbound approach.*
- *Two of the study intersections are either currently operating or projected to operate with v/c ratios in excess of the maximum allowable ODOT performance standards. These intersections are N Pine Street at US Highway 20 and N Locust Street at US Highway 20. Suggested mitigation may include the following:*
    - *N Pine Street at US Highway 20: During peak hours when delays are long, drivers will self-select how they enter US Highway 20 to avoid excessive delays. Local traffic may choose a number of other routes to avoid US Highway 20 and utilize the local street system. For this reason, no mitigation is recommended.*
    - *N Locust Street at US Highway 20: The applicant proposes mitigation in the form of a proportional share payment of $23,948 for improvements related to the proposed Alternate Route corridor.*
- *The mitigation described offsets the potential impacts form the project and avoids further degradation of key infrastructure in Sisters. Accordingly, the Transportation Planning Rule is satisfied.*

The City Traffic Engineer reviewed the traffic study for compliance with Goal 12 and the TPR. This application is somewhat unique, in that the property has been previously contemplated for high density development following analysis done in 2010 through a Transportation and Growth Management Grant (TGM) through the Department of Land Development and Conservation (DLCD). The overall purpose of the study is to compare the existing allowed uses to the proposed potential uses allowed by the new zoning districts, and mitigate for the most reasonable worst-case impact to the City's transportation system based on that difference.

Per the City's Traffic Engineer, Joe Bessman:

When the 2010 Transportation System Plan was developed by DKS the Forest Service was in the process of reviewing various redevelopment scenarios for their property. As cited on page 112 of the City's adopted Comprehensive Plan:

> *"The USFS owns several properties in Sisters, including a 42.58 acre property designated and zoned Public Facilities, which is commonly referred to as the 'South Barclay Parcel'…"*

The Comprehensive Plan states that in 2010 through a Transportation Growth Management project the City, USFS, DLCD, and ODOT coordinated efforts to review density thresholds and land use types that would not trigger the Transportation Planning Rule. Four separate development scenarios were reviewed with varying mixes of retail, residential, and industrial uses, though it does not appear that a single scenario was adopted.

The 2010 Transportation System Plan was developed and accounts for these properties. The travel demand model prepared as part of this effort assumed that the "South Barclay Parcel" would include 60 retail employees, 25 service employees, and 5 "other" employees. This assumed scenario was projected to generate 312 weekday p.m. peak hour trips. However, while referred to as the "South Barclay Parcel" this reflects trips from the 42.6 acres that includes the 32.40-acre subject property and the southern 11.22-acre USFS parcel[1], which is planned to retain its current USFS uses (see Figure 1).

No changes to this forecasting was provided in the 2018 Transportation System Plan Update, so these land use assumptions remain valid. Accordingly, the analysis should be revised to proportionately consider the individual acreage of developable PF lands within each parcel (or alternatively the developable areas of each). Figure 1 illustrates the two parcels and the current Comprehensive Plan boundaries.

As shown, a direct comparison of acreage would include the non-buildable right-of-way along Barclay Road and Pine Street. Considering only the PF zoned lands the subject property is approximately 78% of the "South Barclay Parcel" and so would only have been assigned 243 of the 312 weekday p.m. peak hour trips. This would then increase the impact of the rezone from ***the +43 weekday p.m. peak hour trips that were assessed to instead review +113 weekday p.m. peak hour trips.***

….

The submitted analysis noted the addition of approximately 43 weekday p.m. peak hour trips. This level of development would have significant impact to two City intersections: US 20/Pine Street and US 20/Locust Street. The applicant is proposing to mitigate the proposed impacts with payment toward improvements that will benefit the implementation of the Alternate Route to US 20 along Barclay Drive, which would direct traffic away from the impacted intersections.

The specific improvements that were identified by the City and ODOT include the following:

- Variable Message Signs for eastbound and westbound US 20 traffic (Est. $400,000 with overhead mount, cabinet, and wireless communication system).
- Alternate Route Wayfinding Signage (Est. $10,000 with fabrication/installation)
- Completion of single-lane US 20/Locust roundabout (Assumed funded, $0)
- Completion of Barclay/Locust roundabout (50% costs from SDC, 50% unfunded -$1,250,000)

Total Unfunded Projects: $1,660,000
Estimated Pro-Rata Impact to US 20: 35 / 1,498 Through Trips = 2.34%
= $38,785.05 pro-rata payment required

Staff notes the pro-rata payment of $38,785 differs from the applicant's originally contemplated payment. The applicant has stated agreement with the calculation above and is agreement with the required payment of $38,785.05 to mitigate for transportation impacts.

The Oregon Department of Transportation and the City Traffic Engineer are in agreement with the proposed mitigation conditions of approval surrounding transportation and TPR compliance.

[1] Acreages cited are as reported within DIAL (https://dial.deschutes.org/)

Parks Impacts

The City of Sisters is adjacent to an abundance of public lands that are accessible to residents for outdoor recreation. In addition to this supply of public land, the City also established an aspirational level of service (LOS) standard for parks within city limits through the 2016 Parks Master Plan. The LOS requires 5.0 acres of developed parkland per 1,000 city residents.

The applicant's proposal includes the rezoning and re-designation of land primarily zoned for public facilities to Multi-Family Residential, North Sisters Business Park, and Downtown Commercial. Each of these zoning district allows for a variety of residential uses including multi-family apartment buildings, live/work units, and mixed use residential and commercial buildings. For planning purposes, the applicant anticipates the potential addition of up to 743 residents based on the proposed zoning scheme.

The addition of 743 residents requires an additional 3.7 acres of park land to meet the Parks Master Plan LOS.

The applicant provided the following information in the burden of proof:

"As noted herein, the proposed zone change includes 3.85 acres of open space land for a future park/community facility in the west corner of the site. This is the result of a proposed rezone of existing open space land that is not currently inventoried as a City park resource and is located in a linear fashion along Highway 20. The rezone (and increase in open space land) will result in a usable area for a community amenity/park area.

Currently, 3.55 acres of this open space land is located along Highway 20 as a buffer and is not included as a City park, nor is it likely to be utilized as such due to its shape and location. The proposed zone change with the designation of open space land in the west corner is directly in support of the goals of the City Parks Master Plan, by creating a useable space intended for a community facility/park. Additionally, the planning-level design of the subject property includes multiple park/open space areas within each cottage development on the site, in order to create local neighborhood open space/park areas…"

Staff agrees with the applicant that the rearrangement of the open space zoned area on the property will allow for more efficient use of the space as a future park and/or public amenity. In order to ensure this area is utilized for a publicly accessible recreation amenity, a condition of approval has been added to require the applicant to submit preliminary/conceptual development plans for the park at the time of Master Plan application.

4. Evidence of change in the neighborhood or community or a mistake or inconsistency in the comprehensive plan or land use district map regarding the property which is the subject of the application; and the provisions of Section 4.7.600, as is determined to be applicable by the city of Sisters.

Staff Finding: The basis for all three proposed actions (Comprehensive Plan text amendment, Comprehensive Plan map amendment, zone change) as cited by the applicant is due to changing needs within the City of Sisters and rapid population growth. The applicant provided several sources of information, including the City's 2019 Housing Needs Assessment and Buildable Lands Inventory, noting the lack of available land supply for both housing and employment lands. Staff finds that a change in the community is evidenced by the significant population growth, the need for additional housing of all types as stated in the 2019 Housing Needs Assessment, evidence from EDCO, and the City's Buildable Lands Inventory noting a dearth of industrial land.

4.7.400 Conditions of Approval
A quasi-judicial decision may be for denial, approval, or approval with conditions. A legislative decision may be approved or denied.

Staff Finding: This section is procedural.
4.7.500 Record of Amendments
The Community Development Department shall maintain a record of amendments to the text of this Code and the Land Use Districts map in a format convenient for public use.

Staff Finding: This section is advisory. If approved, the Community Development Department will maintain a record of amendments to the Land Use Districts map in a format convenient for public use.

4.7.600 Transportation Planning Rule Compliance

A. When a development application includes a proposed comprehensive plan amendment or land use district change, the proposal shall be reviewed by the City to determine whether it significantly affects a transportation facility, in accordance with Oregon Administrative Rule (OAR) 660-012-0060. Significant means the proposal would:
  1. Change the functional classification of an existing or planned transportation facility. This would occur, for example, when a proposal is projected to cause future traffic to exceed the capacity of "collector" street classification, requiring a change in the classification to an "arterial" street, as identified by the Transportation System Plan; or
  2. Change the standards implementing a functional classification system; or
  3. Allow types or levels of land use that would result in levels of travel or access what are inconsistent with the functional classification of a transportation facility; or
  4. The effect of the proposal would reduce the performance standards of a public utility or facility below the minimum acceptable level identified in the Transportation System Plan.

B. Amendments to the Comprehensive Plan and land use standards which significantly affect a transportation facility shall assure that allowed land uses are consistent with the function, capacity, and level of service of the facility identified in the Transportation System Plan. This shall be accomplished by one of the following:
  1. Limiting allowed land uses to be consistent with the planned function of the transportation facility; or
  2. Amending the Transportation System Plan to ensure that existing, improved, or new transportation facilities are adequate to support the proposed land uses consistent with the requirement of the Transportation Planning Rule; or,
  3. Altering land use designations, densities, or design requirements to reduce demand for automobile travel and meet travel needs through other modes of transportation.

Staff Finding: This provision largely mirrors the requirements of OAR 660-012-0060 – Transportation Planning Rule, which is reviewed below and demonstrates compliance with the foregoing standard.

OAR 660-012-0060, Transportation Planning Rule
660-012-0060 Plan and Land Use Regulation Amendments

(1) If an amendment to a functional plan, an acknowledged comprehensive plan, or a land use regulation (including a zoning map) would significantly affect an existing or planned transportation facility, then the local government must put in place measures as provided in section (2) of this rule, unless the amendment is allowed under section (3), (9) or (10) of this rule. A plan or land use regulation amendment significantly affects a transportation facility if it would:

(a) Change the functional classification of an existing or planned transportation facility (exclusive of correction of map errors in an adopted plan);

Staff Finding: The proposed application, as discussed in the traffic study and City Traffic Engineer's analysis will not result in the need for additional changes to the functional classification of existing or planned transportation facilities. Accordingly, this section is not triggered.

(b) Change standards implementing a functional classification system; or

Staff Finding: The proposed application, as discussed in the traffic study and City Traffic Engineer's analysis will not change any standards implementing the functional classification system. Accordingly, this section is not triggered.

(c) Result in any of the effects listed in paragraphs (A) through (C) of this subsection based on projected conditions measured at the end of the planning period identified in the adopted TSP. As part of evaluating projected conditions, the amount of traffic projected to be generated within the area of the amendment may be reduced if the amendment includes an enforceable, ongoing requirement that would demonstrably limit traffic generation, including, but not limited to, transportation demand management. This reduction may diminish or completely eliminate the significant effect of the amendment.

(A) Types or levels of travel or access that are inconsistent with the functional classification of an existing or planned transportation facility;

(B) Degrade the performance of an existing or planned transportation facility such that it would not meet the performance standards identified in the TSP or comprehensive plan; or

(C) Degrade the performance of an existing or planned transportation facility that is otherwise projected to not meet the performance standards identified in the TSP or comprehensive plan.

Staff Finding: The proposed zone change will not produce types or levels of travel or access that are inconsistent with the functional classification of the existing transportation facility. Upon rezoning properties within the subject site, two study intersections are currently or projected to operate with v/c ratios in excess of acceptable levels of operation per their respective jurisdictional standards. However, these intersections may be reasonably mitigated through a pro-rata payment toward the alternate route improvements as required by the City Traffic Engineer and discussed further below.

(2) If a local government determines that there would be a significant effect, then the local government must ensure that allowed land uses are consistent with the identified function, capacity, and performance standards of the facility measured at the end of the planning period identified in the adopted TSP through one or a combination of the remedies listed in (a) through (e) below, unless the amendment meets the balancing test in subsection (2)(e) of this section or qualifies for partial mitigation in section (11) of this rule. A local government using subsection (2)(e), section (3), section (10) or section (11) to approve an amendment recognizes that additional motor vehicle traffic congestion may result and that other facility providers would not be expected to provide additional capacity for motor vehicles in response to this congestion.

(a) Adopting measures that demonstrate allowed land uses are consistent with the planned function, capacity, and performance standards of the transportation facility.

(b) Amending the TSP or comprehensive plan to provide transportation facilities, improvements or services adequate to support the proposed land uses consistent with the requirements of this division; such amendments shall include a funding plan or mechanism consistent with section (4)

or include an amendment to the transportation finance plan so that the facility, improvement, or service will be provided by the end of the planning period.

(c) Amending the TSP to modify the planned function, capacity or performance standards of the transportation facility.

(d) Providing other measures as a condition of development or through a development agreement or similar funding method, including, but not limited to, transportation system management measures or minor transportation improvements. Local governments shall, as part of the amendment, specify when measures or improvements provided pursuant to this subsection will be provided.

(e) Providing improvements that would benefit modes other than the significantly affected mode, improvements to facilities other than the significantly affected facility, or improvements at other locations, if:

(A) The provider of the significantly affected facility provides a written statement that the system-wide benefits are sufficient to balance the significant effect, even though the improvements would not result in consistency for all performance standards;

(B) The providers of facilities being improved at other locations provide written statements of approval; and

(C) The local jurisdictions where facilities are being improved provide written statements of approval.

Staff Finding: As discussed in the memo provided by the City Traffic Engineer, Joe Bessman, the traffic study proposes mitigation through payment of a pro-rata cost toward improvements to the City's Alternate Route along Barclay Drive.

The specific improvements that were identified by the City and ODOT include the following:

- Variable Message Signs for eastbound and westbound US 20 traffic (Est. $400,000 with overhead mount, cabinet, and wireless communication system).
- Alternate Route Wayfinding Signage (Est. $10,000 with fabrication/installation)
- Completion of single-lane US 20/Locust roundabout (Assumed funded, $0)
- Completion of Barclay/Locust roundabout (50% costs from SDC, 50% unfunded -$1,250,000)

Total Unfunded Projects: $1,660,000
Estimated Pro-Rata Impact to US 20: 35 / 1,498 Through Trips = 2.34%
= $38,785.05 pro-rata payment required

Staff notes the pro-rata payment of $38,785 differs from the applicant's originally contemplated payment. The applicant has stated agreement with the calculation above and is agreement with the required payment of $38,785.05 to mitigate for transportation impacts.

The Oregon Department of Transportation and the City Traffic Engineer are in agreement with the proposed mitigation conditions of approval surrounding transportation and TPR compliance.

SISTERS COMPREHENSIVE PLAN
Goal 9, Policy 3.

The City shall continue to partner with the Community Action Team of Sisters, the Chamber of Commerce, Economic Development for Central Oregon, and other economic development agencies, to improve local and regional economic development efforts, attract businesses, and enhance and diversify the City's economic base. The City will participate with these agencies in periodic updating of the Sisters Strategic Action Plan for Economic Development.

***Staff Finding*:** The City routinely coordinates with multiple agencies and committees regarding economic development. In the case of this application, the Applicant coordinated with EDCO and DLCD, which in turn, communicated with Regional Solutions. EDCO provided third party data about the economic development trends and industrial land needs in Central Oregon and in Sisters. The applicant has met this policy as they sought partnership to increase local economic development efforts through adding additional industrial land supply within City limits.

Goal 9, Policy 4.

The City should support efforts to attract businesses providing family-wage employment opportunities.

***Staff Finding*:** Within the burden of proof, the applicant describes the need for industrial land within the City and highlights five missed opportunities for business development as cited by EDCO. Additionally, the applicant speaks to the correlation between workforce housing and attracting businesses. The proposed comprehensive plan text, comprehensive plan map amendments and zone change are the first steps to entitle a portion of the land for economic purposes and another portion to add to the City's housing supply, in support of Goal 9, Policy 4 to attract businesses providing family-wage employment opportunities. This goal is met.

…

Goal 9, Policy 6.

The City shall ensure an adequate supply of land for the needs of commercial, mixed-use and light industrial purposes.

***Staff Finding*:** The applicant is proposing to rezone the property to a mix of zoning districts. The applicant is proposing approximately 2 acres of commercial space and 5 acres of North Sisters Business Park (light industrial) space. The rezoning of land from Public Facility to these zones will allow for additional commercial, mixed use, and light industrial purposes adjacent to existing uses of this nature. Staff finds this policy is met.

Goal 14, Policy 1.

The City shall promote development within the UGB to minimize the cost of providing public services and infrastructure and to protect resource land outside the UGB.

***Staff Finding*:** This application promotes development of a property that is currently within the UGB, City limits, and is adjacent to existing infrastructure. Staff finds the rezoning of a property that is currently designated as Public Facility, Urban Area Reserve, and Open Space to a mixture of North Sisters Business Park, Downtown Commercial, Multi-Family Residential, and Open Space meets this policy. Utilizing land in the City limits and adjacent to existing City facilities will lead to the protection of resource lands outside of the UGB.

Goal 14, General Requirements for United Forest Service Properties:

In the event that this land is purchased with the intent of developing the land with either commercial, residential or light industrial uses, then it is the policy of the City of Sisters that any comprehensive plan and/or zoning amendment that affects the future development of the properties must meet specific criteria in order for the City to be able to support a potential plan amendment for the property. These criteria are as follows:

1. The amendment shall be based on a 20-year land need analysis for both employment and housing needs, including for affordable housing. The analysis shall include an updated

buildable lands inventory for employment and housing needs as part of the 20-year land need analysis. The analysis shall be consistent with statewide planning Goal 9 (Economic Development) and Goal 10 (Housing).

***Staff Finding*:** The proposed text amendments directly respond to the City's land need analyses that identify an immediate shortage of both employment and housing needs.

The applicant provided attachments H, I and J - summaries provided by EDCO that include employment land trends and building activity for Central Oregon and Sisters. These documents demonstrate a dearth of light industrial lands in Sisters, which has resulted in several "lost opportunities" as businesses have had to look elsewhere for suitable developable employment land. This dearth was likely caused in part by a 2007 rezoning of industrial land to allow for the Clearpine residential subdivision and expanding interest in Sisters. The proposed comprehensive plan map amendment and zone change allocate a portion of the subject property (4.96 acres) as industrial to meet this employment need.

Additionally, the applicant provided information from EDCO that notes a "lack of inventory of commercial/light industrial properties and buildings" as a weakness and "lack of diversity in commercial property inventory" as a threat. With only 16% of land in Downtown Commercial Zone being vacant, the additional two acres proposed as part of this application will aid in additional commercial opportunities.

In regard to housing, the City completed a Housing Needs Analysis (HNA) and a Residential Buildable Lands Inventory (BLI) in June 2019. These documents stated the need for 1,057 new housing units by 2039 and estimated a land need of approximately 167 acres of net residential land. The proposed applications include the addition of 25 gross acres of residential land (MFR) to the UGB, as well as seven acres of light industrial and commercial land, both of which allow a component of integrated residential uses.

Staff finds this policy is met.

2. The amendment shall demonstrate consistency and integration with the city's 2018 update of its Transportation System Plan, as well as the state's Transportation Planning Rule as found in OAR 660-012.

***Staff Finding*:** As discussed previously, the applicant demonstrates consistency for integration with the City's TSP and the State's Transportation Planning Rule. No amendments to the City's TSP are required as the Alternative Route necessary to support the zone change is already contemplated by the TSP.

3. The amendment shall demonstrate that it has maximized urban efficiency consistent with city and state planning requirements and quality in urban design.

***Staff Finding*:** The proposed amendments will result in a mixed-use development, integrating multiple compatible zones for maximized urban efficiency. The Downtown Commercial and North Sisters Business Park zones allow for mixed use buildings with active ground floor uses and residential units on upper stories. Staff finds the proposed zoning of this type is compatible with surrounding districts - including Downtown Sisters and several industrial business parks to the east of the property. Compliance with city and state planning requirements are addressed in other findings within this staff report. Development of the site will be subject to a requirement for master planning, which will further insure efficient and coordinated use of the land. Development of the subject property will also be subject to site plan review, which includes design review requirements. Both the City's master planning and site plan review requirements have been acknowledged as consistent with state planning requirements.

4. The amendment shall include a development plan for the South Barclay Parcel which integrates proposed land uses, transportation and building layout and design in a manner that meets the overall community needs. The development plan shall provide detailed commitments to design context, energy efficiency and public and private financing of public improvements.

***Staff Finding*:** The proposed comprehensive plan map amendments and zone changes demonstrate a plan for a mixed-use development, including housing, commercial, light industrial and open space/recreational areas. The applicant provided the following response to this policy:

"Design Context
The proposed Comprehensive Plan amendments and zone changes are the first steps to entitle the subject property for a mixed-use development that is being designed to respond to housing and economic development needs in Sisters. Commercial and light industrial growth in Sisters requires housing for working individuals and families that is compatible with incomes and affordability. The design vision for this subject property includes a variety of housing options (condos/flats, townhomes and cottages) within city limits that working individuals and families, local entrepreneurs and artisans will be able to afford, within walking distance to downtown. The availability of these housing options will also attract new essential talent to support local businesses.

The future development will also include commercial and light industrial lands to attract new entrepreneurs, makers and businesses to further diversify the local economy. The project is planning an interactive commercial artisan-style marketplace along with a provision for open space that will be set aside for significant public amenity. These uses will be designed and scaled to integrate with the mixed-use community being created.

The project is designed to be natural, with a lot of open spaces and community style housing that will enhance the feel and appearance of the town and allow residents to access all of town's amenities by foot and bicycle, which is also friendlier to town's traffic patterns than housing that requires automobile commuting for all outings. Finally, with our intentionally chosen moniker, Sister's Woodlands, we intend to nestle this denser, more forward/ future thinking development, amongst as many of the existing trees as possible.

Energy Efficiency
These applications propose a mixed-use development through two mechanisms: 1. mixed-use zoning with commercial, light industrial, housing and recreational uses all in a single development and 2. use of the Downtown Commercial (DC) zone to provide an opportunity for future vertical mixed-use along the highway.

The proposed mixed-use zoning arrangement of the site can provide energy efficiencies by including employment and retail lands within walking and biking distance of a significant number of housing units. Sidewalks and multi-use trail connections will be provided within the development and to adjacent surround areas, in support of Goal 13 (Task d) of the City's Comprehensive Plan to "encourage energy efficiency:"
"d. Infrastructure in new developments, such as bike lanes, paths, and trails shall be laid out to provide convenient access to places of education, recreation, and shopping in an effort to promote energy efficiency…"

The mixed-use opportunities of the DC zone include commercial on ground floor and residential on upper floors, which can provide a diversification within a single footprint that can more efficiently utilize the space than a single use. This type of diversification keeps the space utilized 24 hours a day, rather than simply during business hours (for solely commercial uses) or during non-business hours (residential uses). This high rate of utilization can help with building conditioning by stabilize building temperatures, which in turn reduces maintenance costs, increasing long term energy efficiencies.

Public and Private Financing of Infrastructure
The proposed amendments include water, sewer and transportation analyses that estimate reasonable worst-case scenario impacts on public infrastructure, including reasonable mitigation of such impacts. These mitigation measures include private financing of a proportionate share of impacts to public infrastructure, in compliance with the above requirement. Additionally, future development will include master plan and subdivision applications, which will necessarily include significant public improvements for on site water, sewer, and roadway facilities."

Staff finds the proposal, although for a rezoning and re-designation only, provides sufficient detail to meet this policy. Further review of the design, energy efficiency, and integration of land uses and infrastructure will be reviewed at the time of master plan application and subsequent site plan review.

5. The amendment shall demonstrate consistency and integration with the 2011 City of Sisters Parks Master Plan which recommends between 5 and 47 acres to be dedicated for a future community or regional park.

***Staff Finding*:** This section relates to the entirety of the Forest Service owned property within City limits. The property has since been divided into three parcels. The East Portal Property, to the south of the subject property is identified in the 2016 Parks Master Plan as a future park. The applicant is proposing 3.85 acres of open spaces to be utilized as a publicly accessible amenity or park. Staff finds that the proposal, in conjunction with the East Portal Property, meets the intent of this policy.

---------- ***End of Conclusionary Findings*** ----------

EXHIBIT A: VICINITY MAP

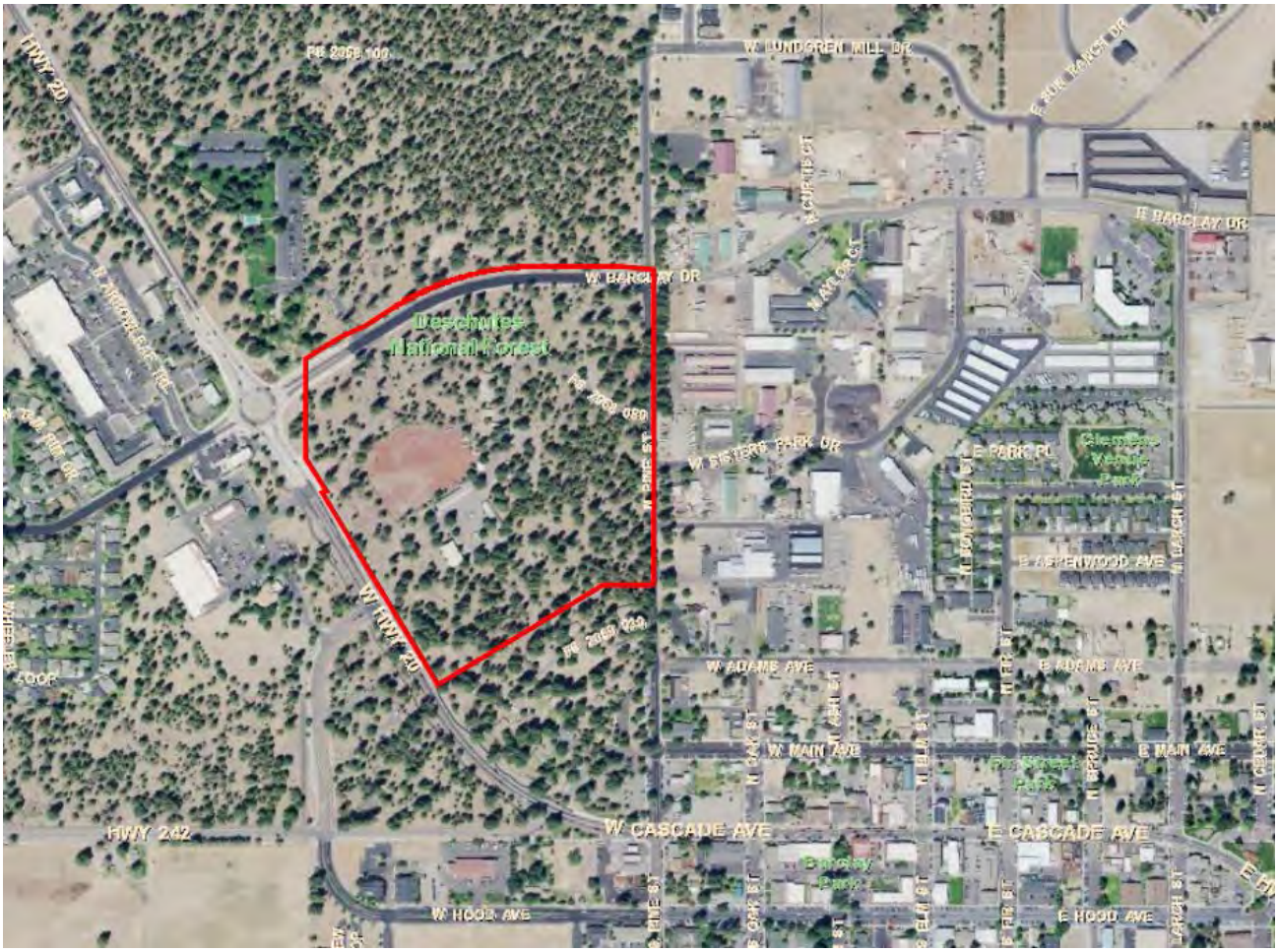
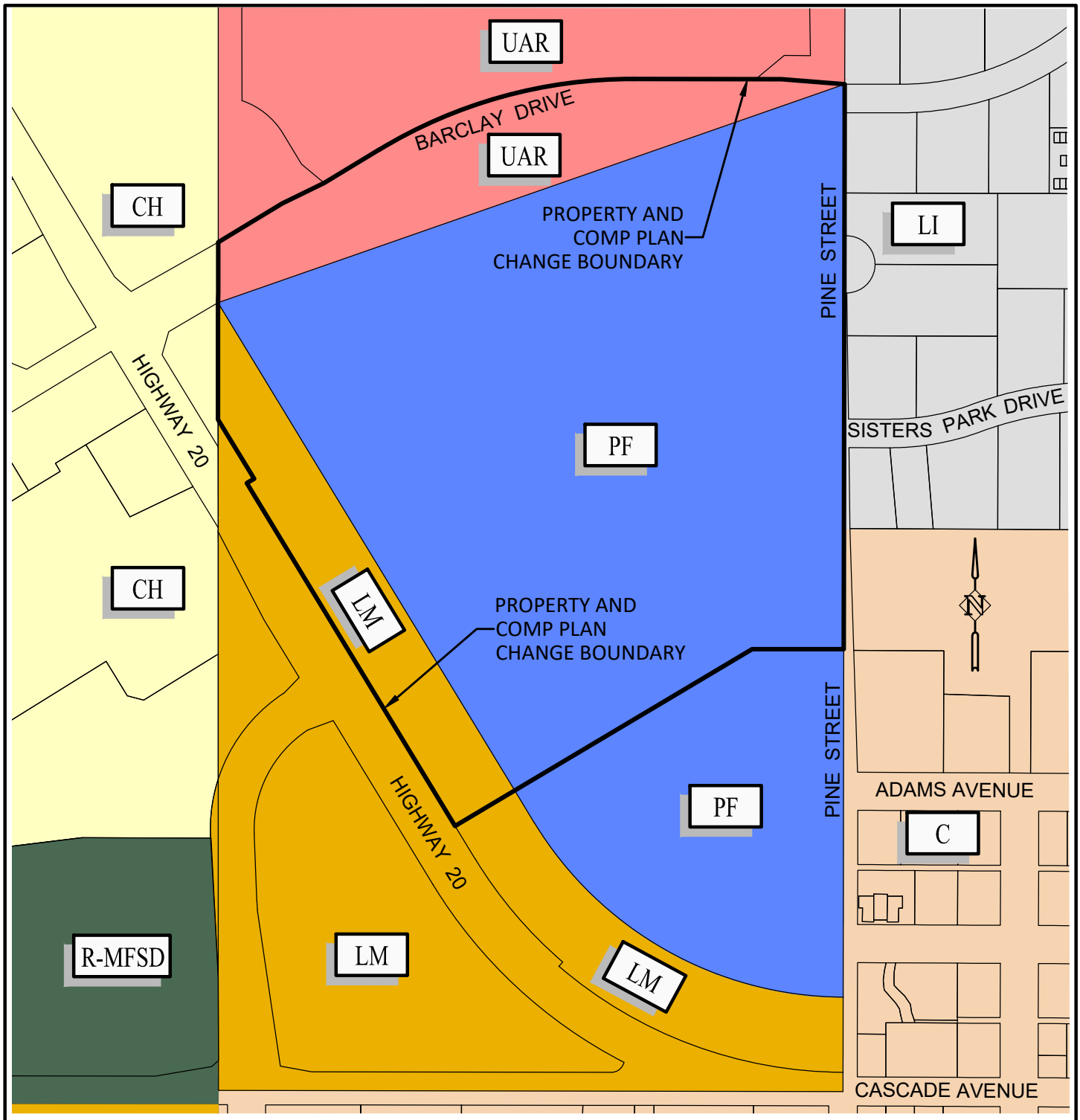


EXHIBIT B: EXISTING MAPPING

attached

EXHIBIT A



LEGEND

- UAR - URBAN AREA RESERVE
- LI - LIGHT INDUSTRIAL
- CH - COMMERCIAL HIGHWAY
- PF - PUBLIC FACILITY
- LM - LANDSCAPE MANAGEMENT
- R-MFSD - RESIDENTIAL MULTI-FAMILY SUB-DISTRICT
- C - COMMERCIAL

HHPR Harper Houf Peterson Righellis Inc.
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250 NW Franklin Avenue, Suite 404, Bend, OR 97703
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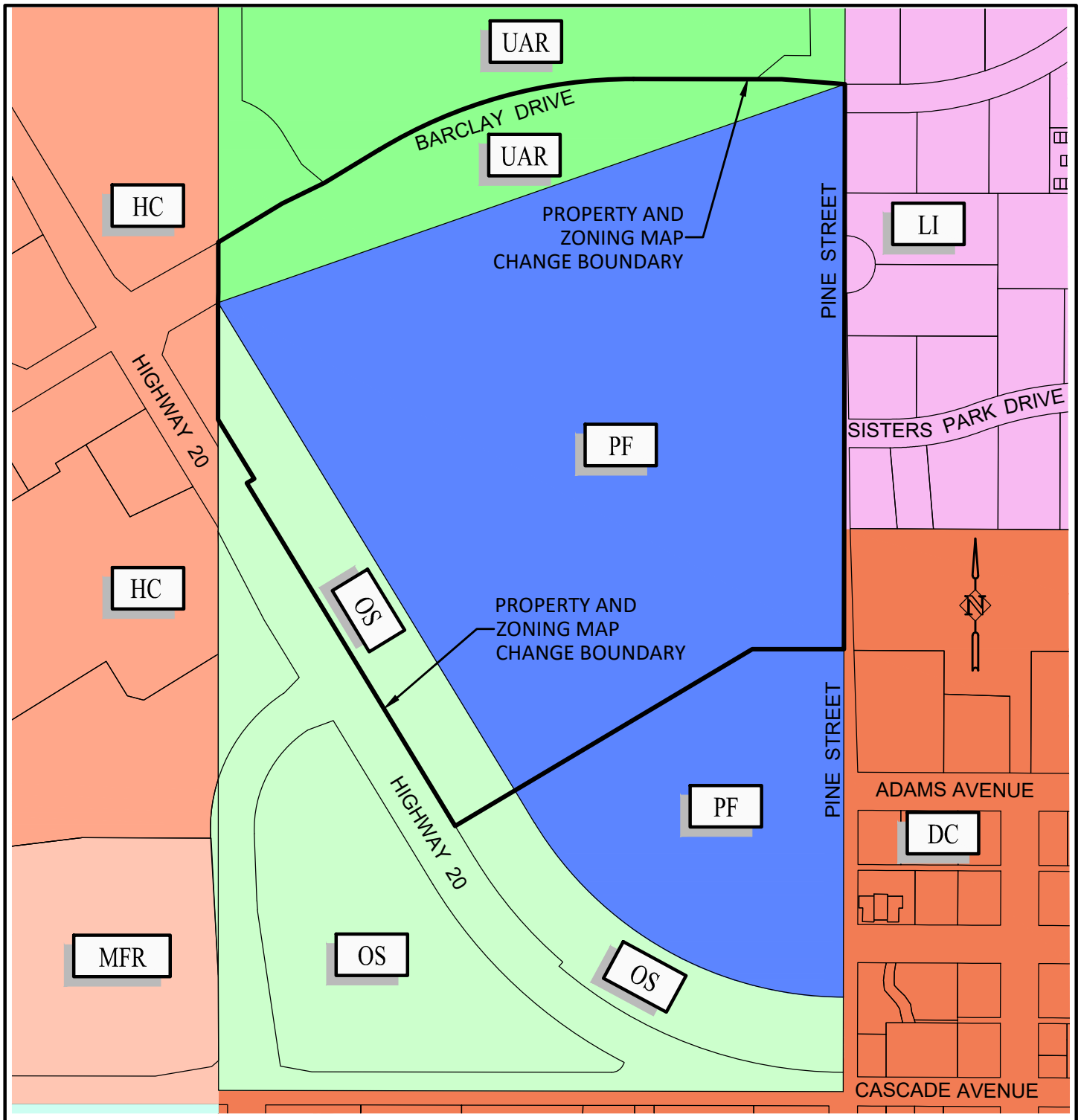
EXISTING
COMPREHENSIVE PLAN EXHIBIT
THE WOODLANDS
SISTERS, OREGON

JOB NO.	SHEET NO.	DATE:	SCALE:
PXI-01	1	05/22/20	1" = 300'



LEGEND

- UAR - URBAN AREA RESERVE
- LI - LIGHT INDUSTRIAL
- HC - HIGHWAY COMMERCIAL
- PF - PUBLIC FACILITY
- OS - OPEN SPACE
- MFR - MULTI-FAMILY RESIDENTIAL
- DC - DOWNTOWN COMMERCIAL

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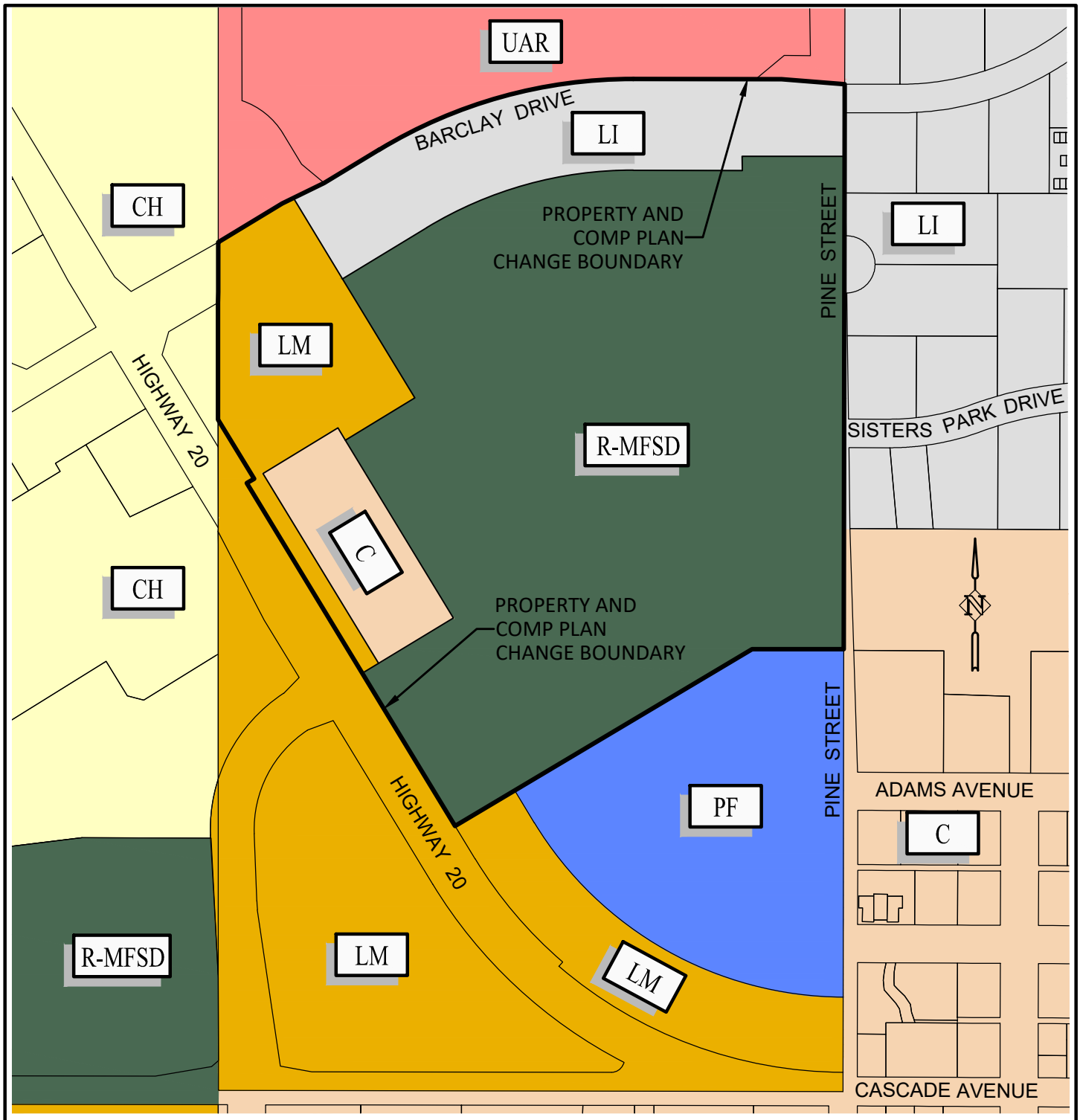
EXISTING
ZONING MAP EXHIBIT
THE WOODLANDS
SISTERS, OREGON

JOB NO.	SHEET NO.	DATE:	SCALE:
PXI-01	1	05/22/20	1" = 300'

EXHIBIT C: PROPOSED MAPPING

attached

EXHIBIT B



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PROPOSED
COMPREHENSIVE PLAN EXHIBIT
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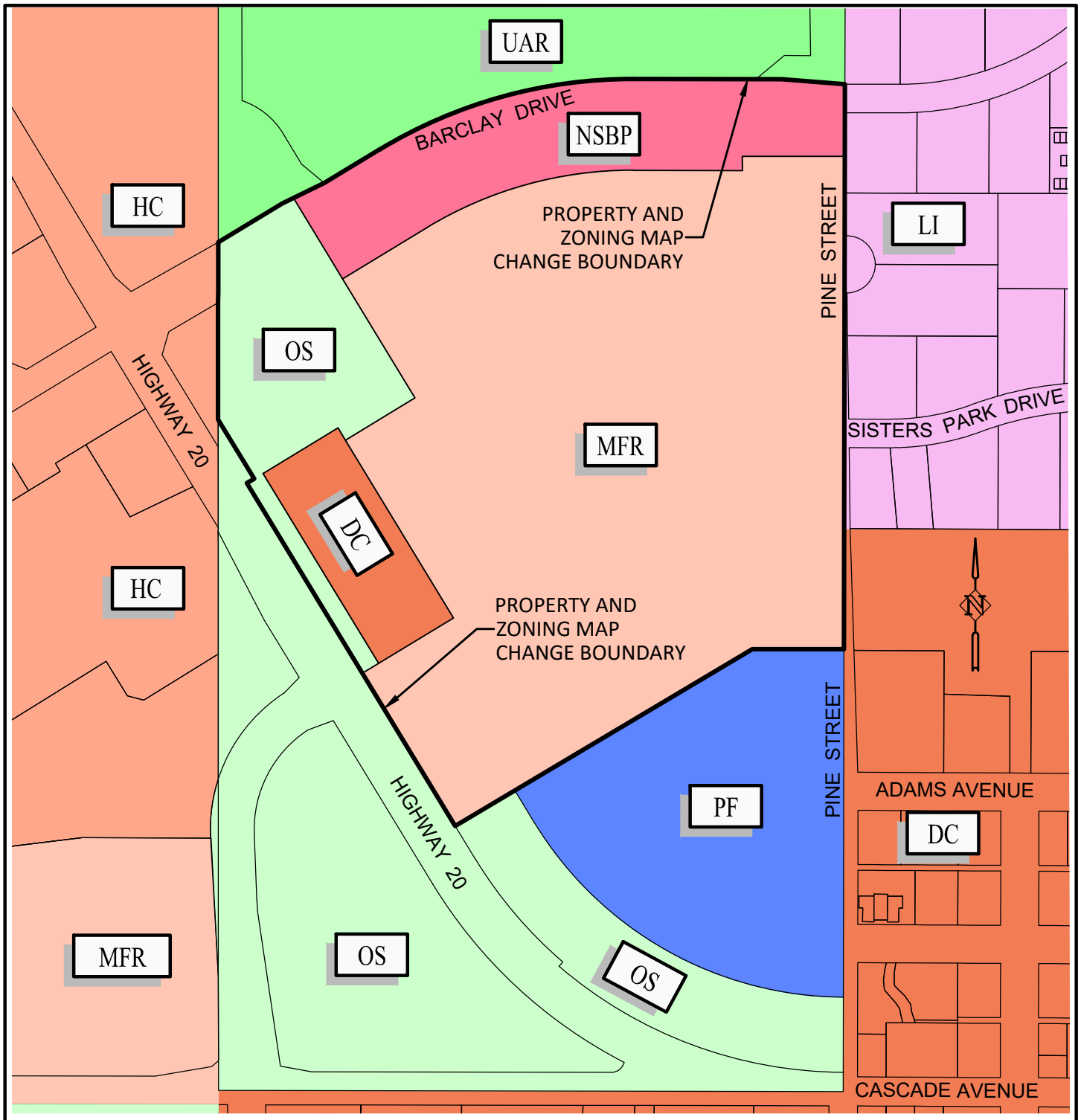

LEGEND

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- DC - DOWNTOWN COMMERCIAL

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PROPOSED
ZONING MAP EXHIBIT
THE WOODLANDS
SISTERS, OREGON

JOB NO.	SHEET NO.	DATE:	SCALE:
PXI-01	1	05/22/20	1" = 300'

EXHIBIT D: TRANSPORTATION IMPACT STUDY

attached

321 SW 4th Ave., Suite 400
Portland, OR 97204
503.248.0313
lancastermobley.com

Memorandum

To: **City of Sisters**

From: **Melissa Webb, PE**

Date: **July 13, 2020**

Subject: **Updated Transportation Impact Study for Sisters Woodlands (CP 20-03, ZC 20-02)**

This memorandum addresses updates to the original Transportation Impact Study (TIS) for Sisters Woodlands, dated May 22, 2020.

In response to comments by the City of Sisters and Oregon Department of Transportation (ODOT) staff, the original report was updated and resubmitted. The updated TIS for Sisters Woodlands is dated July 13, 2020. A comment log is included in the appendix of the updated report and contains responses to each comment made by ODOT and City staff.

If you have any further questions or comments, please don't hesitate to contact us.

Sincerely,

Melissa Webb, PE

Transportation Analyst

lancaster mobley

REGISTERED PROFESSIONAL ENGINEER
59946PE
OREGON
JULY 12, 2005
MELISSA A. WEBB
EXPIRATION DATE: 6/30/2022

Sisters Woodlands

Transportation Impact Study

Sisters, Oregon

Date: July 13, 2020

Prepared for: Paul Schneider

Paul Hodge

PX2 Investments, LLC

Prepared by: Melissa Webb, PE

Todd Mobley, PE

Table of Contents

Executive Summary 4

Project Description 6
- Introduction 6
- Location Description 6
  - Vicinity Roadways 7
  - Study Intersections 8

Site Trips 11
- Trip Generation 11
- Trip Distribution 14

Traffic Volumes 18
- Existing Conditions 18
- Year 2040 Planning Horizon Conditions 18
- Year 2040 Planning Horizon with Zone Change Conditions 20

Safety Analysis 24
- Crash History Review 24
  - US Highway 20 at W Barclay Drive 25
  - W Barclay Drive at N Pine Street 25
  - N Pine Street at US Highway 20 26
- Sight Distance Evaluation 26
- Warrant Analysis 27
  - Left-Turn Lane Warrants 27
  - Preliminary Traffic Signal Warrants 27

Operational Analysis 28
- Performance Standards 28
- Delay & Capacity Analysis 28

Mitigation Analysis 29
- N Pine Street at US Highway 20 30
- N Locust Street at US Highway 20 30

Proportional Share Mitigation Assessment 31

Transportation Planning Rule 33
  - 660-012-0060 Plan and Land Use Regulation Amendments 33

Conclusions 34

Appendix 36

Table of Figures

Figure 1: Project Location (image from Google Earth) 7
Figure 2: Vicinity Map 10
Figure 3: Net Trip Distribution & Assignment 17
Figure 4: Existing Traffic Volumes 21
Figure 5: Year 2040 Planning Horizon Traffic Volumes 22
Figure 6: Year 2040 Planning Horizon with Zone Change Traffic Volumes 23
Figure 7: Proportional Share Mitigation Trip Distribution and Assignment 32

Table of Tables

Table 1: Vicinity Roadway Descriptions 8
Table 2: Study Intersection Descriptions 9
Table 3: Zone Change Reasonable Worst-Case Trip Generation Summary 12
Table 4: Proposed Development Plan Trip Generation Summary 14
Table 5: Crash Type Summary 24
Table 6: Crash Severity and Rate Summary 25
Table 7: Capacity Analysis Summary 29
Table 8: Proportional Share Methodology Summary 33

Executive Summary

1. The proposed Sisters Woodlands involves a change in zoning from Public Facility (PF), Urban Area Reserve (UAR), and Open Space (OS) to North Sisters Business Park (NSBP), Downtown Commercial (DC), Multi-Family Residential (MFR), and Open Space (OS) on a site located between US Highway 20, W Barclay Drive, and N Pine Street in Sisters, Oregon.

2. Eventually, a land division is expected to be proposed to subdivide the northern portion of the lot into a mixed-use housing development, which is expected to contain a mix of light industrial, commercial, recreational, cottage housing, and multi-family housing land uses. The proposed Sisters Woodlands will include the construction of approximately 40,000 square feet of industrial buildings, approximately 24,000 square feet of commercial buildings, an approximately 20,000 square foot multi-use facility, and up to 346 units of multi-family housing (to include 2nd and 3rd-story flats above commercial buildings, duplex units, and cottage housing units).

3. The "worst-case scenario" trip generation calculations show that the proposed zoning is expected to generate a net increase of 113 trips during the evening peak hour when compared to the number of trips assigned to the existing land use. During the evening peak hour, the *Sisters Transportation System Plan* (TSP) has assigned 243 trips to the existing portion of the property included in the zone change.

4. All intersections were calculated has having a crash rate below 1.00 CMEV. No significant trends or crash patterns were identified at any of the study intersections that are indicative of safety concerns. Accordingly, no safety mitigation is recommended per the crash data analysis.

5. The most recent site plan shows that proposed site access locations are in compliance with the access spacing standards shown in Development Code 3.1.300(I)(1) and the *1999 Oregon Highway Plan*. Actual site access locations will be determined at the time of a future land division application, following the zone change.

6. Due to insufficient traffic volumes, traffic signal warrants are not projected to be met at the unsignalized study intersections of W Barclay Drive at N Pine Street, W Hood Avenue at US Highway 20, and N Pine Street at US Highway 20 under any of the analysis scenarios. Left-turn lane warrants are projected to be met under the year 2040 planning horizon plus zone change scenario for the intersection of W Barclay Drive at N Pine Street, specifically for the westbound approach.

7. Two study intersections are either currently or projected to operate with v/c ratios in excess of the maximum allowable ODOT performance standards. These intersections are N Pine Street at US Highway 20 and N Locust Street at US Highway 20. Suggested mitigation may include the following:

    - N Pine Street at US Highway 20: During peak hours when delays are long, drivers will self-select how they enter US Highway 20 to avoid excessive delays. Local traffic may choose a number of other routes to avoid US Highway 20 and utilize the local street system. For this reason, no mitigation is recommended.

    - N Locust Street at US Highway 20: The applicant proposes mitigation in the form of a proportional share payment of $23,948 for improvements related to the proposed Alternate Route corridor.

8. The mitigation described above offsets the potential impacts from the project and avoids further degradation of key infrastructure in Sisters. Accordingly, the Transportation Planning Rule is satisfied.

Project Description

Introduction

The proposed Sisters Woodlands involves a change in zoning from Public Facility (PF), Urban Area Reserve (UAR), and Open Space (OS) to North Sisters Business Park (NSBP), Downtown Commercial (DC), Multi-Family Residential (MFR), and Open Space (OS) on a site located between US Highway 20, W Barclay Drive, and N Pine Street in Sisters, Oregon. In addition, the proposed project involves a comprehensive plan amendment.

This report examines the impacts of the proposed change in land use on the transportation system in the vicinity of the project site. The purpose of this report is to analyze potential traffic impacts and recommend any required transportation mitigation measures to ensure safe and efficient performance of the transportation facilities that will be impacted by the proposed change in land use.

All supporting data and calculations are provided in the appendix to this report.

Location Description

The project site is located southeast of the intersection of W Barclay Drive at US Highway 20 in Sisters, Oregon, and consists of the northern portion of tax lot 102. The site currently has multiple buildings on it, which will be removed upon construction of Sisters Woodlands. The immediate proposal is for a change in zoning from Public Facility (PF), Urban Area Reserve (UAR), and Open Space (OS) to North Sisters Business Park (NSBP), Downtown Commercial (DC), Multi-Family Residential (MFR), and Open Space (OS). Eventually, a land division is expected to be proposed to subdivide the northern portion of the lot into a mixed-use housing development, which is expected to contain a mix of light industrial, commercial, recreational, cottage housing, and multi-family housing land uses.

The project site is shown in Figure 1.

Figure 1: Project Location (image from Google Earth)

Vicinity Roadways

The proposed project is expected to impact five roadways near the site. Table 1 provides a description of each of the vicinity roadways.

Table 1: Vicinity Roadway Descriptions

Street Name	Functional Classification	Cross-Section	Speed (MPH)	Curbs & Sidewalks	On-Street Parking	Bicycle Facilities
US Highway 20	State Highway/Arterial	2-3 Lanes	20-35 posted	Yes	Downtown Core	Partial
W Barclay Drive	Arterial	2 Lanes	30 posted	Partial	No	Partial
N Pine Street	Collector	2-3 Lanes	25 posted	Partial	Yes	No
N Locust Street	Arterial	2-3 Lanes	20-40 posted	Partial	Partial	Partial
W Hood Avenue (between US 20 and OR 242)	Arterial	3 Lanes	30 posted	Partial	No	Both Sides

Table Notes: Functional Classification provided by the City of Sisters Transportation System Plan (TSP) Refinement[1], Figure 7-1

Study Intersections

Based on the location of the subject property, preliminary calculations of trip generation, and coordination with the City of Sisters, the following intersections were identified for analysis:

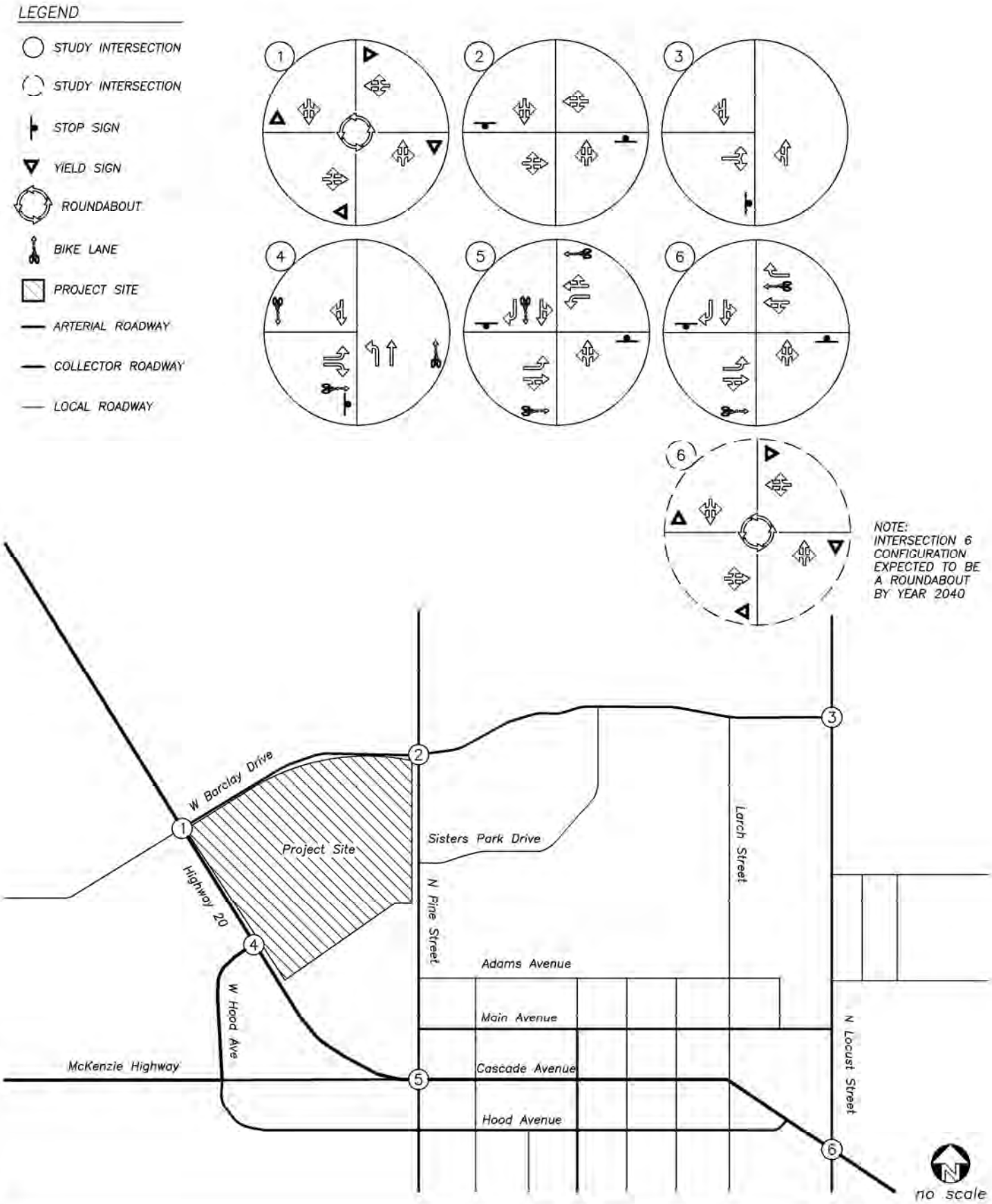
- US Highway 20 at W Barclay Drive;
- W Barclay Drive at N Pine Street;
- E Barclay Drive at N Locust Street;
- W Hood Avenue at US Highway 20;
- N Pine Street at US Highway 20; and
- N Locust Street at US Highway 20

[1] Kittelson & Associates, *Sisters Transportation System Plan Refinement*, June 2018

A summarized description of the study intersections is provided in Table 2. A vicinity map showing the project site, vicinity streets, and study intersection configurations is shown in Figure 2.

Table 2: Study Intersection Descriptions

Number	Intersection	Geometry	Traffic Control	Phasing/Stopped Approaches
1	US Highway 20 at W Barclay Drive	Roundabout	Yield-Controlled	NB/SB/EB/WB Yield-Controlled
2	W Barclay Drive at N Pine Street	Four-Legged	Stop-Controlled	NB/SB Stop-Controlled
3	E Barclay Drive at N Locust Street	Three-Legged	Stop-Controlled	EB Stop-Controlled
4	W Hood Avenue at US Highway 20	Three-Legged	Stop-Controlled	NEB Stop-Controlled
5	N Pine Street at US Highway 20	Four-Legged	Stop-Controlled	NB/SB Stop-Controlled
6	N Locust Street at US Highway 20	Four-Legged	Stop-Controlled	NB/SB Stop-Controlled



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VICINITY MAP

Figure 2

Sisters Woodlands

7/9/2020

Site Trips

Trip Generation

The proposed Sisters Woodlands involves a change in zoning from Public Facility (PF), Urban Area Reserve (UAR), and Open Space (OS) to North Sisters Business Park (NSBP), Downtown Commercial (DC), Multi-Family Residential (MFR), and Open Space (OS). Following this proposed change in zoning, a land division is expected to be proposed to subdivide the northern portion of the lot into a mixed-use housing development, which is expected to contain a mix of light industrial, commercial, recreational, cottage housing, and multi-family housing land uses.

In order to determine a reasonable "worst-case" scenario for trip generation of the site with the proposed zoning, the most recent concept site plan was used which shows a range of square footages and a range of multi-family housing units throughout the site. The upper range of multi-family housing units was used in order to determine a reasonable "worst-case" scenario for trip generation. The proposed Sisters Woodlands reasonable "worst case" scenario will include the construction of approximately 40,000 square feet of industrial buildings, approximately 24,000 square feet of commercial buildings, an approximately 20,000 square foot multi-use facility, and up to 346 units of multi-family housing (to include 2nd and 3rd-story flats above commercial buildings, duplex units, and cottage housing units).

The number of trips assigned to the existing site according to the *Sisters Transportation Plan*[2] (TSP) was also examined. In a memorandum[3] prepared by DKS Associates, the total trips assigned to the existing zoning for the South Barclay Parcel was shown. It should be noted that the South Barclay Parcel includes a portion of land not included in the proposed zone change. Since the zone change only includes the northern portion of the South Barclay Parcel, the total trips assigned to the existing zoning from the Sisters TSP was allocated between the two portions of the South Barclay Parcel. The northern portion, which is included in the zone change, is approximately 78% of the total South Barclay Parcel acreage. As a result, 78% of the total trips assumed in the TSP represents the trips generated in the existing zoning scenario and should be compared to trips generated in proposed zone change scenarios. The referenced memorandum is provided in the appendix.

Initial comments from ODOT staff recommended assigning trips to the existing zoning according to a "worst-case" scenario of permitted land uses for the existing PF district. Permitted land uses in the PF district were determined from the City of Sisters Development Code 2.7.200. Table 2.7.1 lists permitted land uses for the PF district. In order to determine a reasonable "worst-case" scenario for uses in the PF district, permitted uses with a high trip generation were chosen. Based on this criteria, land use code 550, *University/College*, and land use code 590, *Library*, were chosen as reasonable "worst-case" scenarios for development in the existing PF district.

The first method of assigning trips to the existing zoning using the Sisters TSP resulted in 243 total weekday trips, as shown in Table 3. A library or college/university built on the existing 32-acre site could reasonably generate as many or more trips than the 243 trips shown in the Sisters TSP, which would cause a zero or even a net decrease in trips when compared to the trips generated by the proposed zoning. As it is unlikely that a

[2] City of Sisters, *Sisters Transportation Plan*, January 2010.
[3] Chris Maciejewski, PE (DKS Associates), "City of Sisters USFS Property Redevelopment – Revised Draft Redevelopment Plan Traffic Impact Analysis", January 27, 2011 (Table 6).

project of this size could claim a zero increase in net site trips (and thus avoid paying proportional share payments), the first method of assigning trips to the existing zoning using the Sisters TSP was used.

To estimate the number of trips that will be generated by the proposed zoning, trip rates from the *Trip Generation Manual* [4] were used. Data for the following land use codes were used: 110 (*General Light Industrial*), 220 (*Multifamily Housing Low-Rise*), 495 (*Recreational Community Center*), and 820 (*Shopping Center*). Land use codes 110, 495, and 820 were used to estimate the proposed trip generation based on the gross square footage of the buildings. Land use code 220 was used to estimate the proposed trip generation based on the number of units.

The "worst-case scenario" trip generation calculations show that the proposed zoning is expected to generate a net increase of 113 trips during the evening peak hour. The trip generation calculations are summarized in Table 3 and detailed calculation worksheets are provided in the appendix.

Table 3: Zone Change Reasonable Worst-Case Trip Generation Summary

Zoning	Acres	Land Use	ITE Code	Evening Peak Hour		
				In	Out	Total
Existing Zoning[1]						
Public Facility (PF) Urban Area Reserve (UAR) Open Space (OS)		Total trips assumed in the TSP: 60 Retail Employees, 25 Service Employees, 5 Other Employees	-	145	167	312
		Reduction of 22%, which represents southern portion not included in the proposed zone change		-32	-37	-69
		Total Trips, Existing Zoning		*113*	*130*	*243*
Proposed Zoning						
North Sisters Business Park (NSBP)	4.93	40,000 Square Foot Light Industrial	110	3	22	25
Multi-Family Residential (MFR)	25.00	346 Dwelling Units Multi-Family	220	122	72	194
Open Space (OS)	4.26	20,000 Square Foot Multi-Use Facility	495	22	24	46
Downtown Commercial (DC)	1.96	24,000 Square Foot Shopping Center	820	44	47	91
		Total Trips, Proposed Zoning		*191*	*165*	*356*
Net Increase in Trips				78	35	113

1=The Sisters Transportation System Plan (TSP) allocates trips to this site as part of the TSP. The area proposed for rezone includes approximately 78% of the total area included in the TSP. Therefore, for the purpose of the zone change, trip generation for development under the existing zoning was shown as "Existing Zoning".

[4] Institute of Transportation Engineers, *Trip Generation Manual*, 10th Edition, 2017.

To prepare a worst-case analysis, it is assumed that there will be no pass-by trips, site internalization, or trip sharing reductions in trip generation for this site.

It should be noted that the proposed development plan for the site includes a trip generation estimate that is more in line with the assumptions made to the existing zoning in the TSP. To estimate the number of trips that will be generated by the proposed development plan, trip rates from the *Trip Generation Manual* were used. Data for the following land use codes were used: 110 (*General Light Industrial*), 220 (*Multifamily Housing Low-Rise*), 221 (*Multifamily Housing Mid-Rise*), 495 (*Recreational Community Center*), and 820 (*Shopping Center*). Land use codes 110, 495, and 820 were used to estimate the proposed development's trip generation based on the gross square footage of the buildings. Land use codes 220 and 221 were used to estimate the proposed development's trip generation based on the number of units.

The trip generation calculations show that the proposed development plan is expected to generate a net increase of 58 trips during the evening peak hour. Again, to prepare a "worst-case" trip generation for the proposed development plan, it is assumed that there will be no pass-by trips, site internalization, or trip sharing reductions in trip generation for this site.

The trip generation calculations are summarized in Table 4 and detailed calculation worksheets are provided in the appendix.

Table 4: Proposed Development Plan Trip Generation Summary

Zoning	Acres	Land Use	ITE Code	Evening Peak Hour In	Out	Total
Existing Zoning[1]						
Public Facility (PF) Urban Area Reserve (UAR) Open Space (OS)		Assumed in the TSP: 60 Retail Employees, 25 Service Employees, 5 Other Employees	-	145	167	312
		Reduction of 22%, which represents southern portion not included in the proposed zone change		32	37	69
		Total Trips, Existing Zoning		*113*	*130*	*243*
Proposed Zoning						
North Sisters Business Park (NSBP)	4.93	40,000 Square Foot Light Industrial	110	3	22	25
Multi-Family Residential (MFR)	25.00	186 Dwelling Units Low-Rise Multi-Family	220	66	38	104
		79 Dwelling Units Mid-Rise Multi-Family	221	21	14	35
Open Space (OS)	4.26	20,000 Square Foot Multi-Use Facility	495	22	24	46
Downtown Commercial (DC)	1.96	24,000 Square Foot Shopping Center	820	44	47	91
		Total Trips, Proposed Zoning		*156*	*145*	*301*
Net Increase in Trips				43	15	58

1=The Sisters Transportation System Plan (TSP) allocates trips to this site as part of the TSP. The area proposed for rezone includes approximately 78% of the total area included in the TSP. Therefore, for the purpose of the zone change, trip generation for development under the existing zoning was shown as "Existing Zoning".

Although the proposed development plan generates fewer trips and is more consistent with Sisters TSP assumptions for the existing zoning, the "worst-case" trip generation shown in Table 3 was used for the analysis scenarios shown in this report.

Trip Distribution

The directional distribution of site trips to and from the proposed site was estimated based on locations of likely trip origins and destinations, was well as locations of major transportation facilities in the site vicinity. The following trip distribution was estimated and used for analysis:

- Approximately 30 percent of site trips will travel to/from the southeast along US Highway 20;
- Approximately 15 percent of site trips will travel to/from the south along S Pine Street;

- Approximately 10 percent of site trips will travel to/from local destinations south of the project site along N Pine Street;
- Approximately 10 percent of site trips will travel to/from the northwest along US Highway 20;
- Approximately 10 percent of site trips will travel to/from the west along McKinney Butte Road;
- Approximately 10 percent of site trips will travel to/from local destinations along N Locust Street;
- Approximately 5 percent of site trips will travel to/from the north along Camp Polk Road;
- Approximately 5 percent of site trips will travel to/from the east along Sisters Park Drive; and
- Approximately 5 percent of site trips will travel to/from the north along N Pine Street.

The following assumptions were used for trip distribution:

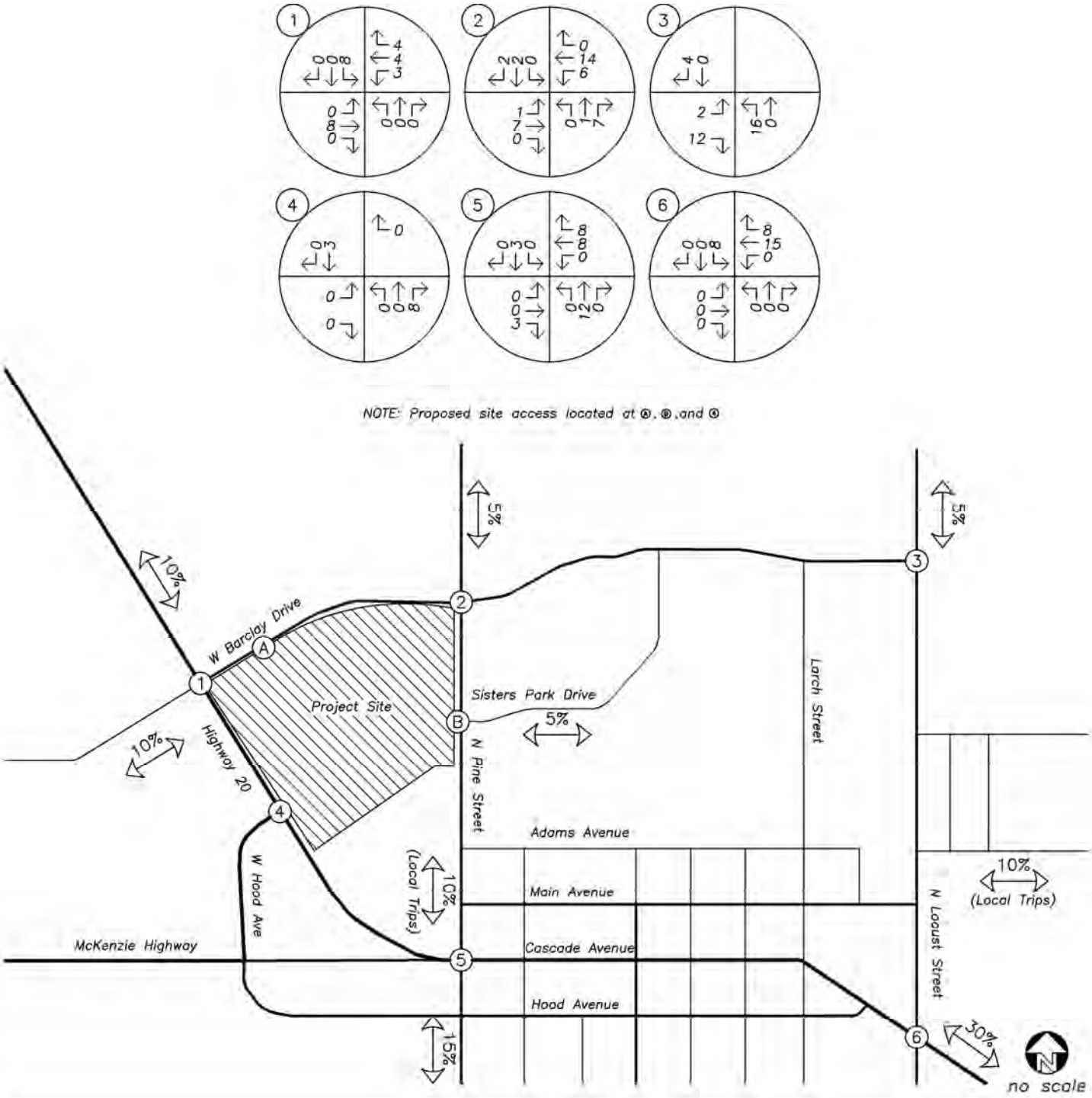
- For trips traveling to the southeast along US Highway 20: It was assumed that trips exit the site via the proposed site accesses along W Barclay Drive and N Pine Street, and then access US Highway 20 from N Locust Street in order to avoid delays making a left-turn from N Pine Street onto US Highway 20. For the 2040 planning horizon plus zone change scenario, it was assumed that the roundabout at the intersection of N Locust Street at US Highway 20 is installed and operational.
- For trips traveling from the southeast along US Highway 20: It was assumed that trips to the site would be split between all three site accesses. Approximately one-third of site trips would use the W Barclay Drive access (via N Locust Street and W Barclay Drive), approximately one-third of site trips would use the N Pine Street access (via US Highway 20 and N Pine Street), and approximately one-third of site trips would use the site access directly off US Highway 20.
- For trips traveling to/from local destinations south of the project site along N Pine Street: It was assumed that trips to the site would use the proposed site access on N Pine Street. For trips exiting the site, it was assumed that half of the trips would use the proposed site access on N Pine Street and half of the trips would use the proposed site access on W Barclay Drive.
- For trips traveling to/from the northwest along US Highway 20: It was assumed that all trips into the site would use the proposed site access on W Barclay Drive. For trips exiting the site, it was assumed that half of the trips would use the proposed site access on W Barclay Drive and the other half would exit the site via the proposed site access on US Highway 20.
- For trips traveling to/from local destinations along N Locust Street: It was assumed that half of the trips would use the proposed site access on N Pine Street, and half would use the proposed site access on W Barclay Drive.
- For trips traveling to/from the north along Camp Polk Road: It was assumed that half of the trips would use the proposed site access on N Pine Street, and half would use the proposed site access on W Barclay Drive.
- For trips traveling to/from the north along N Pine Street: It was assumed that half of the trips would use the proposed site access on N Pine Street, and half would use the proposed site access on W Barclay Drive.

Figure 3 shows the net trip distribution and assignment for the proposed zone change.

LEGEND

XX% PERCENT OF PRIMARY TRIPS

NET TRIP GENERATION			
	IN	OUT	TOTAL
PM	78	35	113



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SITE TRIP DISTRIBUTION & ASSIGNMENT

"Worst-Case" Scenario - Net Change in Site Trips

PM Peak Hour

Figure 3

Sisters Woodlands

7/9/2020

Traffic Volumes

Existing Conditions

With the exception of the intersection of W Hood Avenue at US Highway 20, traffic counts were conducted at the study intersections on October 15, 2019, from 4:00 PM to 6:00 PM. Traffic counts for the intersection of W Hood Avenue at US Highway 20 were conducted on December 12, 2018, from 2:00 PM to 6:00 PM. Turning movement volumes corresponding to the system peak hour were used for analysis.

City staff were concerned that the counts were taken in December 2018 and indicated that updated counts from May/June 2020 would be required. As a response to the COVID-19 pandemic, Oregon Governor Kate Brown issued a "Stay Home Stay Safe" order on March 23rd, 2020. This statewide order requires residents to stay home except for essential needs. Schools and most retail establishments have been closed. The goal of collecting new traffic counts in late May or early June would be to capture both school trips as well as early summer tourism traffic. As schools are presently closed and tourism is low due to the "Stay Home Stay Safe" order, neither of these volumes would be reflected in any counts taken in May/June 2020. As a result, any traffic counts collected in May or June would most likely not reflect typical conditions. In lieu of collecting new data, recently collected traffic counts were used for existing volumes and to build planning horizon volumes for the Sisters Woodlands transportation impact study.

Since US Highway 20 is under the juristiction of the Oregon Department of Transportation (ODOT), procedures described in ODOT's *Analysis Procedures Manual* were used to seasonally adjust existing traffic volumes to reflect the 30th-highest hour in a typical year. Using a map of seasonal trends, this portion of US Highway 20 was determined to show a summer trend, and a seasonal adjustment factor (SAF) of 1.18349 was applied to through volumes along US Highway 20.

The existing seasonally-adjusted traffic volumes at the study intersections are shown in Figure 4 .

Year 2040 Planning Horizon Conditions

To provide analysis of the impact of the proposed zone change, an estimate of future traffic volumes is required. A growth rate must be applied to recorded traffic volumes in order to calculate planning horizon volumes.

Growth rates for through traffic on US Highway 20 were derived using ODOT's 2038 Future Volume Table. Corresponding data was used for each of the four intersections along US Highway 20:

- Data corresponding to Milepost 100.05 (ODOT Highway 16) was used for the intersection of US Highway 20 at W Barclay Drive;
- Data corresponding to Milepost 92.07 (ODOT Highway 15) was used for the intersection of W Hood Avenue at US Highway 20;
- Data corresponding to Milepost 92.52 (ODOT Highway 15) was used for the interesction of N Pine Street at US Highway 20; and

- Data corresponding to Milepost 92.85 (ODOT Highway 15) was used for the intersection of N Locust Street at US Highway 20.

The following growth rates were applied to US Highway 20 through volumes over a 21-year period to determine year 2040 planning horizon volumes. For through volumes along US Highway 20 at the intersection of W Hood Avenue, a growth rate was applied over a 22-year period since existing traffic counts were taken in 2018 as opposed to 2019:

- US Highway 20 at W Barclay Drive – 1.02386
- W Hood Avenue at US Highway 20 – 1.07207
- N Pine Street at US Highway 20 – 1.16458
- N Locust Street at US Highway 20 – 1.30706

For non-ODOT facilities, a compounded growth rate of two percent per year was applied to the existing traffic volumes over a 21-year period to determine year 2040 planning horizon volumes. At the intersection of W Hood Avenue at US Highway 20, a compounded growth rate of two percent per year was applied to the existing traffic volumes over a 22-year period to determine year 2040 planning horizon volumes.

In addition to the expected planning horizon growth in the site vicinity, the nearby McKenzie Meadows subdivision will impact future volumes at the study intersections. This development is proposed for the site west of McKinney Ranch Road and east of Sisters High School, on the north side of W McKinney Butte Road, and will include 150 single-family homes and 55 units of low-rise multi-family housing. Since this development will likely be contributing trips to the transportation system by 2040, the site trips it is projected to generate were included in the 2040 planning horizon volumes. A figure showing the in-process site trips generated by this development that are expected to impact the study intersections is provided in the appendix.

The Threewind Master Plan is also expected to impact future volumes at the study intersections. This development is proposed for the site southeast of W McKinney Butte Road and west of W Hood Avenue, and will include 50 units of multi-family housing and 28,000 square feet of commercial space. Since this development will likely be contributing trips to the transportation system by 2040, the site trips it is projected to generate were included in the 2040 planning horizon volumes. A figure showing the in-process site trips generated by this development that are expected to impact the study intersections is provided in the appendix.

The Dollar General is also expected to impact future volumes at the study intersections. This development is proposed for the site southeast of McKinney Butte Road, east of N Wheeler Loop, and northwest of the existing Bi-Mart store, and includes construction of a 9,100 square foot building. Since this development will likely be contributing trips to the transportation system by 2040, the site trips it is projected to generate were included in the 2040 planning horizon volumes. A figure showing the in-process site trips generated by this development that are expected to impact the study intersections is provided in the appendix.

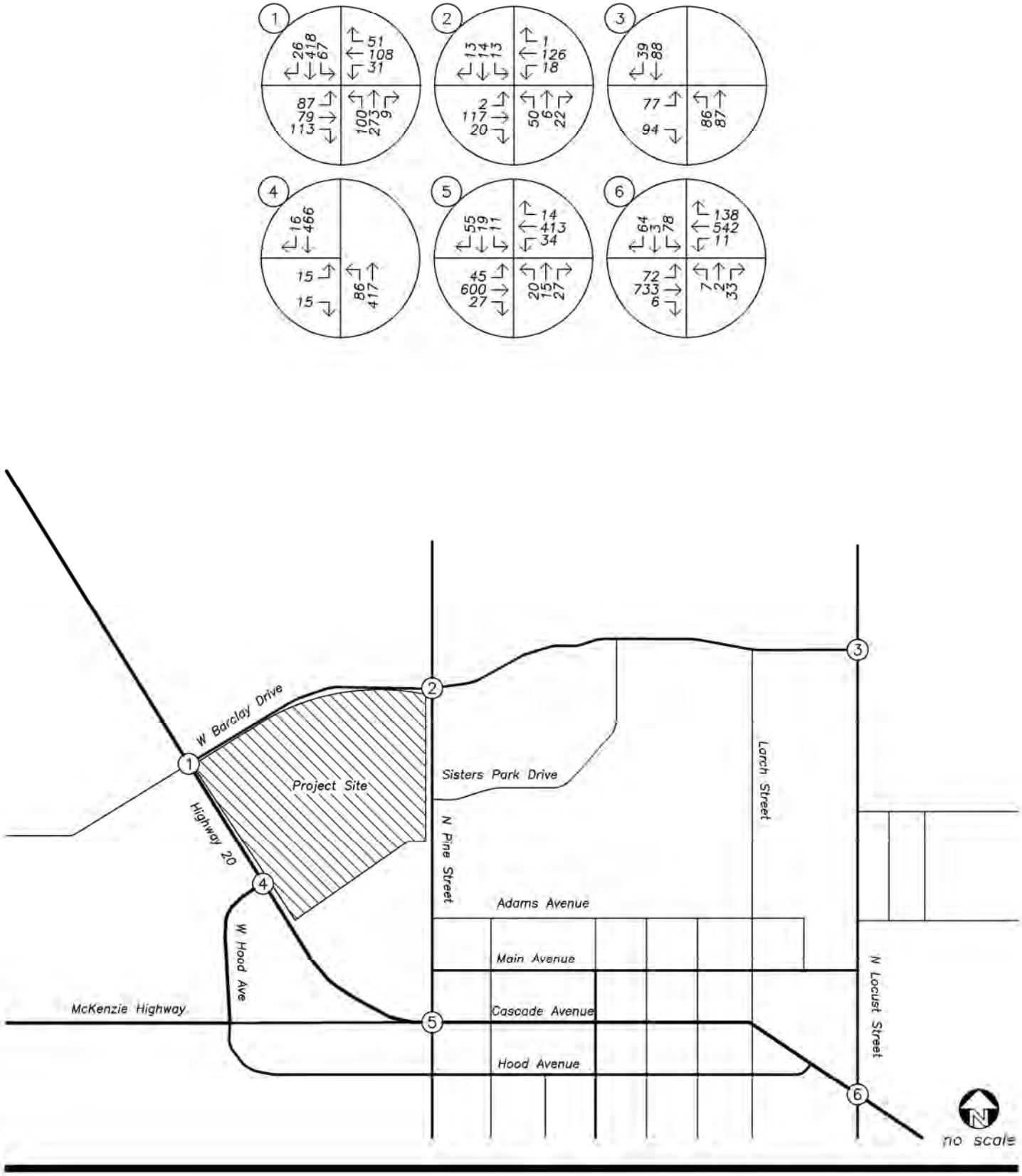
Finally, the area north of W Barclay Drive and west of N Pine Street is also expected to impact future volumes at the study intersections. A proposed zone change application for this site indicates a variety of future estimated land uses. Since this development will likely be contributing trips to the transportation system by 2040, the site trips it is projected to generate (based on the zone change traffic analyses) were included in the 2040 planning

horizon volumes. A figure showing the in-process site trips generated by this development that are expected to impact the study intersections is provided in the appendix.

Figure 5 shows the projected year 2040 planning horizon traffic volumes during the evening peak hour.

Year 2040 Planning Horizon with Zone Change Conditions

Figure 6 shows year 2040 planning horizon plus zone change traffic volumes, which include site trips generated by the proposed zone change.



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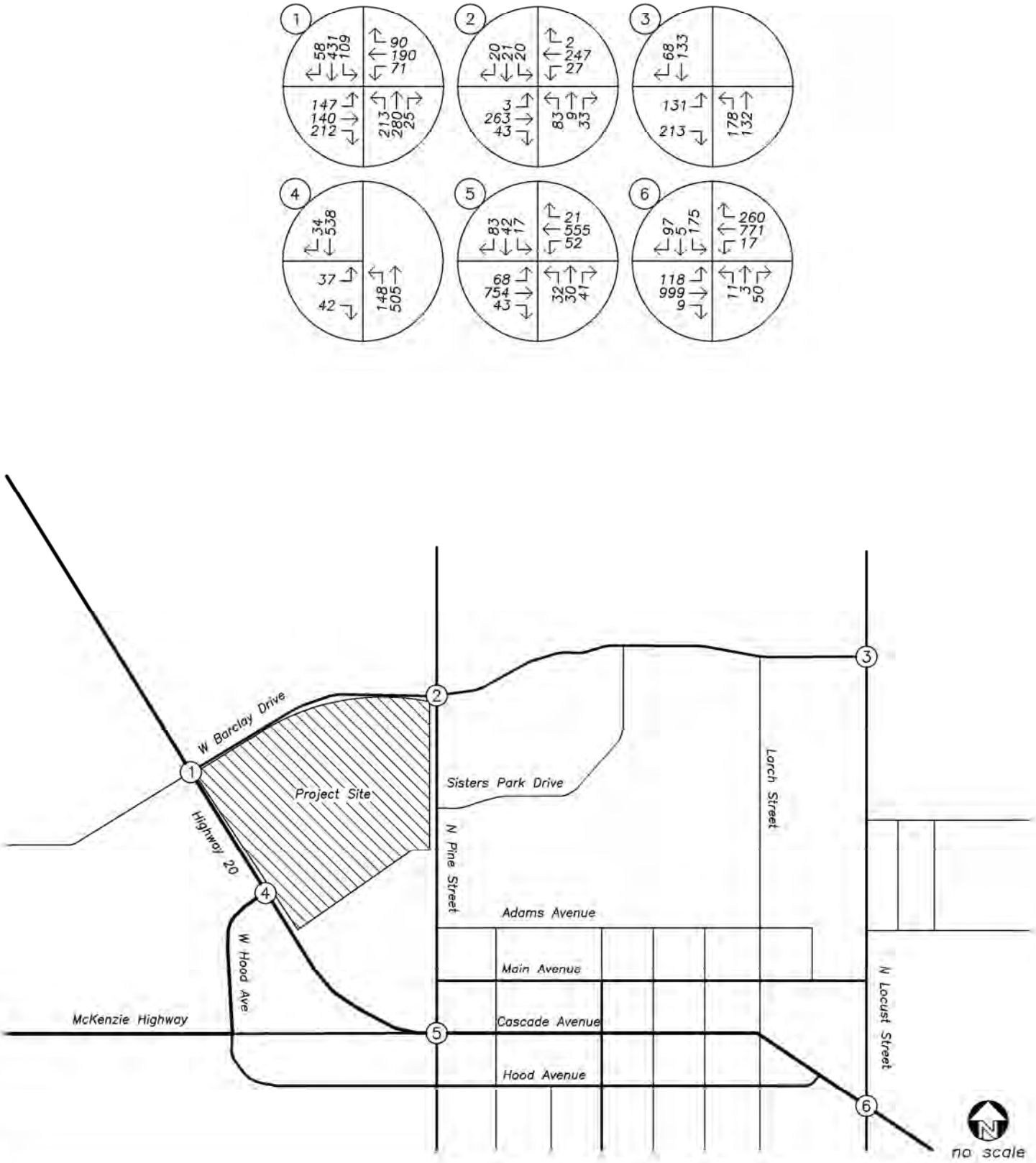
TRAFFIC VOLUMES
Existing Conditions
PM Peak Hour

Figure 4
Sisters Woodlands
7/9/2020



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TRAFFIC VOLUMES

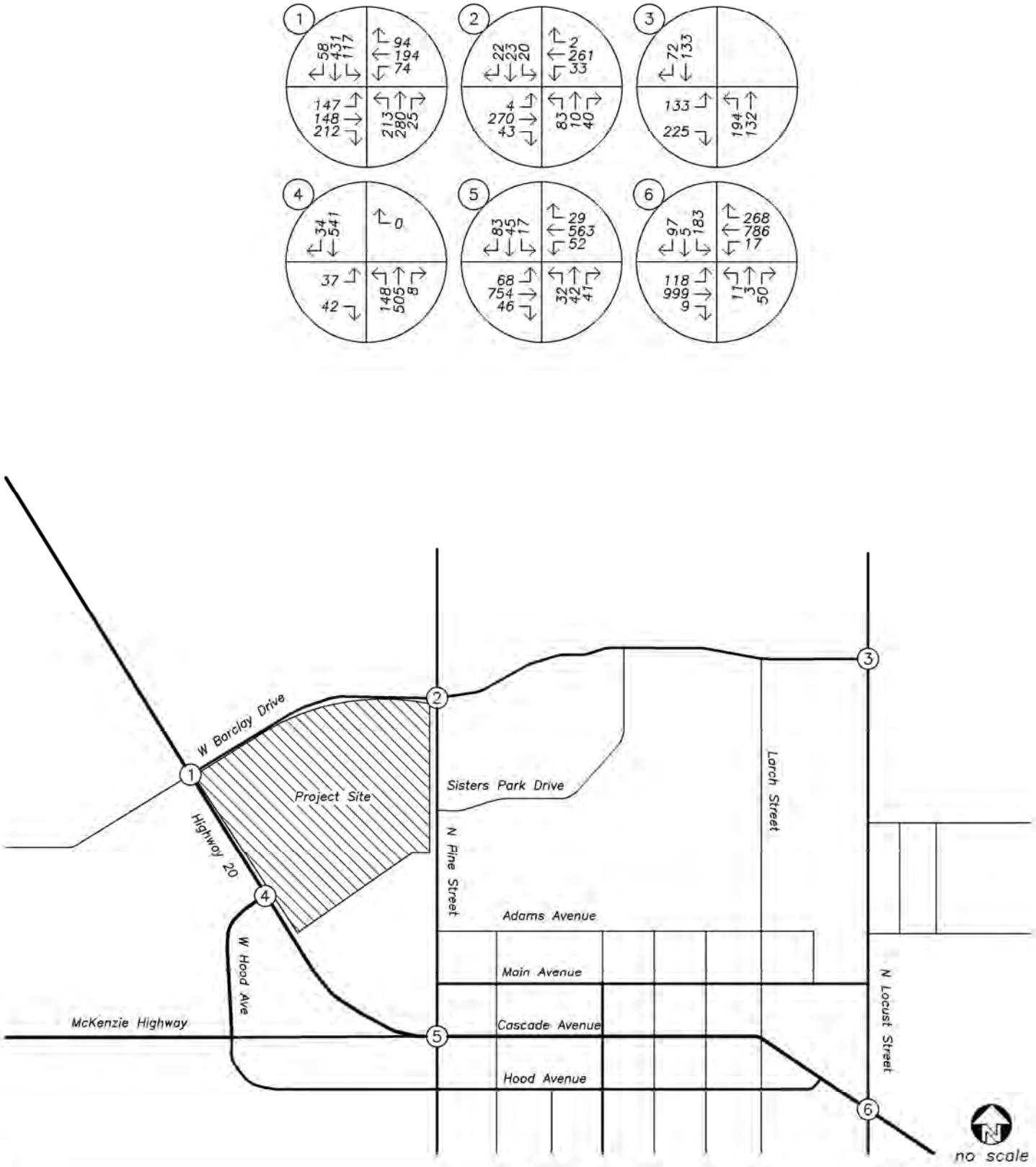
Year 2040 Planning Horizon

PM Peak Hour

Figure 5

Sisters Woodlands

7/9/2020



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TRAFFIC VOLUMES

Year 2020 Planning Horizon with Zone Change

PM Peak Hour

Figure 6

Sisters Woodlands

7/9/2020

Safety Analysis

Crash History Review

Using data obtained from ODOT's Crash Data System, a review of approximately five years of the most recent available crash history (January 2013 through December 2017) was performed at the study intersections. The crash data was evaluated based on the number of crashes, the type of collisions, and the severity of the collisions. Crash severity is based on injuries sustained by people involved in the crash, and includes five categories:

- PDO – property damage only;
- Injury C – possible injury or complaint of pain;
- Injury B – non-incapacitating injury;
- Injury A – incapacitating injury (i.e. bleeding or broken bones); and
- Fatality

Crash rates provide the ability to compare safety risks at different intersection by accounting for both the number of crashes that have occurred during the study period and the number of vehicles that typically travel through the intersection. Crash rates were calculated using the common assumption that traffic counted during the evening peak hour represents approximately 10 percent of the annual average daily traffic (AADT) at the intersection. Crash rates in excess of 1.0 crashes per million entering vehicles (CMEV) may be indicative of design deficiencies and therefore require a need for further investigation and possible mitigation.

Table 5 provides a summary of crash types while Table 6 summarizes crash severities and rates for each of the study intersections. Detailed crash data is provided in the appendix to this report.

Table 5: Crash Type Summary

Intersection		Crash Type								Total Crashes
		Turn	Rear End	Angle	Fixed Object	Side swipe	Ped	Backing	Other	
1	US Highway 20 at W Barclay Drive	0	0	5	1	0	0	0	0	6
2	W Barclay Drive at N Pine Street	0	0	3	0	0	0	0	0	3
3	E Barclay Drive at N Locust Street	1	0	0	0	0	0	0	0	1
4	W Hood Avenue at US Highway 20	1	0	0	0	0	0	0	0	1
5	N Pine Street at US Highway 20	1	3	0	0	0	1	0	0	5
6	N Locust Street at US Highway 20	2	3	1	0	0	0	0	0	6

Table 6: Crash Severity and Rate Summary

Intersection		SEVERITY					Total Crashes	Peak Hour Volume	Crash Rate
		PDO	C	B	A	Fatality			
1	US Highway 20 at W Barclay Drive	3	0	1	2	0	6	12,560	0.26
2	W Barclay Drive at N Pine Street	0	0	3	0	0	3	4,020	0.41
3	E Barclay Drive at N Locust Street	0	1	0	0	0	1	4,710	0.12
4	W Hood Avenue at US Highway 20	1	0	0	0	0	1	8,790	0.06
5	N Pine Street at US Highway 20	2	3	0	0	0	5	11,230	0.24
6	N Locust Street at US Highway 20	1	5	0	0	0	6	14,910	0.22

BOLDED *text indicates a crash rate in excess of 1.00 CMEV.*

Based on a review of the crash data, there were several crashes which involved either a pedestrian or were classified as "Incapacitating Injury – Bleeding, Broken Bones" (*Injury A*) or "Non-Incapaciting Injury" (*Injury B*). An in-depth analysis of these crashes is detailed in the following sections to determine any potential crash patterns indicative of safety issues.

US Highway 20 at W Barclay Drive

The intersection of US Highway 20 at W Barclay Drive had two crashes resulting in injuries consistant with *Injury A* classification. The first crash occurred when the driver of a westbound vehicle struck a southbound-traveling motorcycle. Both the motorcyclist and passenger sustained injuries consistant with *Injury A* classification. The second crash occurred when the driver of a northbound vehicle failed to yield right-of-way to an westbound-traveling vehicle and struck the westbound vehicle. All three occupants of the westbound vehicle sustained injuries consistent with *Injury A* classification.

The intersection also had one crash resulting in injuries consistent with *Injury B* classification. The crash occurred when the driver of a westbound vehicle failed to yield right-of-way to a southbound-traveling vehicle and struck the southbound vehicle. The driver of the southbound vehicle and three passengers sustained injuries consistent with *Injury B* classification.

It should be noted that all of the crashes in the analysis period occurred in 2013, which was before construction of the existing roundabout at the intersection of US Highway 20 at W Barclay Drive.

W Barclay Drive at N Pine Street

The intersection of W Barclay Drive at N Pine Street had three crashes resulting in injuries consistent with *Injury B* classification. The first crash occurred when the driver of a southbound-traveling vehicle ran a stop sign and collided with an eastbound-traveling vehicle. The crash reported noted that "inattention" was a factor in the collision. The southbound-traveling vehicle overturned after the collision, and the driver sustained injuries

consistent with *Injury B* classification, while the driver and passenger of the eastbound-traveling vehicle sustained injuries consistent with *Injury C* classification.

The second crash occurred when the driver of a northbound-traveling vehicle ran a stop sign and collided with a westbound-traveling vehicle. The northbound-traveling vehicle overturned after the collision, and the driver and passenger both sustained injuries consistent with *Injury B* classification. The driver of the westbound-traveling vehicle did not report any injuries.

The third crash occurred when the driver of a southbound-traveling vehicle ran a stop sign and collided with a westbound-traveling vehicle. The driver of the southbound-traveling vehicle sustained injuries consistent with *Injury B* classification, while the passenger sustained injuries consistent with *Injury C* classification. Both the driver of the westbound-traveling vehicle and the passenger sustained injuries consistent with *Injury B* classification.

Based on a review of the crash data at the intersection of W Barclay Drive at N Pine Street, it was noted that all three collisions occurred in 2017 and were the result of either a northbound or southbound-traveling vehicle failing to stop at the stop signs located along N Pine Street. Upon review of the study intersection, it was noted that the northbound approach of N Pine Street has a "Stop Ahead" warning sign as well as a flashing stop sign. The southbound approach of N Pine Street also has a flashing stop sign. Both of the flashing stop signs were in place by May of 2018 and appear to have been installed following the three crashes in 2017. The preliminary crash data from January 2018 to December 2018 shows that there were no reported crashes at the intersection during this analysis period.

N Pine Street at US Highway 20

The intersection of N Pine Street at US Highway 20 had one crash which involved a pedestrian and was classified as "Possible Injury or Complaint of Pain" (*Injury C*). The crash occurred when the driver of a westbound vehicle failed to yield right-of-way to a southbound pedestrian crossing in a marked crosswalk. The pedestrian sustained injuries consistent with *Injury C* classification.

Based on an analysis of the available crash data, all intersections were calculated has having a crash rate below 1.00 CMEV. No significant trends or crash patterns were identified at any of the study intersections that are indicative of safety concerns. Accordingly, no safety mitigation is recommended per the crash data analysis.

Sight Distance Evaluation

Actual site access locations will be determined at the time of a future land division application, following the zone change. The most recent site plan shows three site access locations. One site access is along W Barclay Drive, approximately 750 feet from the intersection of W Barclay Drive at N Pine Street. The second site access is located along N Pine Street across from Sisters Park Drive, approximately 700 feet from the intersection of W Barclay Drive at N Pine Street. Finally, the third site access is located along US Highway 20 across from W Hood Avenue, approximately 860 feet from the intersection of US Highway 20 at W Barclay Drive.

The City of Sisters Development Code 3.1.300(I)(1) identifies access spacing standards for various roadway classifications. W Barclay Drive and N Pine Street are classified by the City of Sisters as collector roadways, and the minimum driveway-to-driveway spacing along a collector roadway is 100 feet. In addition, the minimum roadway-to-driveway spacing along a collector roadway is also 330 feet. US Highway 20 is classified by ODOT

as a statewide highway. The *Oregon Highway Plan*[5] requires an access management spacing standard of 770 feet for statewide highways in rural areas with a 35 mph posted speed.

The most recent site plan shows that proposed site access locations are in compliance with the access spacing standards shown in Development Code 3.1.300(I)(1) as well as the *Oregon Highway Plan*. At the time of the land division application, it should be verified that actual site access locations meet City of Sisters and ODOT access spacing standards.

Warrant Analysis

Left-turn lane warrants and preliminary traffic signal warrants were examined for the study intersections where such treatments would be applicable.

Left-Turn Lane Warrants

Left-turn lane warrants were examined for the study intersections where such treatments would be applicable.

A left-turn refuge lane is primarily a safety consideration for the major street, removing left-turning vehicles from the through traffic stream. The left-turn lane warrants were examined using methodologies provided in the ODOT's *Analysis Procedures Manual* (APM). Left-turn lane warrants were evaluated based on the number of advancing and opposing vehicles, number of turning vehicles, travel speed, and the number of through lanes.

Left-turn lane warrants were not examined for the intersection of E Barclay Drive at N Locust Street. This intersection is identified in the City's TSP Refinement and a future project includes either the realignment of the intersection to make a continuous movement to/from the west and south legs, or the installation of a single-lane roundabout.

Left-turn lane warrants were also not examined for the intersection of N Locust Street at US Highway 20. This intersection is identified in the City's TSP Refinement, and a future project includes the construction of a roundabout.

Left-turn lane warrants are projected to be met under the year 2040 planning horizon scenario for the intersection of W Barclay Drive at N Pine Street, specifically for the westbound approach.

Preliminary Traffic Signal Warrants

Preliminary traffic signal warrants were examined for the following unsignalized study intersections to determine whether the installation of a new traffic signal will be warranted at the intersection upon completion of the proposed development:

- W Barclay Drive at N Pine Street;
- W Hood Avenue at US Highway 20; and
- N Pine Street at US Highway 20.

Due to insufficient traffic volumes, traffic signal warrants are not projected to be met at the unsignalized study intersections under any of the analysis scenarios. Traffic signal warrants were not examined for the intersection of N Locust Street at US Highway 20 due to the intersection being listed in the City's TSP Refinement as a candidate for a future roundabout. It was assumed in this study that the roundabout would be in place by the

[5] Oregon Department of Transportation, *1999 Oregon Highway Plan: Including amendments November 1999 through May 2015*, 1999.

year 2040. In addition, traffic signal warrants were not examined for the intersection of E Barclay Drive at N Locust Street due to the intersection being listed in the City's TSP Refinement as a candidate for a future intersection realignment or roundabout. It was assumed in this study that the realignment would be in place by the year 2040.

Operational Analysis

A capacity and delay analysis were conducted for each of the study intersections per the unsignalized intersection analysis methodologies in the *Highway Capacity Manual* (HCM)[6]. Intersections are generally evaluated based on the average control delay experienced by vehicles and are assigned a grade according to their operation. The level of service (LOS) of an intersection can range from LOS A, which indicates very little or no delay experienced by vehicles, to LOS F, which indicates a high degree of congestion and delay. The volume-to-capacity (v/c) ratio is a measure that compares the traffic volumes (demand) against the available capacity of an intersection.

Performance Standards

The study intersections of US Highway 20 at W Barclay Drive, N Pine Street at US Highway 20, W Hood Avenue at US Highway 20, and N Locust Street at US Highway 20 are under the jurisdiction of ODOT. The applicable minimum operation standard for this facility is established under the *Oregon Highway Plan*[7] and is based on the v/c ratio of the intersection. According to the *Oregon Highway Plan*, US Highway 20 is a freight route on a statewide highway, and has a maximum allowable v/c ratio of 0.85. The above mentioned intersections along US Highway 20 were analyzed according to this standard.

The study intersections of W Barclay Drive at N Pine Street and E Barclay Drive at N Locust Street, both two-way stop-controlled intersections, are under the jurisdiction of the City of Sisters. The City's TSP Refinement states that two-way stop-controlled intersections should have a v/c ratio no greater than 0.90.

Delay & Capacity Analysis

The LOS, delay, and v/c results of the capacity analysis are shown in Table 7 for the evening peak hour. For the intersection of E Barclay Drive at N Locust Street, capacity analysis was performed assuming the roadway alignment detailed in the City's TSP Refinement was complete and operational by 2040. In addition, for the intersection of N Locust Street at US Highway 20, the capacity analysis was performed assuming the roundabout detailed in the City's TSP Refinement was complete and operational by 2040. Detailed calculations as well as tables showing the relationship between delay and LOS are included in the appendix to this report.

[6] Transportation Research Board, *Highway Capacity Manual 6th Edition*, 2016.
[7] Oregon Department of Transportation, *1999 Oregon Highway Plan: Including amendments November 1999 through May 2015*, 1999

Table 7: Capacity Analysis Summary

Intersection	Existing			2040 Planning Horizon			2040 Planning Horizon Plus Zone Change		
	LOS	Delay (s)	v/c	LOS	Delay (s)	v/c	LOS	Delay (s)	v/c
1. US Highway 20 at W Barclay Drive	A	9	0.53	C	19	0.79	C	20	0.81
2. W Barclay Drive at N Pine Street	B	12	0.11	C	24	0.33	D	27	0.36
3. E Barclay Drive at N Locust Street	B	13	0.15	C	22	0.37	C	23	0.39
4. W Hood Avenue at US Highway 20	D	26	0.09	F	58	0.39	F	87	0.51
5. N Pine Street at US Highway 20	F	57	0.23	F	>200	**1.63**	F	>200	**1.90**
6. N Locust Street at US Highway 20	F	>200	**1.10**	F	59	**1.12**	F	63	**1.13**

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. ***BOLDED*** *results indicate operation above acceptable jurisdictional standards*

Based on the results of the operational analysis, there are two intersections that are either currently or projected to operate with v/c rations in excess of minimum ODOT performance standards:

- N Pine Street at US Highway 20
- N Locust Street at US Highway 20

Further inspection and potential mitigations at the intersections listed above are discussed within the following *Mitigation Analysis* section.

All other study intersections are currenlty operating acceptably per City of Sisters and ODOT standards and are projected to continue operating acceptably though the 2040 planning horizon, regardless of the potential increase in site trip generation upon rezoning the site. No operational mitigation is necessary or recommended at these intersections.

Mitigation Analysis

As determined within the *Operational Analysis* section, there are two study intersections that are projected to exceed acceptable levels of operation per ODOT performance standards. The following narrative discusses potential mitigative measures which may improve operation of study intersections to acceptable levels. The City of Sisters TSP Refinement, Deschutes County TSP, and ODOT's Statewide Transportation Improvement Plan (STIP) were reviewed to determine any planned projects at these intersections.

N Pine Street at US Highway 20

The intersection of N Pine Street at US Highway 20 is projected to exceed ODOT's maximum v/c ratio of 0.85 under year 2040 planning horizon conditions. This is due primarily to a relatively high northbound left-turn volume from N Pine Street onto US Highway 20. The intersection operates acceptably for existing conditions, but delays increase in future years, regardless of the zoning change of the project site. No mitigations to improve capacity are recommended at this intersection for the following reason:

- During peak hours when delays are long, drivers will self-select how they enter US Highway 20 to avoid excessive delays. Local traffic may choose a number of other routes to avoid US Highway 20 and utilize the local street system.

In addition, the Motor Vehicle Master Plan Projects table (Table 7-5) in the City's TSP Refinement lists a possible mitigation of restricting northbound and southbound approaches at the intersection to right-turns only. The intersection should be monitored to determine whether these movement restrictions become necessary in the future.

N Locust Street at US Highway 20

The intersection of N Locust Street at US Highway 20 is also projected to operate above acceptable ODOT standards; however, this issue is projected to occur regardless of whether the proposed zoning change is approved. The City of Sisters is aware that the intersection fails to meet operational standards, and recently conducted a roundabout feasibility study at the intersection.

According to the City's TSP Refinement, near-term mitigation at the intersection includes the installation of a mini-roundabout with the intent of addressing near-term capacity and safety deficiencies. It is our understanding that following preliminary investigation into the feasibility of a mini-roundabout, the City and ODOT have decided not to further pursue this interim option. In addition, a long-term mitigation improvement includes the installation of a full-size roundabout at the intersection. Initial traffic forecasts and analysis performed for the City's TSP Refinement indicate that a single-land roundabout would operate acceptably through 2030 but not for the entire planning horizon.

Based on the operational analysis results either with or without the proposed zone change, it is recommended that design options to add capacity be explored, such as the addition of a westbound right-turn slip lane. However, capacity enhancements such as additional lanes can affect safety at the intersection, particularly for vulnerable roadway users. The City of Sisters and ODOT will need to balance safety and capacity when deciding the configuration of this intersection improvement. For the purpose of this 2040 planning horizon analysis, it was assumed that a standard, single-lane roundabout would be constructed.

<u>Proposed Mitigation:</u> The applicant proposes mitigation in the form of a proportional share payment for the intersection of N Locust Street at US Highway 20. Improvement of this intersection is the largest planned intersection improvement in Sisters, and the project cost and implementation would far exceed the rough proportionality of the impacts of this site development. Therefore, a proportional share fee is proposed and explained further in the *Proportional Share Mitigation Assessment* section.

Proportional Share Mitigation Assessment

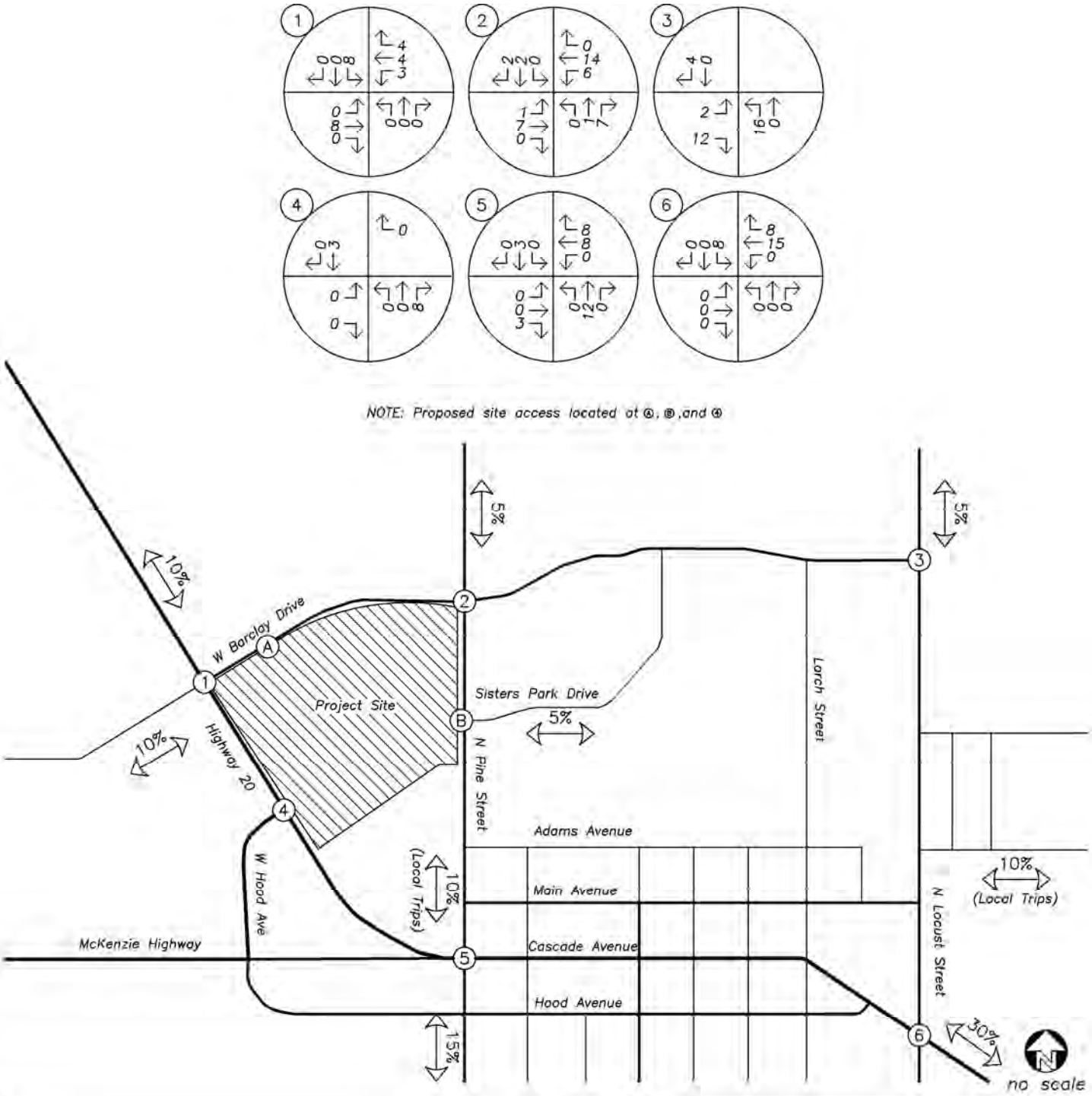
Based on input from City of Sisters staff and an established proportional share payment methodology agreed upon for a prior project (CP 20-02, ZC 20-01), proportional share fees were evaluated for the Barclay-Locust corridor and impacts to US Highway 20. According to City staff, the diversion of traffic from US Highway 20 onto the corridor will provide the necessary mitigation to avoid a significant impact at these cited highway intersections. City and ODOT staff offered a proposed mitigation to include a proportional share payment towards improvements along US Highway 20 and the parallel Alternate Route to support east-west mobility needs along the US Highway 20 corridor.

As discussed, the proposed development plan shown in Table 4 results in a net increase in trip generation of 58 evening peak hour trips, but the "worst-case" analysis scenario results in a trip generation that is higher (a net increase of 113 trips). For the purpose of determining a proportional share cost payment, trip generation estimates were based upon the "worst-case" analysis scenario shown in Table 3 in the *Trip Generation* section of this report.

For the Sisters Woodlands zone change, it is proposed that the proportional share mitigation be based on the potential net increase of site trips traveling along the US Highway 20 corridor through Sisters due to the proposed zone change. The same trip distribution listed in the *Trip Distribution* section was used for this analysis. Specifically, the net increase in site trips making a turning movement onto or off US Highway 20 at the intersections of W Barclay Drive at US Highway 20 and N Locust Street at US Highway 20 were used to calculate proportional share fees. This methodology was established and approved by City and ODOT staff for the above-mentioned project CP 20-02, ZC 20-01. Figure 7 shows the trip distribution and assignment of the potential net increase in the number of trips estimated from the proposed zoning.

XX% PERCENT OF PRIMARY TRIPS

TRIP GENERATION			
	IN	OUT	TOTAL
PM	78	35	113



lancaster mobley

SITE TRIP DISTRIBUTION & ASSIGNMENT

Proportional Share Mitigation
PM Peak Hour

Figure 7

Sisters Woodlands
7/9/2020

Table 8 provides the methodology used to calculate proportional share fees based on the proposed zone change's trip generation impacts. These cost assumptions and the calculation methodology were established previously by the City of Sisters.

Table 8: Proportional Share Methodology Summary

N Locust Street at US Highway 20	
Variable Message Signs	$400,000
Alternate Route Wayfinding Signage	$10,000
US20/Locust Roundabout (assumed funded)	-
Barclay/Locust Roundabout	$1,250,000
Total Unfunded Projects (C)	$1,660,000
Peak Hour	Weekday PM
Total Through Trips at US20/Pine Intersection* (T)	1317
Trips To/From US20/Barclay Intersection	3
Trips To/From US20/Locust Intersection	16
Total Project Trips (PT)	19
Proportional Share (PS), (PT/T)	1.44%
Proportional Share Cost (P), (PS*C)	$23,948
Proportional Share Cost per Trip (P/PT)	$1,260

** Volumes from Figure 5*

Based on a "worst-case" trip generation scenario, the proportional share cost payment is calculated to be $1,260 per trip. With a net increase of 19 trips at the intersections of W Barclay Drive at US Highway 20 and N Locust Street at US Highway 20, this equates to a total proportional share fee of $23,948.

Transportation Planning Rule

The Transportation Planning Rule (TPR) is in place to ensure that the transportation system is capable of supporting possible increases in traffic intensity that could result from changes to adopted plans and land-use regulations. The applicable elements of the TPR are each quoted directly in italics below, with responses following

660-012-0060 Plan and Land Use Regulation Amendments

1. *If an amendment to a functional plan, an acknowledged comprehensive plan, or a land use regulation (including a zoning map) would significantly affect an existing or planned transportation facility, then the local government must put in place measures as provided in section (2) of this rule, unless the amendment is allowed under section (3), (9) or (10) of this rule. A plan or land use regulation amendment significantly affects a transportation facility if it would:*

(a) Change the functional classification of an existing or planned transportation facility (exclusive of correction of map errors in an adopted plan);

(b) Change standards implementing a functional classification system; or

(c) Result in any of the effects listed in paragraphs (A) through (C) of this subsection based on projected conditions measured at the end of the planning period identified in the adopted TSP. As part of evaluating projected conditions, the amount of traffic projected to be generated within the area of the amendment may be reduced if the amendment includes an enforceable, ongoing requirement that would demonstrably limit traffic generation, including, but not limited to, transportation demand management. This reduction may diminish or completely eliminate the significant effect of the amendment.

(A) Types or levels of travel or access that are inconsistent with the functional classification of an existing or planned transportation facility;

(B) Degrade the performance of an existing or planned transportation facility such that it would not meet the performance standards identified in the TSP or comprehensive plan; or

(C) Degrade the performance of an existing or planned transportation facility that is otherwise projected to not meet the performance standards identified in the TSP or comprehensive plan.

Based on the analysis findings in this report, subsections (a) and (b) are not triggered since the proposed zone change will not impact or alter the functional classification of any existing or planned facility, and the proposal does not include a change to any functional classification standards.

Upon rezoning properties within the subject site, two study intersections are currently or projected to operate with v/c ratios in excess of acceptable levels of operation per their respective jurisdictional standards. However, these intersections may be reasonably mitigated as detailed in the *Mitigation Analysis* section of this report.

The identified mitigation offsets the potential impacts from the project and avoids further degradation of key infrastructure in Sisters. Accordingly, the Transportation Planning Rule is satisfied.

Conclusions

The proposed Sisters Woodlands involves a change in zoning from Public Facility (PF), Urban Area Reserve (UAR), and Open Space (OS) to North Sisters Business Park (NSBP), Downtown Commercial (DC), Multi-Family Residential (MFR), and Open Space (OS) on a site located between US Highway 20, W Barclay Drive, and N Pine Street in Sisters, Oregon.

Eventually, a land division is expected to be proposed to subdivide the northern portion of the lot into a mixed-use housing development, which is expected to contain a mix of light industrial, commercial, recreational, cottage housing, and multi-family housing land uses. The proposed Sisters Woodlands will include the construction of approximately 40,000 square feet of industrial buildings, approximately 24,000 square feet of

commercial buildings, an approximately 20,000 square foot multi-use facility, and up to 346 units of multi-family housing (to include 2nd and 3rd-story flats above commercial buildings, duplex units, and cottage housing units).

The "worst-case scenario" trip generation calculations show that the proposed zoning is expected to generate a net increase of 113 trips during the evening peak hour when compared to the number of trips assigned to the existing land use. During the evening peak hour, the *Sisters Transportation System Plan* (TSP) has assigned 243 trips to the existing portion of the property included in the zone change.

All intersections were calculated has having a crash rate below 1.00 CMEV. No significant trends or crash patterns were identified at any of the study intersections that are indicative of safety concerns. Accordingly, no safety mitigation is recommended per the crash data analysis.

The most recent site plan shows that proposed site access locations are in compliance with the access spacing standards shown in Development Code 3.1.300(I)(1) and the *1999 Oregon Highway Plan*. Actual site access locations will be determined at the time of a future land division application, following the zone change.

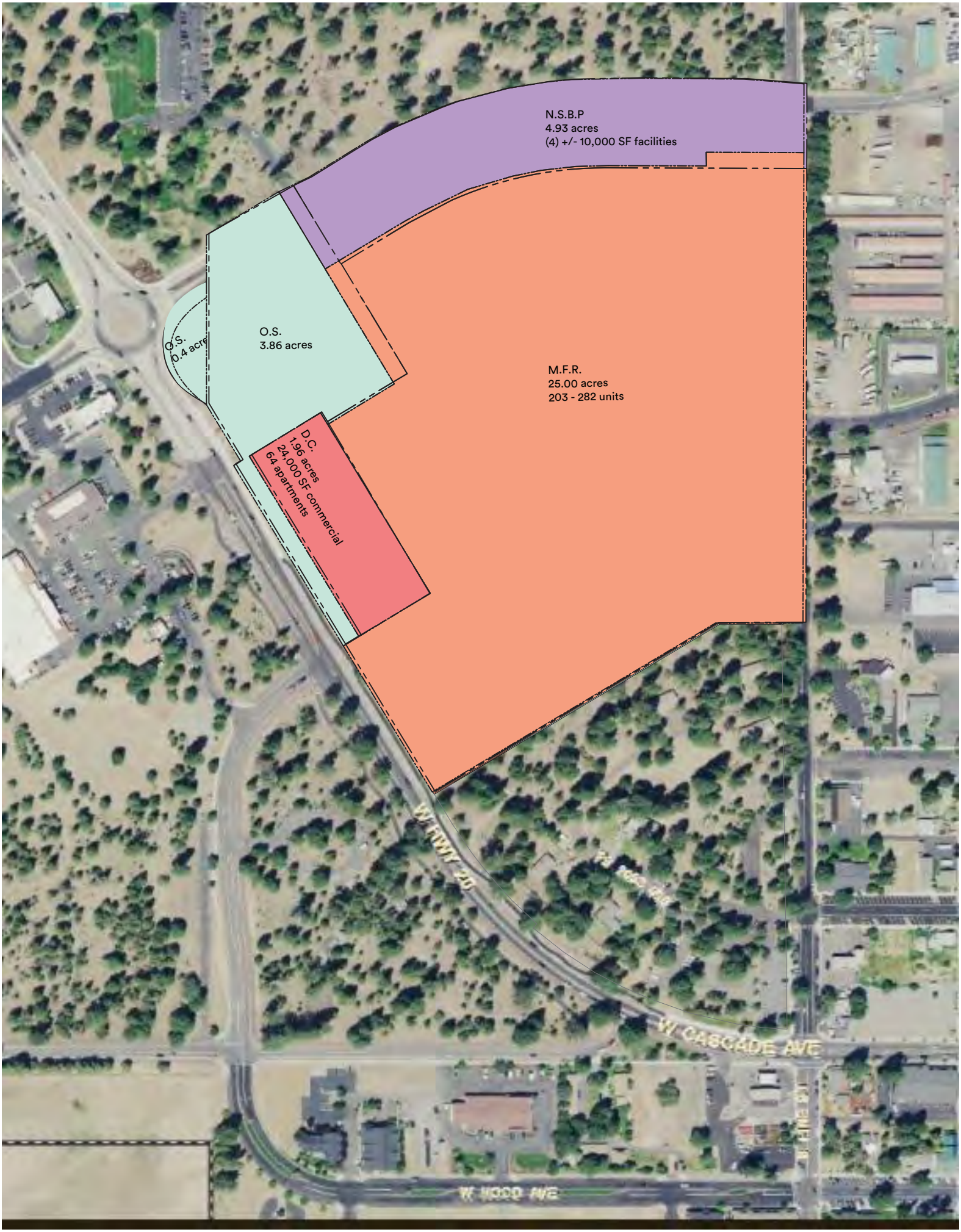
Due to insufficient traffic volumes, traffic signal warrants are not projected to be met at the unsignalized study intersections of W Barclay Drive at N Pine Street, W Hood Avenue at US Highway 20, and N Pine Street at US Highway 20 under any of the analysis scenarios. Left-turn lane warrants are projected to be met under the year 2040 planning horizon plus zone change scenario for the intersection of W Barclay Drive at N Pine Street, specifically for the westbound approach.

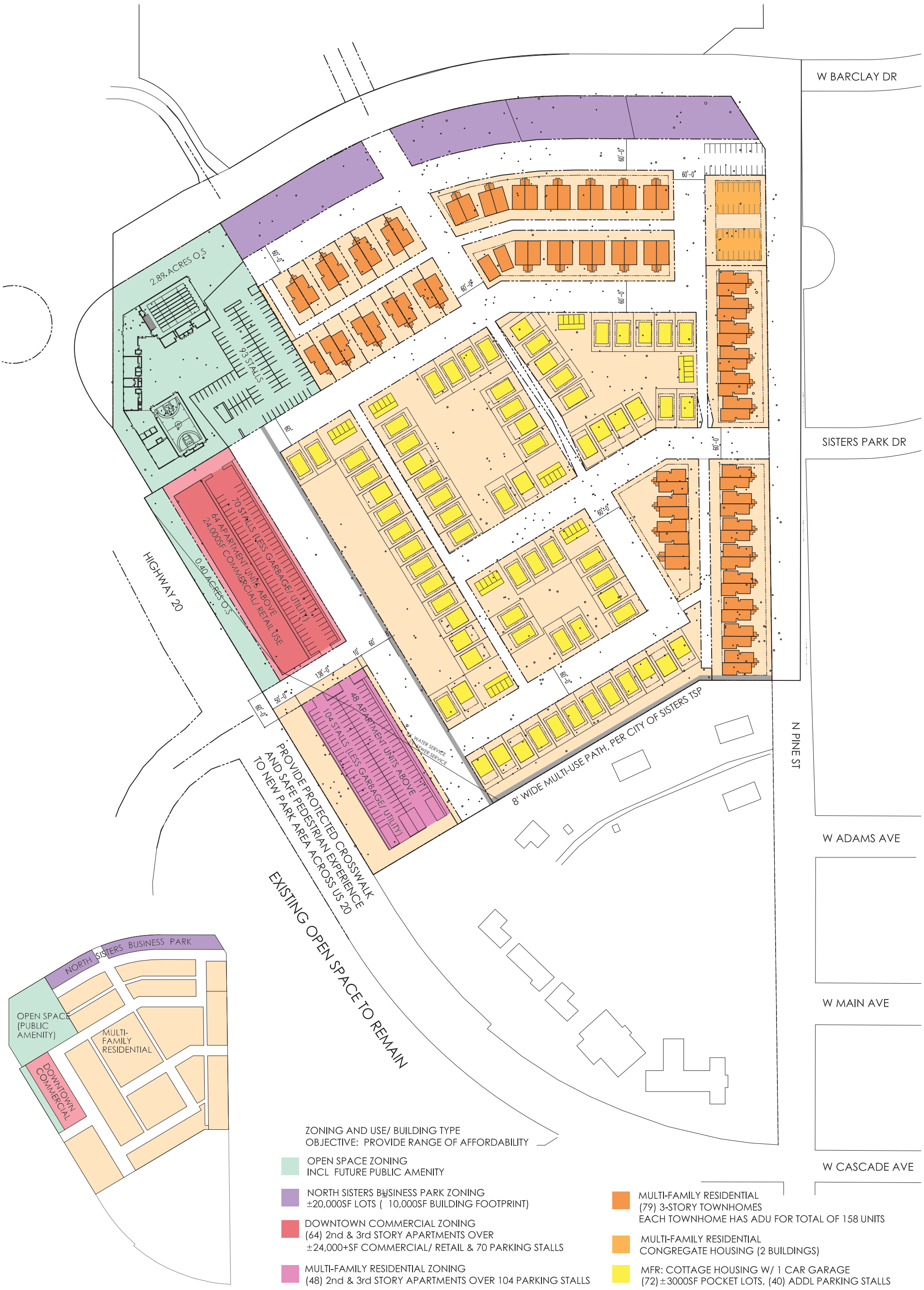
Two study intersections are either currently or projected to operate with v/c ratios in excess of the maximum allowable ODOT performance standards. These intersections are N Pine Street at US Highway 20 and N Locust Street at US Highway 20. Suggested mitigation may include the following:

- N Pine Street at US Highway 20: During peak hours when delays are long, drivers will self-select how they enter US Highway 20 to avoid excessive delays. Local traffic may choose a number of other routes to avoid US Highway 20 and utilize the local street system. For this reason, no mitigation is recommended.
- N Locust Street at US Highway 20: The applicant proposes mitigation in the form of a proportional share payment of $23,948 for improvements related to the proposed Alternate Route corridor.

The mitigation described above offsets the potential impacts from the project and avoids further degradation of key infrastructure in Sisters. Accordingly, the Transportation Planning Rule is satisfied.

Appendix


N.S.B.P
4.93 acres
(4) +/- 10,000 SF facilities
O.S.
3.86 acres
O.S.
0.4 acre
M.F.R.
25.00 acres
203 - 282 units
D.C.
1.96 acres
24,000 SF commercial
64 apartments
W HWY 20
W CASCADE AVE
W HOOD AVE



SISTER'S WOODLANDS SCHEMATIC 9

COMPLIANCE W/ FINAL ZONING MAP

05.14.20 SCALE: 1:2000

SISTERS VISION A LIVABLE CITY AND REGION THAT REMAIN WELCOMING EVEN AS THEY GROW

TRIP GENERATION CALCULATIONS
Proposed Zone Change Worst-Case Scenario
Proposed Development Plan

Land Use: General Light Industrial
Land Use Code: 110
Setting/Location General Urban/Suburban
Variable: 1,000 Square Feet of Gross Floor Area
Variable Quantity: 40

AM PEAK HOUR

Trip Rate: 0.70

	Enter	Exit	Total
Directional Distribution	88%	12%	
Trip Ends	**25**	**3**	**28**

PM PEAK HOUR

Trip Rate: 0.63

	Enter	Exit	Total
Directional Distribution	13%	87%	
Trip Ends	**3**	**22**	**25**

WEEKDAY

Trip Rate: 4.96

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**99**	**99**	**198**

SATURDAY

Trip Rate: 1.99

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**40**	**40**	**80**

Source: TRIP GENERATION, Tenth Edition

TRIP GENERATION CALCULATIONS
Proposed Zone Change Worst-Case Scenario

Land Use: Multifamily Housing (Low-Rise)
Land Use Code: 220
Setting/Location General Urban/Suburban
Variable: Dwelling Units
Variable Value: 346

AM PEAK HOUR

Trip Rate: 0.46

	Enter	Exit	Total
Directional Distribution	23%	77%	
Trip Ends	**37**	**122**	**159**

PM PEAK HOUR

Trip Rate: 0.56

	Enter	Exit	Total
Directional Distribution	63%	37%	
Trip Ends	**122**	**72**	**194**

WEEKDAY

Trip Rate: 7.32

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**1,266**	**1,266**	**2,532**

SATURDAY

Trip Rate: 8.14

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**1,408**	**1,408**	**2,816**

Source: TRIP GENERATION, Tenth Edition

TRIP GENERATION CALCULATIONS
Proposed Development Plan

Land Use: Multifamily Housing (Low-Rise)
Land Use Code: 220
Setting/Location General Urban/Suburban
Variable: Dwelling Units
Variable Value: 186

AM PEAK HOUR

Trip Rate: 0.46

	Enter	Exit	Total
Directional Distribution	23%	77%	
Trip Ends	**20**	**66**	**86**

PM PEAK HOUR

Trip Rate: 0.56

	Enter	Exit	Total
Directional Distribution	63%	37%	
Trip Ends	**66**	**38**	**104**

WEEKDAY

Trip Rate: 7.32

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**681**	**681**	**1,362**

SATURDAY

Trip Rate: 8.14

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**757**	**757**	**1,514**

Source: TRIP GENERATION, Tenth Edition

TRIP GENERATION CALCULATIONS
Proposed Development Plan

Land Use: Multifamily Housing (Mid-Rise)
Land Use Code: 221
Setting/Location General Urban/Suburban
Variable: Dwelling Units
Variable Value: 79

AM PEAK HOUR

Trip Rate: 0.36

	Enter	Exit	Total
Directional Distribution	26%	74%	
Trip Ends	**7**	**21**	**28**

PM PEAK HOUR

Trip Rate: 0.44

	Enter	Exit	Total
Directional Distribution	61%	39%	
Trip Ends	**21**	**14**	**35**

WEEKDAY

Trip Rate: 5.44

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**215**	**215**	**430**

SATURDAY

Trip Rate: 4.91

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**194**	**194**	**388**

Source: TRIP GENERATION, Tenth Edition

TRIP GENERATION CALCULATIONS
Proposed Zone Change Worst-Case Scenario
Proposed Development Plan

Land Use: Recreational Community Center
Land Use Code: 495
Variable: 1000 Square Feet Gross Floor Area
Variable Quantity: 20

AM PEAK HOUR

Trip Rate: 1.76

	Enter	Exit	Total
Directional Distribution	66%	34%	
Trip Ends	**23**	**12**	**35**

PM PEAK HOUR

Trip Rate: 2.31

	Enter	Exit	Total
Directional Distribution	47%	53%	
Trip Ends	**22**	**24**	**46**

WEEKDAY

Trip Rate: 28.82

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**288**	**288**	**576**

SATURDAY

Trip Rate: 9.10

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**91**	**91**	**182**

Source: TRIP GENERATION, Ninth Edition

TRIP GENERATION CALCULATIONS
Proposed Zone Change Worst-Case Scenario
Proposed Development Plan

Land Use: Shopping Center
Land Use Code: 820
Setting/Location General Urban/Suburban
Variable: 1,000 Sq. Ft. GFA
Variable Value: 24

AM PEAK HOUR

Trip Rate: 0.94

	Enter	Exit	Total
Directional Distribution	62%	38%	
Trip Ends	**14**	**9**	**23**

PM PEAK HOUR

Trip Rate: 3.81

	Enter	Exit	Total
Directional Distribution	48%	52%	
Trip Ends	**44**	**47**	**91**

WEEKDAY

Trip Rate: 37.75

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**453**	**453**	**906**

SATURDAY

Trip Rate: 46.12

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**553**	**553**	**1,106**

Source: Trip Generation Manual, Tenth Edition

Key Data Network
5477 SW Joshua St

Tualatin, Oregon, United States 97062
503.804.3294 conley@k-d-n.com
Key People serving Key Clients

Location: 44.295756, -121.559593

Count Name: Hwy 20 at W Barclay Rd
Site Code:
Start Date: 10/15/2019
Page No: 1

Turning Movement Data

Start Time	Hwy 20 Northbound						Hwy 20 Southbound						W McKinney Butte Rd Eastbound					W Barclay Rd Westbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:00 PM	20	59	4	0	0	83	21	85	3	0	0	109	28	12	26	0	66	15	19	17	0	0	51	309
4:15 PM	25	69	1	0	0	95	18	95	9	0	0	122	20	14	29	0	63	3	26	12	0	0	41	321
4:30 PM	31	56	3	0	0	90	14	66	6	1	0	87	21	19	31	0	71	16	30	14	0	0	60	308
4:45 PM	22	63	2	0	1	87	15	90	6	0	0	111	19	25	27	0	71	8	25	12	0	0	45	314
Hourly Total	98	247	10	0	1	355	68	336	24	1	0	429	88	70	113	0	271	42	100	55	0	0	197	1252
5:00 PM	22	43	3	0	0	68	20	102	5	0	0	127	27	21	26	0	74	4	27	13	0	0	44	313
5:15 PM	15	49	3	0	0	67	18	108	5	0	1	131	24	11	31	0	66	7	28	12	0	0	47	311
5:30 PM	21	48	5	0	0	74	13	39	1	0	1	53	18	13	29	0	60	3	28	6	0	0	37	224
5:45 PM	32	37	2	0	0	71	17	74	8	0	0	99	24	13	23	0	60	6	27	9	0	0	42	272
Hourly Total	90	177	13	0	0	280	68	323	19	0	2	410	93	58	109	0	260	20	110	40	0	0	170	1120
Grand Total	188	424	23	0	1	635	136	659	43	1	2	839	181	128	222	0	531	62	210	95	0	0	367	2372
Approach %	29.6	66.8	3.6	0.0	-	-	16.2	78.5	5.1	0.1	-	-	34.1	24.1	41.8	0.0	-	16.9	57.2	25.9	0.0	-	-	-
Total %	7.9	17.9	1.0	0.0	-	26.8	5.7	27.8	1.8	0.0	-	35.4	7.6	5.4	9.4	0.0	22.4	2.6	8.9	4.0	0.0	-	15.5	-
Lights	185	391	23	0	-	599	135	601	42	0	-	778	178	126	218	0	522	61	209	92	0	-	362	2261
% Lights	98.4	92.2	100.0	-	-	94.3	99.3	91.2	97.7	0.0	-	92.7	98.3	98.4	98.2	-	98.3	98.4	99.5	96.8	-	-	98.6	95.3
Other Vehicles	3	33	0	0	-	36	1	58	1	1	-	61	3	2	4	0	9	1	1	3	0	-	5	111
% Other Vehicles	1.6	7.8	0.0	-	-	5.7	0.7	8.8	2.3	100.0	-	7.3	1.7	1.6	1.8	-	1.7	1.6	0.5	3.2	-	-	1.4	4.7
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
All Pedestrians	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	0	-	-
% All Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-

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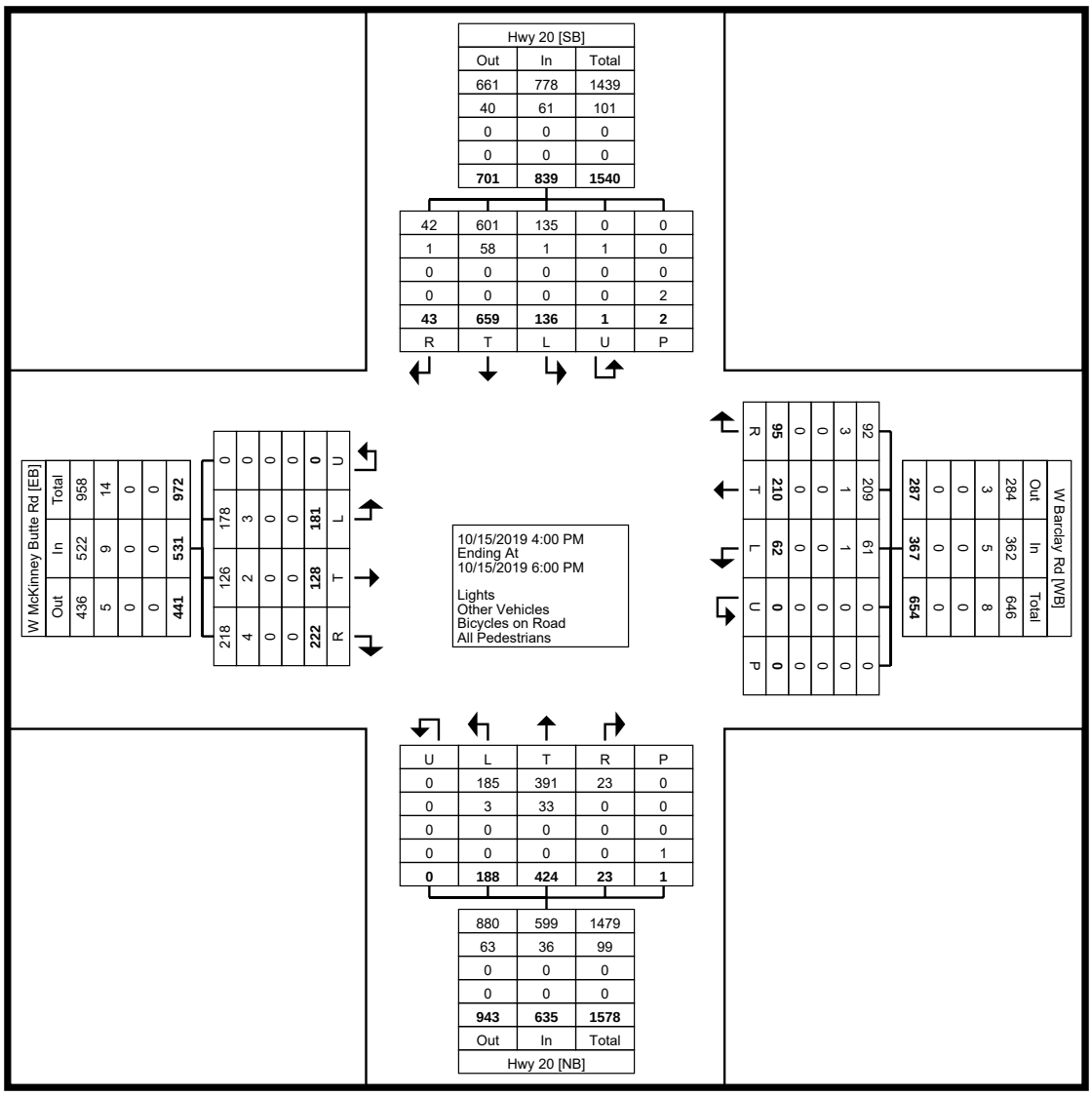
Start Date: 10/15/2019
Page No: 2



Turning Movement Data Plot

Key Data Network
5477 SW Joshua St

Tualatin, Oregon, United States 97062
503.804.3294 conley@k-d-n.com
Key People serving Key Clients

Location: 44.295756, -121.559593

Count Name: Hwy 20 at W Barclay Rd
Site Code:
Start Date: 10/15/2019

Approach Data

Start Time	Nb Street Northbound						Sb Street Southbound						Eb Street Eastbound				Wb Street Westbound					
	Peds CCW	Peds CW	Circulating	Out	In	Next	Peds CCW	Peds CW	Circulating	Out	In	Next	Circulating	Out	In	Next	Peds CCW	Peds CW	Circulating	Out	In	Next
4:00 PM	0	0	62	126	82	4	0	0	53	106	108	3	119	42	66	26	0	0	106	39	50	17
4:15 PM	0	0	53	126	97	1	0	0	53	100	123	9	117	59	64	29	0	0	116	32	41	12
4:30 PM	0	0	54	114	89	3	0	0	78	94	87	6	98	66	71	31	0	0	108	37	60	14
4:45 PM	0	1	60	125	88	2	0	0	57	93	112	6	114	53	72	27	0	0	106	42	46	12
Hourly Total	0	1	229	491	356	10	0	0	241	393	430	24	448	220	273	113	0	0	436	150	197	55
5:00 PM	0	0	67	132	68	3	0	0	54	83	128	5	127	53	73	26	0	0	92	44	45	13
5:15 PM	0	0	51	145	68	3	1	0	48	84	131	5	134	47	66	31	0	0	90	31	46	12
5:30 PM	0	0	46	70	74	5	0	1	52	73	53	1	55	50	62	29	0	0	86	30	36	6
5:45 PM	0	0	54	104	71	2	0	0	66	71	99	8	97	67	60	23	0	0	93	32	43	9
Hourly Total	0	0	218	451	281	13	1	1	220	311	411	19	413	217	261	109	0	0	361	137	170	40
Grand Total	0	1	447	942	637	23	1	1	461	704	841	43	861	437	534	222	0	0	797	287	367	95
Approach %	-	-	21.8	46.0	31.1	1.1	-	-	22.5	34.4	41.0	2.1	41.9	21.3	26.0	10.8	-	-	51.6	18.6	23.7	6.1
Total %	-	-	5.8	12.2	8.3	0.3	-	-	6.0	9.1	10.9	0.6	11.2	5.7	6.9	2.9	-	-	10.4	3.7	4.8	1.2
Lights	-	-	439	876	600	23	-	-	457	662	781	42	801	432	524	218	-	-	756	283	363	92
% Lights	-	-	98.2	93.0	94.2	100.0	-	-	99.1	94.0	92.9	97.7	93.0	98.9	98.1	98.2	-	-	94.9	98.6	98.9	96.8
Other Vehicles	-	-	8	66	37	0	-	-	4	41	60	1	60	5	10	4	-	-	41	4	4	3
% Other Vehicles	-	-	1.8	7.0	5.8	0.0	-	-	0.9	5.8	7.1	2.3	7.0	1.1	1.9	1.8	-	-	5.1	1.4	1.1	3.2
Bicycles on Road	-	-	0	0	0	0	-	-	0	1	0	0	0	0	0	0	-	-	0	0	0	0
% Bicycles on Road	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0
Bicycles on Crosswalk	0	1	-	-	-	-	1	0	-	-	-	-	-	-	-	-	0	0	-	-	-	-
% Bicycles on Crosswalk	-	100.0	-	-	-	-	100.0	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	0	0	-	-	-	-	0	1	-	-	-	-	-	-	-	-	0	0	-	-	-	-
% Pedestrians	-	0.0	-	-	-	-	0.0	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Key Data Network
5477 SW Joshua St

Tualatin, Oregon, United States 97062
503.804.3294 conley@k-d-n.com
Key People serving Key Clients

Location: 44.295756, -121.559593

Count Name: Hwy 20 at W Barclay Rd
Site Code:
Start Date: 10/15/2019

Turning Movement Peak Hour Data (4:15 PM)

Start Time	Hwy 20 Northbound						Hwy 20 Southbound						W McKinney Butte Rd Eastbound					W Barclay Rd Westbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:15 PM	25	69	1	0	0	95	18	95	9	0	0	122	20	14	29	0	63	3	26	12	0	0	41	321
4:30 PM	31	56	3	0	0	90	14	66	6	1	0	87	21	19	31	0	71	16	30	14	0	0	60	308
4:45 PM	22	63	2	0	1	87	15	90	6	0	0	111	19	25	27	0	71	8	25	12	0	0	45	314
5:00 PM	22	43	3	0	0	68	20	102	5	0	0	127	27	21	26	0	74	4	27	13	0	0	44	313
Total	100	231	9	0	1	340	67	353	26	1	0	447	87	79	113	0	279	31	108	51	0	0	190	1256
Approach %	29.4	67.9	2.6	0.0	-	-	15.0	79.0	5.8	0.2	-	-	31.2	28.3	40.5	0.0	-	16.3	56.8	26.8	0.0	-	-	-
Total %	8.0	18.4	0.7	0.0	-	27.1	5.3	28.1	2.1	0.1	-	35.6	6.9	6.3	9.0	0.0	22.2	2.5	8.6	4.1	0.0	-	15.1	-
PHF	0.806	0.837	0.750	0.000	-	0.895	0.838	0.865	0.722	0.250	-	0.880	0.806	0.790	0.911	0.000	0.943	0.484	0.900	0.911	0.000	-	0.792	0.978
Lights	98	211	9	0	-	318	66	323	25	0	-	414	84	78	111	0	273	31	108	48	0	-	187	1192
% Lights	98.0	91.3	100.0	-	-	93.5	98.5	91.5	96.2	0.0	-	92.6	96.6	98.7	98.2	-	97.8	100.0	100.0	94.1	-	-	98.4	94.9
Other Vehicles	2	20	0	0	-	22	1	30	1	1	-	33	3	1	2	0	6	0	0	3	0	-	3	64
% Other Vehicles	2.0	8.7	0.0	-	-	6.5	1.5	8.5	3.8	100.0	-	7.4	3.4	1.3	1.8	-	2.2	0.0	0.0	5.9	-	-	1.6	5.1
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
All Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	0	-	-
% All Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Key Data Network
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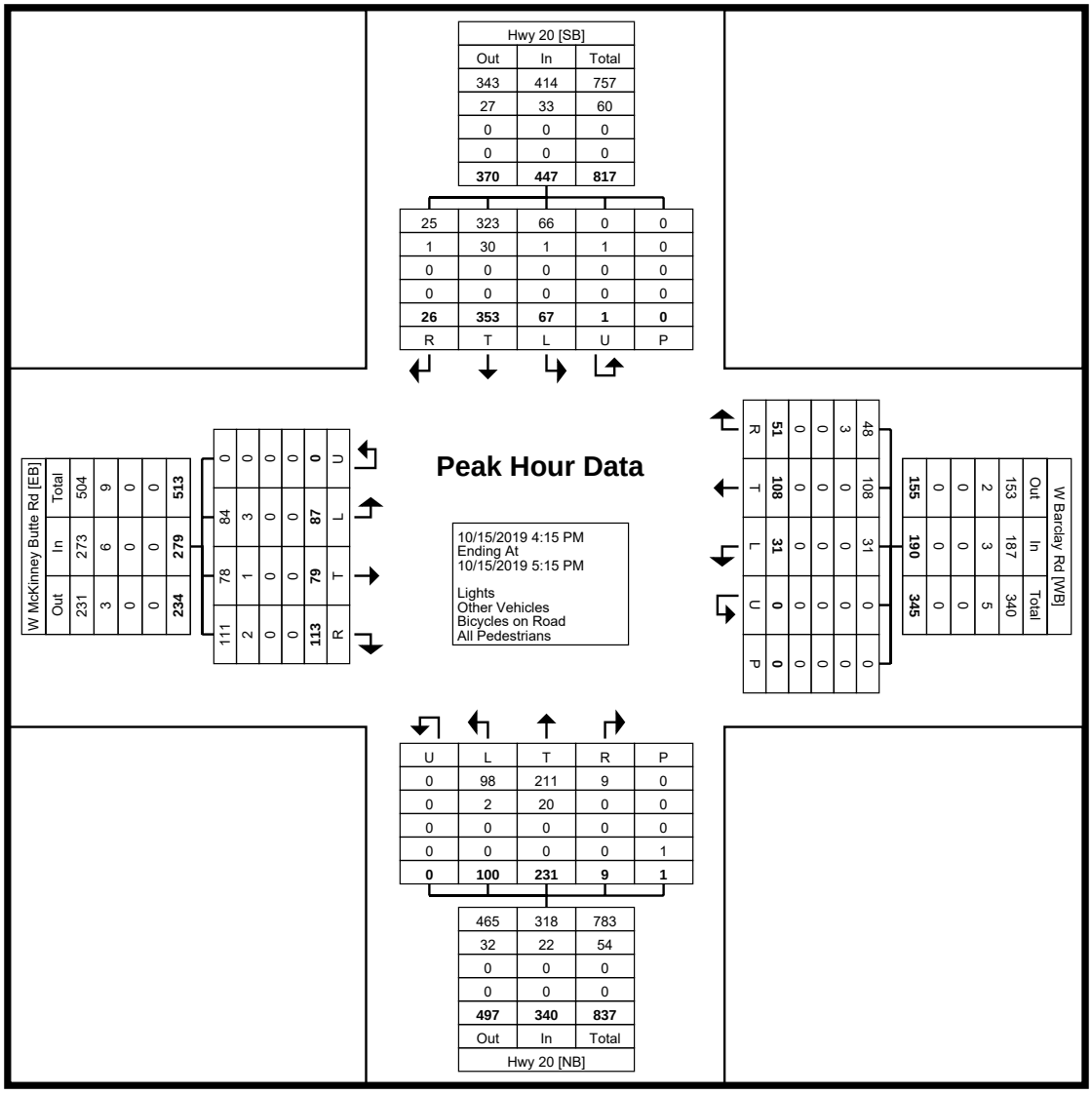
Key People serving Key Clients

Location: 44.295756, -121.559593

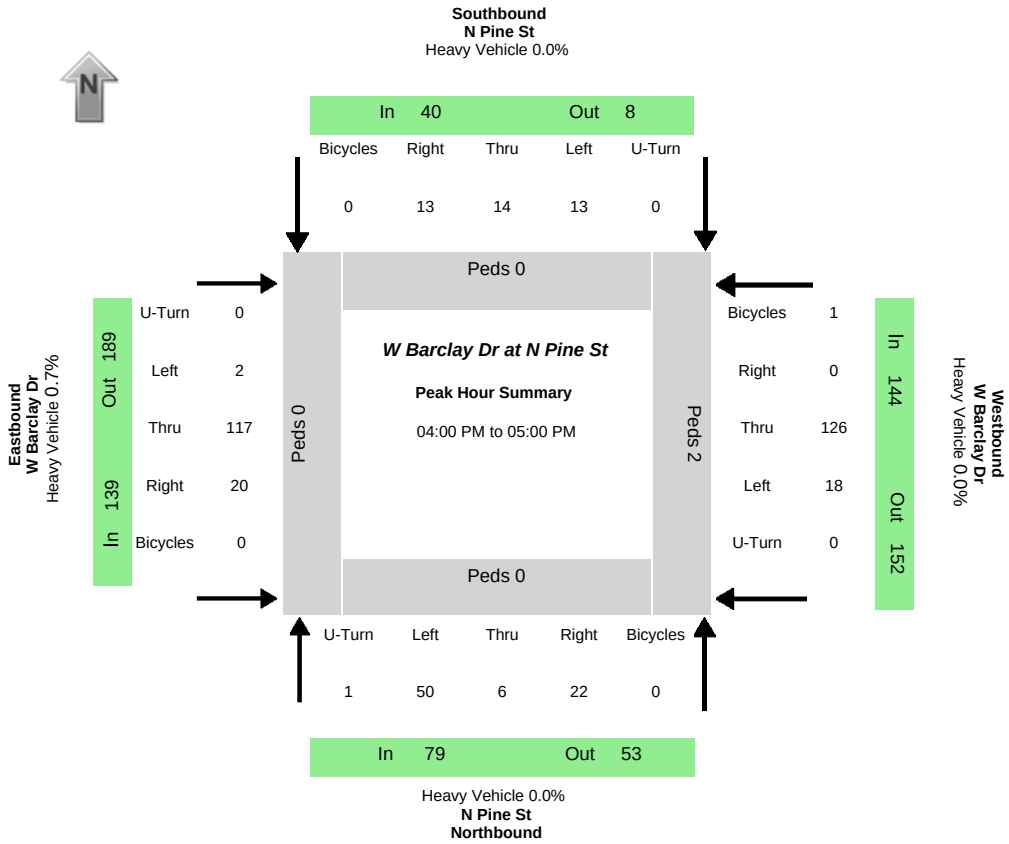
Count Name: Hwy 20 at W Barclay Rd
Site Code:
Start Date: 10/15/2019



Turning Movement Peak Hour Data Plot (4:15 PM)

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*N Pine St*
E/W street	*W Barclay Dr*
City, State	Sisters OR
Site Notes	
Location	44.29704 - -121.55394
Start Date	Tuesday, October 15, 2019
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:00:00 PM
Peak 15 Min Start	04:30:00 PM
PHF (15-Min Int)	0.84



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
50	6	22	1	13	14	13	0	2	117	20	0	18	126	0	0	79	40	139	144	53	8	189	152

Percent Heavy Vehicles

0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	0.0%	0.0%	0.0%	0.7%

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	1	0	0	1

PHV - Pedestrians

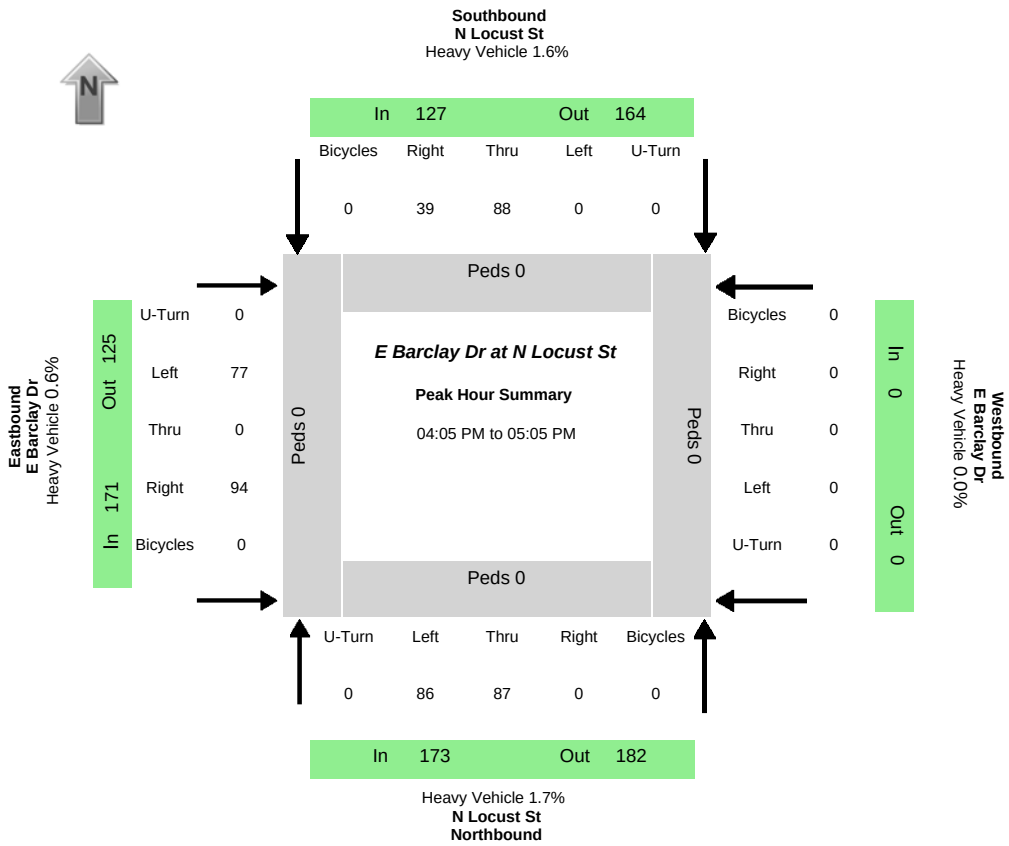
in Crosswalk				
NB	SB	EB	WB	**Sum**
0	0	0	2	2

All Vehicle Volumes

	Northbound N Pine St				Southbound N Pine St				Eastbound W Barclay Dr				Westbound W Barclay Dr				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	6	1	2	1	0	2	3	0	0	5	2	0	3	10	0	0		
04:05:00 PM	3	2	1	0	0	0	1	0	0	11	1	0	3	11	0	0		
04:10:00 PM	4	0	3	0	0	0	0	0	0	13	2	0	0	11	0	0	101	
04:15:00 PM	1	0	1	0	0	2	0	0	0	10	6	0	1	8	0	0	95	
04:20:00 PM	3	0	1	0	1	1	1	0	0	9	1	0	2	15	0	0	96	
04:25:00 PM	2	0	2	0	0	2	0	0	1	5	2	0	1	9	0	0	87	
04:30:00 PM	7	1	2	0	4	2	2	0	0	6	1	0	3	8	0	0	94	
04:35:00 PM	6	0	1	0	3	2	2	0	0	16	1	0	2	11	0	0	104	
04:40:00 PM	5	0	2	0	4	1	2	0	1	6	1	0	0	17	0	0	119	
04:45:00 PM	5	0	2	0	0	1	1	0	0	10	1	0	1	10	0	0	114	
04:50:00 PM	4	1	2	0	0	0	1	0	0	13	1	0	2	9	0	0	103	
04:55:00 PM	4	1	3	0	1	1	0	0	0	13	1	0	0	7	0	0	95	402
05:00:00 PM	3	0	2	0	1	0	2	0	0	11	1	0	1	6	0	0	91	394
05:05:00 PM	2	0	3	0	1	1	0	0	0	12	2	0	1	13	0	0	93	396
05:10:00 PM	5	1	1	0	0	1	0	0	0	14	1	0	1	12	1	0	99	400
05:15:00 PM	7	0	2	0	0	0	2	0	0	10	0	0	0	8	0	0	101	400
05:20:00 PM	3	0	0	0	0	0	0	0	1	8	0	0	0	17	1	0	96	396
05:25:00 PM	2	0	0	0	0	1	0	0	0	5	2	0	0	5	0	0	74	387
05:30:00 PM	2	1	5	0	0	0	0	0	1	7	0	0	0	7	0	0	68	374
05:35:00 PM	1	1	1	0	1	1	0	0	0	11	0	0	0	14	0	0	68	360
05:40:00 PM	6	1	0	0	0	1	0	0	0	8	2	0	0	8	0	0	79	347
05:45:00 PM	3	0	0	0	0	0	0	0	1	8	1	0	2	6	0	0	77	337
05:50:00 PM	0	0	2	0	0	0	2	0	0	10	0	0	0	16	0	0	77	334
05:55:00 PM	1	2	0	0	0	0	3	0	0	7	2	0	0	10	0	0	76	328

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*N Locust St*
E/W street	*E Barclay Dr*
City, State	Sisters OR
Site Notes	
Location	44.297603 - -121.543743
Start Date	Tuesday, October 15, 2019
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:05:00 PM
Peak 15 Min Start	04:35:00 PM
PHF (15-Min Int)	0.93



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
86	87	0	0	0	88	39	0	77	0	94	0	0	0	0	0	173	127	171	0	182	164	125	0
Percent Heavy Vehicles																							
3.5%	0.0%	0.0%	0.0%	0.0%	2.3%	0.0%	0.0%	0.0%	0.0%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	1.7%	1.6%	0.6%	0.0%	1.6%	0.0%	2.4%	0.0%

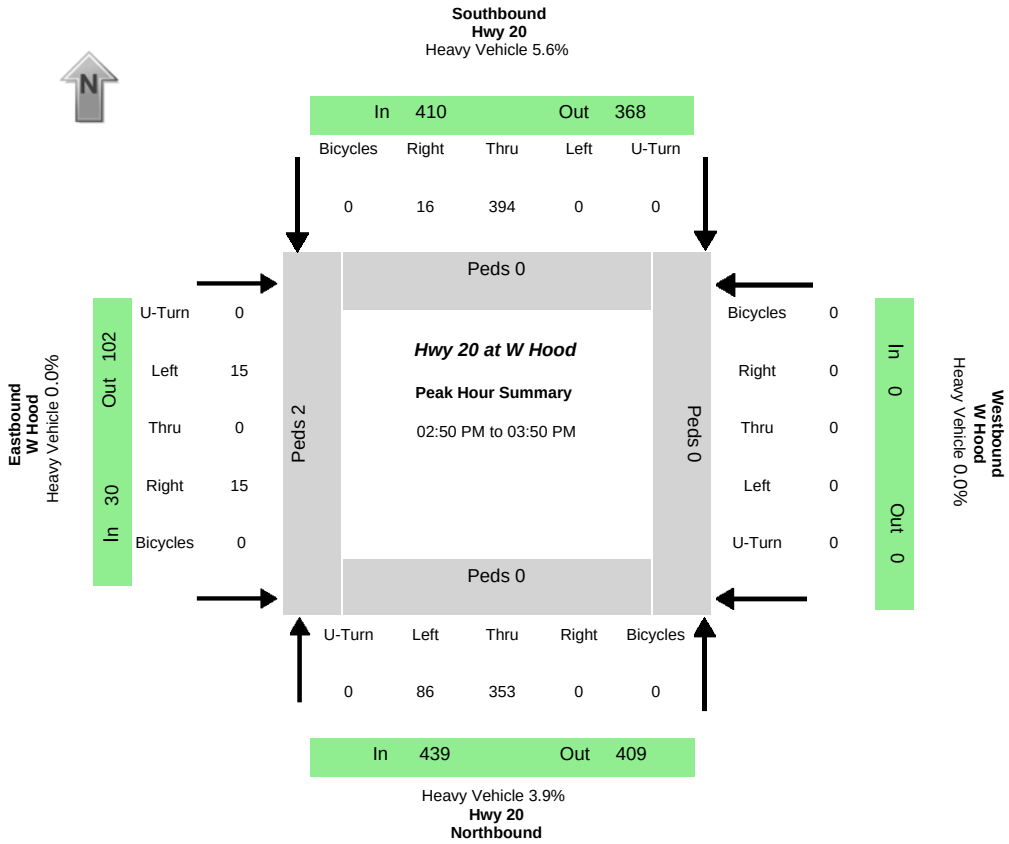
PHV- Bicycles																	PHV - Pedestrians				
Northbound				Southbound				Eastbound				Westbound					in Crosswalk				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

All Vehicle Volumes

	Northbound N Locust St				Southbound N Locust St				Eastbound E Barclay Dr				Westbound E Barclay Dr				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	8	13	0	0	0	4	3	0	3	0	5	0	0	0	0	0		
04:05:00 PM	12	6	0	0	0	8	3	0	5	0	8	0	0	0	0	0		
04:10:00 PM	7	9	0	0	0	7	1	0	7	0	9	0	0	0	0	0	118	
04:15:00 PM	8	7	0	0	0	9	3	0	5	0	7	0	0	0	0	0	121	
04:20:00 PM	8	5	0	0	0	9	5	0	8	0	4	0	0	0	0	0	118	
04:25:00 PM	9	6	0	0	0	3	4	0	3	0	8	0	0	0	0	0	111	
04:30:00 PM	7	9	0	0	0	6	3	0	3	0	6	0	0	0	0	0	106	
04:35:00 PM	4	8	0	0	0	7	3	0	11	0	12	0	0	0	0	0	112	
04:40:00 PM	7	5	0	0	0	8	7	0	7	0	9	0	0	0	0	0	122	
04:45:00 PM	5	9	0	0	0	7	3	0	7	0	8	0	0	0	0	0	127	
04:50:00 PM	10	8	0	0	0	8	1	0	8	0	9	0	0	0	0	0	126	
04:55:00 PM	0	8	0	0	0	6	5	0	7	0	6	0	0	0	0	0	115	466
05:00:00 PM	9	7	0	0	0	10	1	0	6	0	8	0	0	0	0	0	117	471
05:05:00 PM	9	9	0	0	0	3	1	0	5	0	6	0	0	0	0	0	106	462
05:10:00 PM	9	4	0	0	0	5	2	0	7	0	8	0	0	0	0	0	109	457
05:15:00 PM	5	10	0	0	0	8	5	0	4	0	10	0	0	0	0	0	110	460
05:20:00 PM	5	6	0	0	0	6	6	0	6	0	8	0	0	0	0	0	114	458
05:25:00 PM	6	17	0	0	0	3	2	0	3	0	0	0	0	0	0	0	110	456
05:30:00 PM	7	7	0	0	0	7	2	0	11	0	7	0	0	0	0	0	109	463
05:35:00 PM	5	11	0	0	0	7	4	0	6	0	5	0	0	0	0	0	110	456
05:40:00 PM	5	8	0	0	0	4	5	0	3	0	5	0	0	0	0	0	109	443
05:45:00 PM	7	11	0	0	0	7	3	0	2	0	2	0	0	0	0	0	100	436
05:50:00 PM	9	5	0	0	0	8	0	0	5	0	7	0	0	0	0	0	96	426
05:55:00 PM	7	3	0	0	0	6	1	0	9	0	2	0	0	0	0	0	94	422

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*Hwy 20*
E/W street	*W Hood*
City, State	Sisters OR
Site Notes	
Location	44.293625 - -121.557933
Start Date	Wednesday, December 12, 2018
Start Time	02:00:00 PM
Weather	
Study ID #	
Peak Hour Start	02:50:00 PM
Peak 15 Min Start	03:05:00 PM
PHF (15-Min Int)	0.89



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
86	353	0	0	0	394	16	0	15	0	15	0	0	0	0	0	439	410	30	0	409	368	102	0

Percent Heavy Vehicles

1.2%	4.5%	0.0%	0.0%	0.0%	4.8%	25.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.9%	5.6%	0.0%	0.0%	4.6%	4.3%	4.9%	0.0%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**
0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0

PHV - Pedestrians

in Crosswalk				
NB	SB	EB	WB	**Sum**
0	0	2	0	2

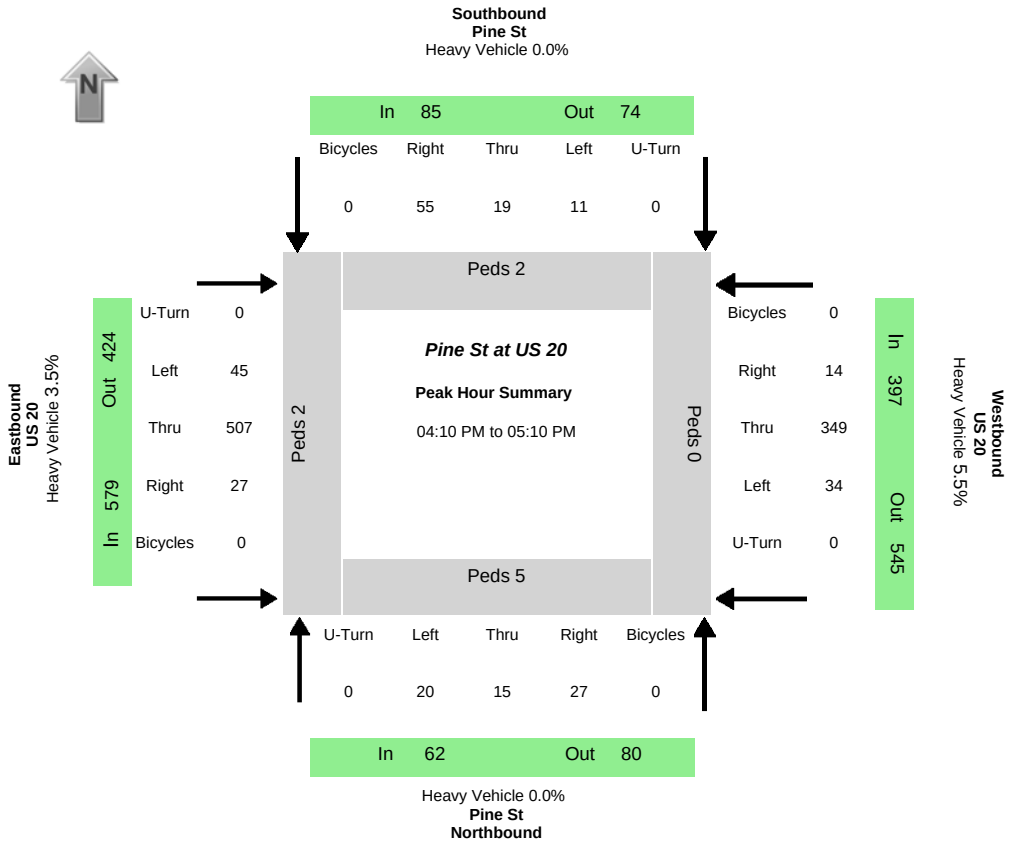
All Vehicle Volumes

	Northbound Hwy 20				Southbound Hwy 20				Eastbound W Hood				Westbound W Hood				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
02:00:00 PM	1	25	0	0	0	29	0	0	3	0	1	0	0	0	0	0		
02:05:00 PM	4	17	0	0	0	26	1	0	1	0	2	0	0	0	0	0		
02:10:00 PM	6	26	0	0	0	24	3	0	4	0	1	0	0	0	0	0	174	
02:15:00 PM	7	22	0	0	0	20	0	0	1	0	4	0	0	0	0	0	169	
02:20:00 PM	2	27	0	0	0	42	0	0	1	0	2	0	0	0	0	0	192	
02:25:00 PM	3	30	0	0	0	10	0	0	0	0	2	0	0	0	0	0	173	
02:30:00 PM	2	28	0	0	0	26	2	0	1	0	2	0	0	0	0	0	180	
02:35:00 PM	2	35	0	0	0	37	1	0	2	0	1	0	0	0	0	0	184	
02:40:00 PM	4	27	0	0	0	31	1	0	1	0	3	0	0	0	0	0	206	
02:45:00 PM	6	20	0	0	0	30	0	0	0	0	2	0	0	0	0	0	203	
02:50:00 PM	12	34	0	0	0	27	2	0	2	0	2	0	0	0	0	0	204	
02:55:00 PM	15	40	0	0	0	23	6	0	0	0	4	0	0	0	0	0	225	778
03:00:00 PM	5	22	0	0	0	24	1	0	0	0	1	0	0	0	0	0	220	772
03:05:00 PM	6	29	0	0	0	39	0	0	2	0	1	0	0	0	0	0	218	798
03:10:00 PM	9	36	0	0	0	48	1	0	5	0	0	0	0	0	0	0	229	833
03:15:00 PM	7	27	0	0	0	33	0	0	0	0	3	0	0	0	0	0	246	849
03:20:00 PM	5	25	0	0	0	36	1	0	2	0	0	0	0	0	0	0	238	844
03:25:00 PM	5	32	0	0	0	32	0	0	0	0	1	0	0	0	0	0	209	869
03:30:00 PM	6	26	0	0	0	22	2	0	1	0	0	0	0	0	0	0	196	865
03:35:00 PM	4	31	0	0	0	38	1	0	1	0	2	0	0	0	0	0	204	864
03:40:00 PM	10	28	0	0	0	36	1	0	1	0	1	0	0	0	0	0	211	874
03:45:00 PM	2	23	0	0	0	36	1	0	1	0	0	0	0	0	0	0	217	879
03:50:00 PM	3	15	0	0	0	33	0	0	4	0	4	0	0	0	0	0	199	859
03:55:00 PM	1	28	0	0	0	32	0	0	0	0	2	0	0	0	0	0	185	834

04:00:00 PM	6	31	0	0	0	28	1	0	1	0	3	0	0	0	0	0	192	851
04:05:00 PM	4	35	0	0	0	42	2	0	2	0	0	0	0	0	0	0	218	859
04:10:00 PM	4	20	0	0	0	31	2	0	1	0	3	0	0	0	0	0	216	821
04:15:00 PM	3	24	0	0	0	23	2	0	3	0	2	0	0	0	0	0	203	808
04:20:00 PM	6	23	0	0	0	30	0	0	1	0	2	0	0	0	0	0	180	801
04:25:00 PM	2	19	0	0	0	33	1	0	0	0	1	0	0	0	0	0	175	787
04:30:00 PM	7	24	0	0	0	28	2	0	3	0	3	0	0	0	0	0	185	797
04:35:00 PM	1	18	0	0	0	31	2	0	0	0	4	0	0	0	0	0	179	776
04:40:00 PM	5	17	0	0	0	39	0	0	0	0	0	0	0	0	0	0	184	760
04:45:00 PM	3	15	0	0	0	25	4	0	1	0	2	0	0	0	0	0	167	747
04:50:00 PM	4	20	0	0	0	30	0	0	0	0	2	0	0	0	0	0	167	744
04:55:00 PM	2	23	0	0	0	40	0	0	0	0	0	0	0	0	0	0	171	746
05:00:00 PM	7	27	0	0	0	33	0	0	4	0	1	0	0	0	0	0	193	748
05:05:00 PM	2	15	0	0	0	20	1	0	0	0	0	0	0	0	0	0	175	701
05:10:00 PM	1	25	0	0	0	21	3	0	1	0	0	0	0	0	0	0	161	691
05:15:00 PM	1	26	0	0	0	36	2	0	2	0	2	0	0	0	0	0	158	703
05:20:00 PM	6	11	0	0	0	31	1	0	0	0	1	0	0	0	0	0	170	691
05:25:00 PM	3	14	0	0	0	14	0	0	0	0	2	0	0	0	0	0	152	668
05:30:00 PM	4	14	0	0	0	27	1	0	1	0	0	0	0	0	0	0	130	648
05:35:00 PM	5	24	0	0	0	25	2	0	0	0	3	0	0	0	0	0	139	651
05:40:00 PM	2	26	0	0	0	22	0	0	0	0	0	0	0	0	0	0	156	640
05:45:00 PM	3	17	0	0	0	17	0	0	1	0	4	0	0	0	0	0	151	632
05:50:00 PM	4	12	0	0	0	25	0	0	1	0	4	0	0	0	0	0	138	622
05:55:00 PM	5	19	0	0	0	24	0	0	0	0	1	0	0	0	0	0	137	606

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*Pine St*
E/W street	*US 20*
City, State	Sisters OR
Site Notes	
Location	44.291346 - -121.553807
Start Date	Tuesday, October 15, 2019
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:10:00 PM
Peak 15 Min Start	04:20:00 PM
PHF (15-Min Int)	0.91



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
20	15	27	0	11	19	55	0	45	507	27	0	34	349	14	0	62	85	579	397	80	74	424	545
Percent Heavy Vehicles																							
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.9%	0.0%	0.0%	0.0%	6.3%	0.0%	0.0%	0.0%	0.0%	3.5%	5.5%	0.0%	0.0%	5.2%	3.7%

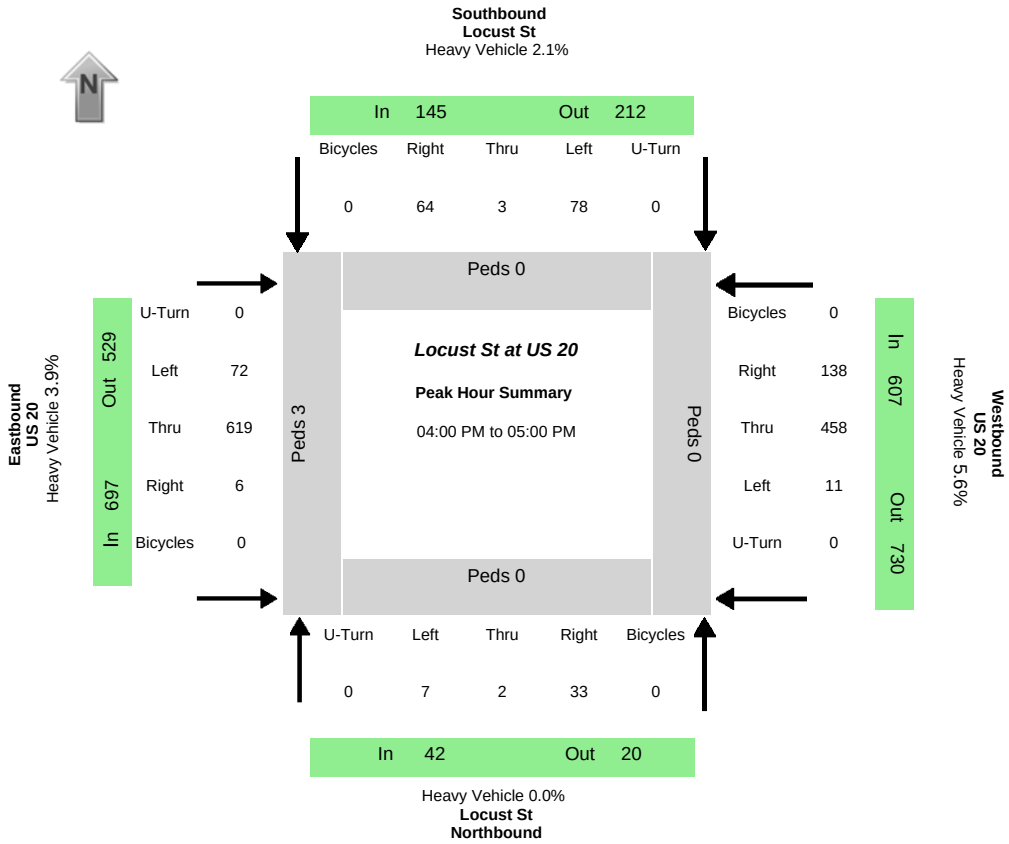
PHV- Bicycles																	PHV - Pedestrians				
Northbound				Southbound				Eastbound				Westbound					in Crosswalk				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2	2	0	9

All Vehicle Volumes

	Northbound Pine St				Southbound Pine St				Eastbound US 20				Westbound US 20				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	0	3	2	0	3	1	8	0	5	43	2	0	2	23	2	0		
04:05:00 PM	3	2	5	0	2	2	8	0	3	43	2	0	4	22	3	0		
04:10:00 PM	3	1	8	0	1	4	5	0	3	34	3	0	6	31	1	0	293	
04:15:00 PM	3	2	2	0	2	0	5	0	5	23	2	0	4	21	4	0	272	
04:20:00 PM	2	2	0	0	0	1	5	0	4	42	2	0	3	37	0	0	271	
04:25:00 PM	2	0	4	0	0	3	3	0	4	48	4	0	2	34	2	0	277	
04:30:00 PM	0	1	1	0	1	2	6	0	6	54	4	0	0	28	1	0	308	
04:35:00 PM	0	3	4	0	2	2	3	0	0	28	1	0	3	29	1	0	286	
04:40:00 PM	2	2	1	0	1	1	6	0	3	41	1	0	3	30	1	0	272	
04:45:00 PM	1	1	1	0	1	4	1	0	5	66	1	0	1	26	0	0	276	
04:50:00 PM	0	0	2	0	0	2	4	0	4	33	4	0	3	35	0	0	287	
04:55:00 PM	4	0	2	0	1	0	6	0	3	34	2	0	3	26	2	0	278	1120
05:00:00 PM	2	3	0	0	1	0	6	0	5	29	1	0	2	27	1	0	247	1103
05:05:00 PM	1	0	2	0	1	0	5	0	3	75	2	0	4	25	1	0	279	1123
05:10:00 PM	2	2	2	0	0	2	4	0	4	37	5	0	7	14	0	0	275	1102
05:15:00 PM	1	1	0	0	2	0	2	0	0	28	2	0	4	14	1	0	253	1084
05:20:00 PM	1	0	4	0	1	0	2	0	2	21	2	0	6	27	1	0	201	1053
05:25:00 PM	3	0	1	0	0	0	3	0	6	76	3	0	3	15	1	0	233	1058
05:30:00 PM	0	2	2	0	1	0	6	0	5	41	1	0	4	23	0	0	263	1039
05:35:00 PM	1	0	1	0	1	0	1	0	0	22	1	0	2	20	1	0	246	1013
05:40:00 PM	2	3	0	0	2	0	2	0	3	51	3	0	3	32	1	0	237	1023
05:45:00 PM	1	0	1	0	2	0	4	0	3	66	1	0	4	16	1	0	251	1014
05:50:00 PM	1	1	2	0	1	0	4	0	1	23	1	0	3	21	3	0	262	988
05:55:00 PM	1	1	0	0	0	1	5	0	1	15	3	0	2	30	2	0	221	966

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*Locust St*
E/W street	*US 20*
City, State	Sisters OR
Site Notes	
Location	44.290153 - -121.543805
Start Date	Tuesday, October 15, 2019
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:00:00 PM
Peak 15 Min Start	04:20:00 PM
PHF (15-Min Int)	0.94

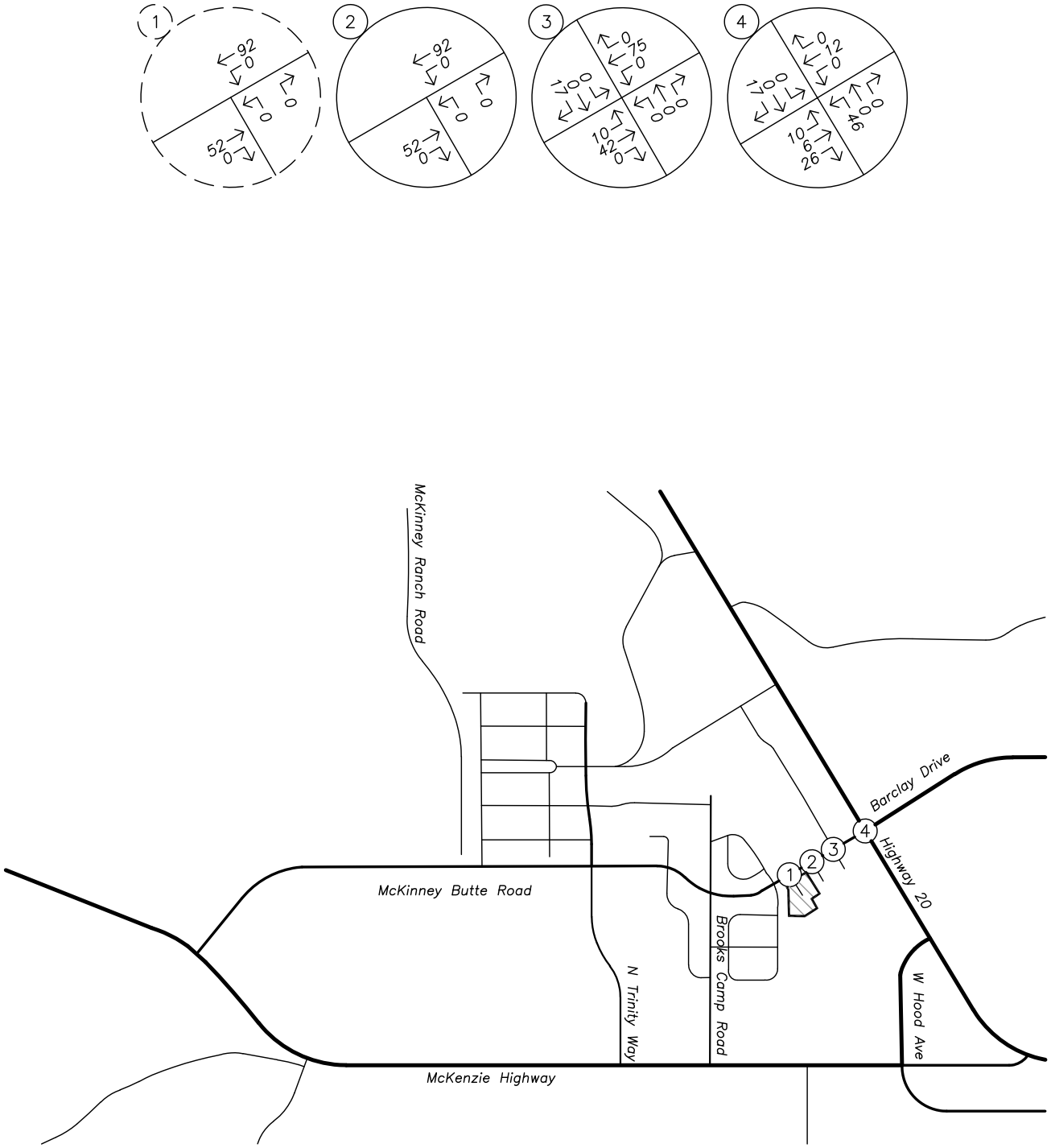


Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
7	2	33	0	78	3	64	0	72	619	6	0	11	458	138	0	42	145	697	607	20	212	529	730
Percent Heavy Vehicles																							
0.0%	0.0%	0.0%	0.0%	2.6%	0.0%	1.6%	0.0%	1.4%	4.2%	0.0%	0.0%	0.0%	5.2%	7.2%	0.0%	0.0%	2.1%	3.9%	5.6%	0.0%	5.2%	4.7%	3.8%

PHV- Bicycles																	PHV - Pedestrians				
Northbound				Southbound				Eastbound				Westbound					in Crosswalk				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3

All Vehicle Volumes

	Northbound Locust St				Southbound Locust St				Eastbound US 20				Westbound US 20				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	1	0	0	0	7	0	3	0	10	35	1	0	2	46	20	0		
04:05:00 PM	0	1	2	0	5	0	8	0	4	53	1	0	1	39	17	0		
04:10:00 PM	1	1	8	0	6	0	4	0	4	59	1	0	1	31	10	0	382	
04:15:00 PM	0	0	3	0	6	0	6	0	5	42	1	0	0	40	11	0	371	
04:20:00 PM	0	0	3	0	7	0	2	0	7	50	0	0	3	40	16	0	368	
04:25:00 PM	2	0	5	0	7	0	4	0	5	62	0	0	0	42	12	0	381	
04:30:00 PM	1	0	2	0	5	0	5	0	6	62	0	0	0	41	6	0	395	
04:35:00 PM	0	0	1	0	8	0	3	0	4	53	0	0	1	34	5	0	376	
04:40:00 PM	0	0	3	0	9	0	2	0	7	47	0	0	2	37	12	0	356	
04:45:00 PM	1	0	2	0	4	0	10	0	7	57	0	0	0	38	11	0	358	
04:50:00 PM	1	0	0	0	4	2	10	0	6	63	1	0	0	41	11	0	388	
04:55:00 PM	0	0	4	0	10	1	7	0	7	36	1	0	1	29	7	0	372	1491
05:00:00 PM	1	0	1	0	7	1	0	0	9	45	1	0	2	31	13	0	353	1477
05:05:00 PM	0	0	3	0	6	0	5	0	7	75	0	0	0	30	9	0	349	1481
05:10:00 PM	0	0	4	0	7	1	2	0	1	61	0	0	4	17	9	0	352	1461
05:15:00 PM	0	1	3	0	15	0	3	0	3	46	1	0	7	28	11	0	359	1465
05:20:00 PM	0	0	2	0	11	0	4	0	5	39	1	0	4	28	14	0	332	1445
05:25:00 PM	1	0	2	0	3	0	3	0	5	78	1	0	0	25	15	0	359	1439
05:30:00 PM	0	0	1	0	2	0	5	0	7	64	1	0	3	32	12	0	368	1438
05:35:00 PM	0	1	2	0	7	0	4	0	4	28	0	0	1	30	13	0	350	1419
05:40:00 PM	0	0	0	0	4	1	5	0	5	38	0	0	3	26	17	0	316	1399
05:45:00 PM	0	0	4	0	5	0	4	0	6	56	0	0	3	31	7	0	305	1385
05:50:00 PM	0	1	4	0	7	1	5	0	4	55	0	0	4	30	11	0	337	1368
05:55:00 PM	0	1	1	0	9	0	5	0	5	30	1	0	1	30	11	0	332	1359

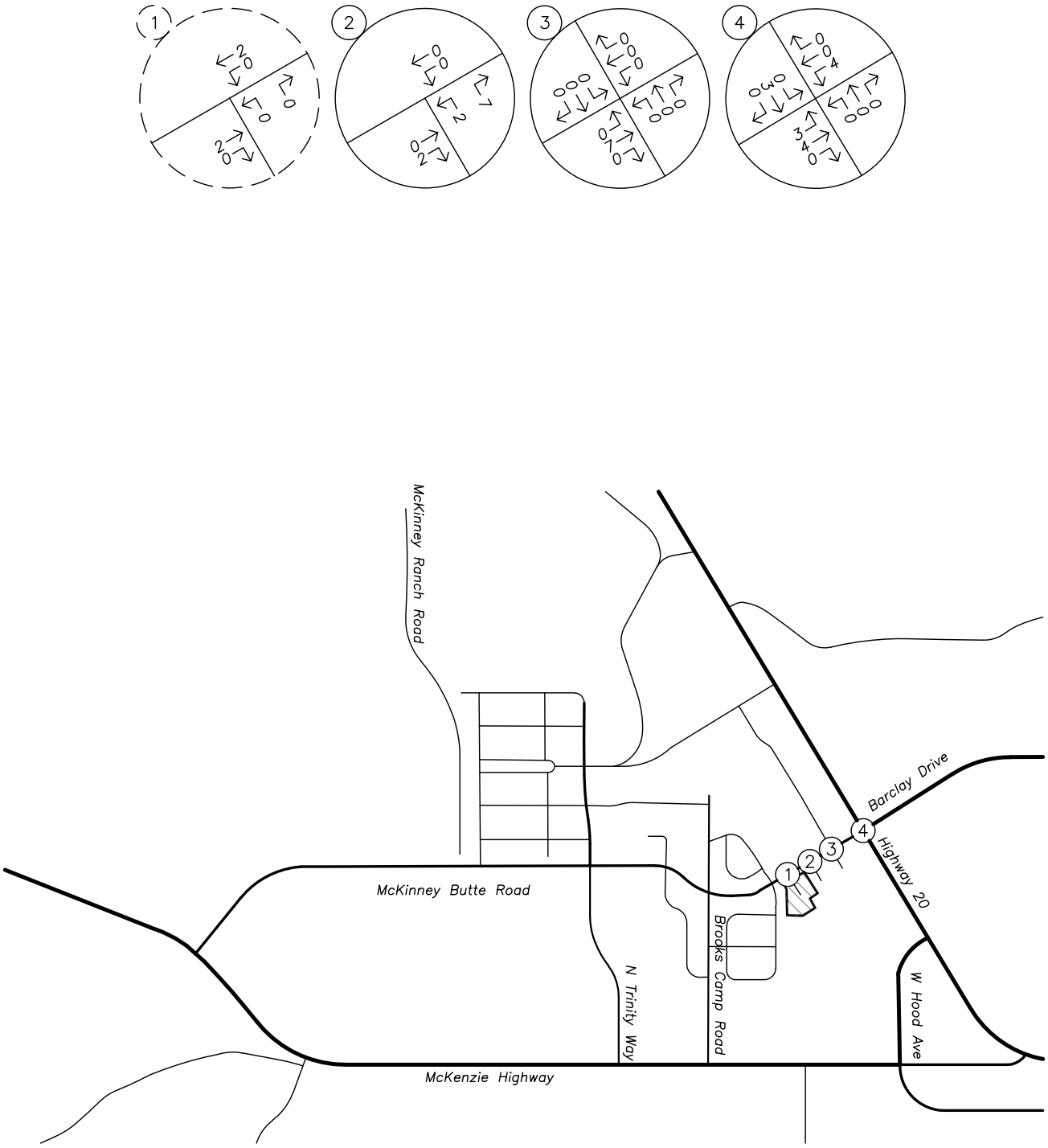


TRAFFIC VOLUMES
In-Process Trips – McKenzie Meadows
PM Peak Hour

no scale

FIGURE --

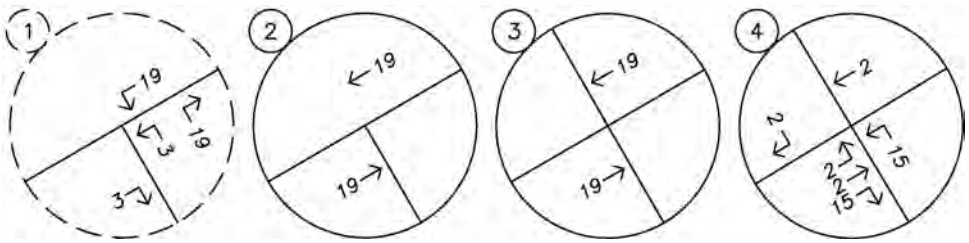
PAGE --


1
2
0
0
0
0
2
0
2
0
2
0
0
0
0
0
2
0
1
0
0
0
0
0

LEGEND

XX% *PERCENT OF PRIMARY TRIPS*

TRIP GENERATION			
	IN	OUT	TOTAL
AM	8	3	11
PM	22	22	44



TRAFFIC VOLUMES
In–Process Trips – Dollar General
PM Peak Hour

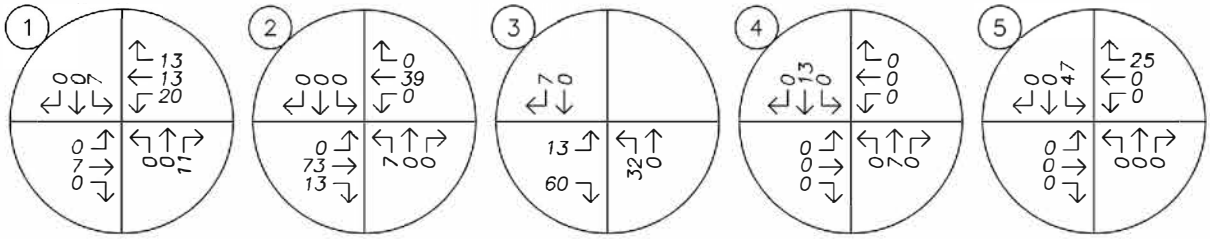
no scale

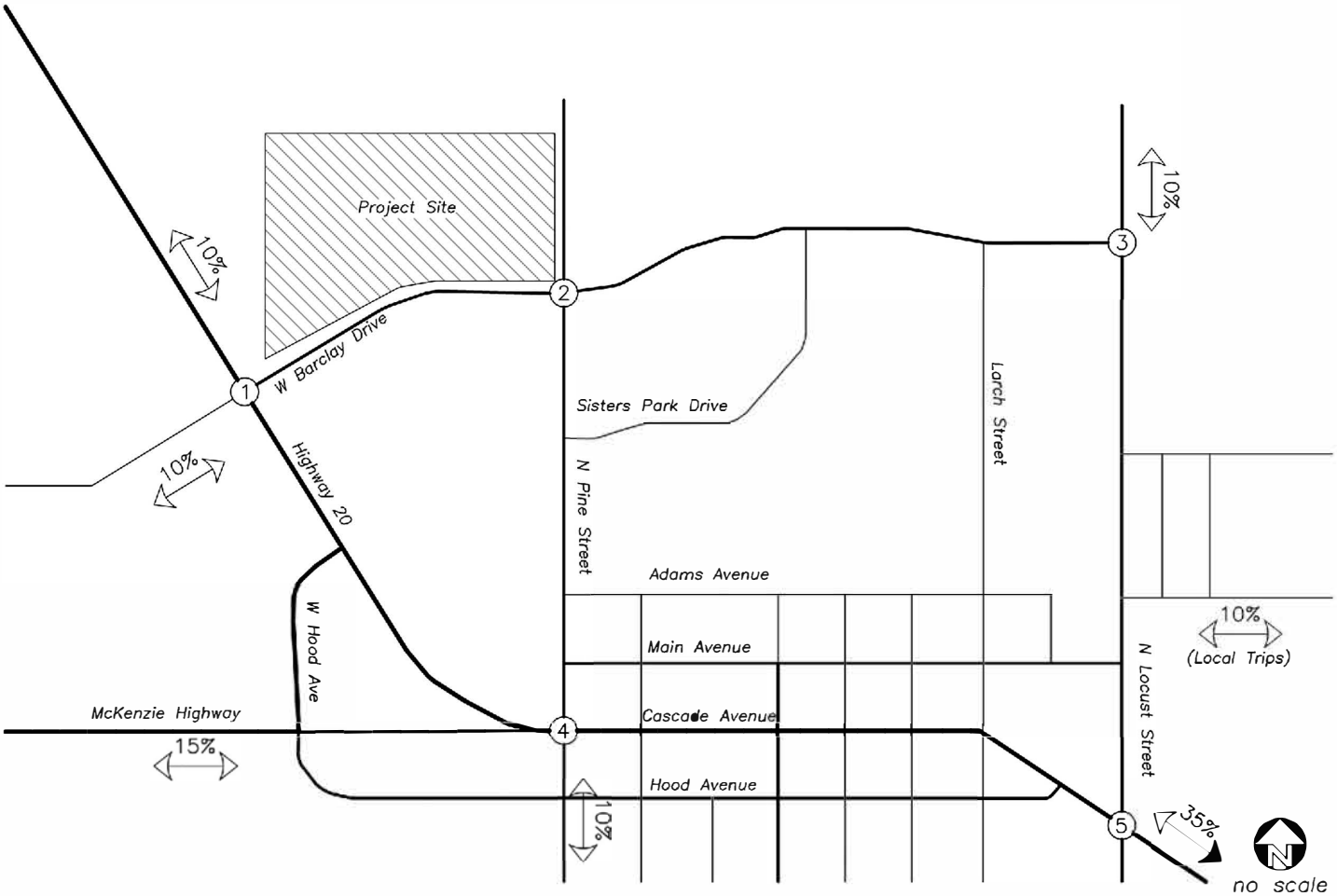
FIGURE 5

LEGEND

XX% PERCENT OF PRIMARY TRIPS

TRIP GENERATION			
	IN	OUT	TOTAL
PM	70	131	201





lancaster mobley

SITE TRIP DISTRIBUTION & ASSIGNMENT

Proposed Development Plan - Site Trips

PM Peak Hour

Figure 3

Sisters Industrial Subdivision

1/24/2020

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF SISTERS, DESCHUTES COUNTY

BARCLAY DR at SANTIAM HY, City of Sisters, Deschutes County, 01/01/2013 to 12/31/2017

1 - 3 of 6 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R U G S	M J N V	S I H L	C N	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED / LOC	ERROR	ACT	EVENT	CAUSE
02337	N	N	N		N	N		12/26/2016	02	BARCLAY WAY	INTER	CROSS	N	Y	CLR	FIX OBJ	01	NONE 9	STRGHT										058,092	26
COUNTY								MO		SANTIAM HY	NW		STOP SIGN	N	ICE	FIX		N/A	SE-NW									007		00
N								4P			05	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N								44 17 44.72	-121 33 34.75	001600100S00															UNK					
00553	N	N	N					05/05/2013	02	BARCLAY WAY	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											02
COUNTY								SU		SANTIAM HY	CN		STOP SIGN	N	DRY	ANGL		PRVTE	NE-SW									000		00
N								12P			01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	65	F	OR-Y		028	000		02
N								44 17 44.7192239	-121 33 34.7473079	001600100S00															OR<25					
																	02	NONE 0	STRGHT											
																		PRVTE	NW-SE									000		00
																		MTRCYCLE		01	DRVR	INJA	57	M	OR-Y		000	000		00
																									OR<25					
																	02	NONE 0	STRGHT											
																		PRVTE	NW-SE									000		00
																		MTRCYCLE		02	PSNG	INJA	59	F			000	000		00
00737	N	N	N		N	N		06/12/2013	02	BARCLAY WAY	INTER		N	N	CLR	ANGL-OTH	01	NONE	STRGHT										082	02
COUNTY								WE		SANTIAM HY	CN		STOP SIGN	N	DRY	ANGL		PRVTE	S -N									000		00
N								3P			02	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	84	F	OR-Y		028	000	082	02
N								44 17 44.7192239	-121 33 34.7473079	001600100S00															OR<25					
																	02	NONE 0	STRGHT											
																		PRVTE	E -W									000		00
																		PSNGR CAR		01	DRVR	INJA	35	F	OR-Y		000	000	082	00
																									OR<25					
																	02	NONE 0	STRGHT											
																		PRVTE	E -W									000		00
																		PSNGR CAR		02	PSNG	INJA	12	M			000	000		00
																	02	NONE 0	STRGHT											
																		PRVTE	E -W									000		00
																		PSNGR CAR		03	PSNG	INJA	08	F			000	000		00
00981	N	N	N		N	N		07/27/2013	02	BARCLAY WAY	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										010	02
COUNTY								SA		SANTIAM HY	CN		STOP SIGN	N	DRY	ANGL		PRVTE	NE-SW									000		00
N								12P			03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	20	M	OR-Y		028	000		02
N								44 17 44.7192239	-121 33 34.7473079	001600100S00															OR<25					
																	02	NONE 0	STRGHT											
																		PRVTE	NW-SE									000		00
																		PSNGR CAR		01	DRVR	INJB	34	M	OR-Y		000	000		00
																									OR<25					

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R U G S	M J N V	S I H L	C N K	W O R	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / INJ / SVRTY	A G E	S E X	LICNS / RES	PED / LOC	ERROR	ACT	EVENT	CAUSE
																	02	NONE 0	STRGHT										
																		PRVTE	NW-SE								000		00
																		PSNGR CAR		02	PSNG	INJB	34	F		000	000		00
																	02	NONE 0	STRGHT										
																		PRVTE	NW-SE								000		00
																		PSNGR CAR		03	PSNG	INJB	01	M		000	000		00
																	02	NONE 0	STRGHT										
																		PRVTE	NW-SE								000		00
																		PSNGR CAR		04	PSNG	INJB	07	M		000	000		00
																	02	NONE 0	STRGHT										
																		PRVTE	NW-SE								000		00
																		PSNGR CAR		05	PSNG	NO<5	04	F		000	000		00
01224	N	N	N		N	N		09/07/2013	02	BARCLAY WAY	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										02
COUNTY								SA		SANTIAM HY	CN		STOP SIGN	N	DRY	ANGL		PRVTE	SW-NE								000		00
N								12P			02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	48	F	OR-Y	028	000		02
N								44 17 44.7192239	-121 33 34.7473079	001600100S00															OR<25				
																	02	NONE 0	STRGHT										
																		PRVTE	SE-NW								000		00
																		PSNGR CAR		01	DRVR	NONE	30	M	OR-Y OR<25	000	000		00
01738	N	N	N		N	N		12/07/2013	02	BARCLAY WAY	INTER	CROSS	N	N	SNOW	ANGL-OTH	01	NONE 0	STRGHT										02
CITY								SA		SANTIAM HY	CN		STOP SIGN	N	ICE	ANGL		PRVTE	SW-NE								000		00
N								11A			04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	66	M	OR-Y	028	000		02
N								44 17 44.7192239	-121 33 34.7473079	001600100S00															OR<25				
																	02	NONE 0	STRGHT										
																		PRVTE	SE-NW								000		00
																		PSNGR CAR		01	DRVR	NONE	60	M	OR-Y OR<25	000	000		00

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF SISTERS, DESCHUTES COUNTY

BARCLAY DR at PINE ST, City of Sisters, Deschutes County, 01/01/2013 to 12/31/2017

1 - 3 of 3 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R U G S	M J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / INJ / SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
00962	N	N	N		N	N	05/20/2017	07	BARCLAY DR	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT									010	03,27
COUNTY							SA	0	PINE ST	CN		STOP SIGN	N	DRY	ANGL		PRVTE	W -E								000		00
N							3P			03	0		N	DAY	INJ		PSNGR CAR		01	DRVR INJC	46	F	OR-Y		000	000		00
N							44 17 49.37 -121 33 14.16																OR<25					
																01	NONE 0	STRGHT										
																	PRVTE	W -E								000		00
																	PSNGR CAR		02	PSNG INJC	18	F			000	000		00
																02	NONE 0	STRGHT										
																	PRVTE	N -S								000	010	00
																	PSNGR CAR		01	DRVR INJB	52	F	OR-Y		021,016	038		03,27
																							OR<25					
01334	N	N	N		N	N	07/12/2017	07	BARCLAY DR	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT									010	03
COUNTY							WE	0	PINE ST	CN		STOP SIGN	N	DRY	ANGL		PUBLC	E -W								000		00
N							1P			02	0		N	DAY	INJ		PSNGR CAR		01	DRVR NONE	42	M	OR-Y		000	000		00
N							44 17 49.37 -121 33 14.16																OR>25					
																02	NONE 0	STRGHT										
																	PRVTE	S -N								000	010	00
																	PSNGR CAR		01	DRVR INJB	63	F	OR-Y		021	000		03
																							OR>25					
																02	NONE 0	STRGHT										
																	PRVTE	S -N								000	010	00
																	PSNGR CAR		02	PSNG INJB	08	F			000	000		00
01581	N	N	N		N	N	08/20/2017	07	BARCLAY DR	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										03
COUNTY							SU	0	PINE ST	CN		STOP SIGN	N	DRY	ANGL		PRVTE	N -S								000		00
N							7P			01	0		N	DAY	INJ		PSNGR CAR		01	DRVR INJB	18	F	OR-Y		021	000		03
N							44 17 49.37 -121 33 14.16																OR<25					
																01	NONE 0	STRGHT										
																	PRVTE	N -S								000		00
																	PSNGR CAR		02	PSNG INJC	18	F			000	000		00
																02	NONE 0	STRGHT										
																	PRVTE	E -W								000		00
																	PSNGR CAR		01	DRVR INJB	70	M	OR-Y		000	000		00
																							OR<25					
																02	NONE 0	STRGHT										
																	PRVTE	E -W								000		00
																	PSNGR CAR		02	PSNG INJB	62	F			000	000		00

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF SISTERS, DESCHUTES COUNTY

BARCLAY DR at LOCUST ST, City of Sisters, Deschutes County, 01/01/2013 to 12/31/2017

1 - 1 of 1 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D / A L C / D / M R G S / J U N / I / C N / S V / W H / O L / R / K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED / LOC	ERROR	ACT	EVENT	CAUSE
00370	N N N	02/13/2017	07	BARCLAY DR	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	TURN-L											02
NONE		MO	0	LOCUST ST	CN		STOP SIGN	N	DRY	TURN		UNKN	W -N									015		00
N		4P			04	0		N	DAY	INJ		UNKNOWN		01	DRVR	NONE	00	Unk	UNK		028	000		02
N		44 17 51.38	-121 32 37.46																UNK					
											02	NONE 0	TURN-L											
												PRVTE	S -W									000		00
												PSNGR CAR		01	DRVR	INJC	61	M	OR-Y		000	000		00
																			OR>25					

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF SISTERS, DESCHUTES COUNTY

HOOD AVE at SANTIAM HY, City of Sisters, Deschutes County, 01/01/2013 to 12/31/2017

1 - 1 of 1 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R U G S	M J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED / LOC	ERROR	ACT	EVENT	CAUSE
00419	N	N	N		N	N	04/04/2015	02	W HOOD AVE	INTER	3-LEG	N	N	CLD	ANGL-OTH	01	NONE 0	STRGHT											02
COUNTY							SA		SANTIAM HY	CN		STOP SIGN	N	DRY	TURN		PRVTE	W -E									000		00
N							3P			04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	55	M	OR-Y		000	000		00
N							44 17 37.19	-121 33 28.32	001600100S00															OR<25					
																02	NONE 0	TURN-L											
																	PRVTE	SW-W									000		00
																	MOTRHOME		01	DRVR	NONE	63	F	OR-Y		028	000		02
																								OR<25					

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CITY OF SISTERS, DESCHUTES COUNTY

PINE ST at CASCADE AVE, City of Sisters, Deschutes County, 01/01/2013 to 12/31/2017

1 - 4 of 5 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R U G S	M J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / INJ / SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
01056	N	N	N				07/17/2014	02	CASCADE AVE	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT									006	06
NONE							TH		PINE ST	UN		STOP SIGN	N	DRY	REAR		PRVTE	E -W								000		00
N							4P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR NONE	00	M	UNK		026	000		07
N							44 17 28.86	-121 33 13.82	001500100S00														UNK					
																02	NONE 0	STOP										
																	PRVTE	E -W								011	006	00
																	PSNGR CAR		01	DRVR INJC	52	M	OR-Y		000	000		00
																							OR<25					
																02	NONE 0	STOP										
																	PRVTE	E -W								011	006	00
																	PSNGR CAR		01	PSNG INJC	46	M			000	000		00
01077	N	N	N				08/11/2013	02	CASCADE AVE	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE							SU		PINE ST	E		STOP SIGN	N	DRY	REAR		PRVTE	E -W								000		00
N							9A			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR NONE	25	M	OR-Y		026	000		07
N							44 17 28.8605039	-121 33 13.824504	001500100S00														OR<25					
																02	NONE 0	STOP										
																	PRVTE	E -W								011		00
																	PSNGR CAR		01	DRVR NONE	36	F	OR-Y		000	000		00
																							OR<25					
00158	N	N	N	N	N		01/30/2014	02	CASCADE AVE	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
COUNTY							TH		PINE ST	E		UNKNOWN	N	DRY	REAR		PRVTE	E -W								000		00
N							1P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR NONE	17	F	OR-Y		026	000		07
N							44 17 28.8605399	-121 33 13.824504	001500100S00														OR<25					
																02	NONE 0	STOP										
																	PRVTE	E -W								011		00
																	PSNGR CAR		01	DRVR NONE	20	M	OR-Y		000	000		00
																							OR<25					
01855	N	N	N	N	N		09/20/2017	02	CASCADE AVE	INTER	CROSS	N	N	CLD	PED	01	NONE 0	STRGHT										02,29
COUNTY							WE		PINE ST	E		STOP SIGN	N	DRY	PED		PRVTE	W -E								006		00
N							11A			05	0		N	DAY	INJ		PSNGR CAR		01	DRVR NONE	70	M	OR-Y		029	000		02
N							44 17 28.86	-121 33 13.82	001500100S00														OR>25					
																		- STRGHT	01	PED INJC	34	M		I XWLK	000	034		00
																02	NONE 0	S N STRGHT										
																	PRVTE	W -E								022		00
																	PSNGR CAR		01	DRVR NONE	70	F	OR-Y		026	000		29
																							OR<25					

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CITY OF SISTERS, DESCHUTES COUNTY

PINE ST at CASCADE AVE, City of Sisters, Deschutes County, 01/01/2013 to 12/31/2017

5 - 5 of 5 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R U G S	M J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE		MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED / LOC	ERROR	ACT	EVENT	CAUSE
01379	N	N	N		N	N	09/15/2014	02	CASCADE AVE	INTER	CROSS	N	N	CLD	O-1 L-TURN	01	NONE	0	TURN-L											02
CITY							MO		PINE ST	CN		STOP SIGN	N	DRY	TURN		PRVTE		S -W									000		00
N							11A			01	0		N	DAY	INJ		PSNGR CAR			01	DRVR	NONE	29	M	OR-Y		028,004	000		02
N							44 17 28.86	-121 33 13.82	001500100S00																OR<25					
																01	NONE	0	TURN-L											
																	PRVTE		S -W									000		00
																	PSNGR CAR			01	PSNG	INJC	28	F			000	000		00
																02	NONE	0	STRGHT											
																	PRVTE		N -S									000		00
																	PSNGR CAR			01	DRVR	NONE	17	M	OR-Y		000	000		00
																									OR<25					

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF SISTERS, DESCHUTES COUNTY

LOCUST ST at MCKENZIE HY, City of Sisters, Deschutes County, 01/01/2013 to 12/31/2017

1 - 4 of 6 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R U G S	M J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
00228	N	N	N				02/16/2013	07	LOCUST ST	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE							SA	0	MCKENZIE HY	N		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000		00
N							10A			05	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	29	M	OR-Y		026	000		07
N							44 17 24.665424	-121 32 37.808088																OR<25					
																02	NONE 0	STOP											
																	PRVTE	S -N									011		00
																	PSNGR CAR		01	DRVR	NONE	53	F	OR-Y		000	000		00
																								OR<25					
01641	N	N	N		N	N	08/28/2017	02	LOCUST ST	INTER	CROSS	N	N	SMOK	S-1STOP	01	NONE 0	STRGHT											27,29
COUNTY							MO		MCKENZIE HY	SE		STOP SIGN	N	DRY	REAR		PRVTE	SE-NW									000		00
N							10A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	36	F	OR-Y		016,026,014	038		27,29
N							44 17 24.67	-121 32 37.81	001500100S00															OR<25					
																02	NONE 0	STOP											
																	PRVTE	SE-NW									012		00
																	PSNGR CAR		01	DRVR	INJC	67	F	OTH-Y		000	000		00
																								OR<25					
00110	N	N	N		N	N	01/20/2013	02	LOCUST ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	POLCE 0	STRGHT											02
STATE							SU		MCKENZIE HY	CN		STOP SIGN	N	DRY	ANGL		PUBLC	S -N									000		00
N							1P			04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	41	M	OR-Y		028	000		02
N							44 17 24.66546	-121 32 37.808088	001500100S00															OR<25					
																02	NONE 0	STRGHT											
																	PRVTE	W -E									000		00
																	PSNGR CAR		01	DRVR	INJC	58	F	OR-Y		000	000		00
																								OR<25					
00243	N	N	N		N	N	02/21/2013	02	LOCUST ST	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	TURN-L											02
STATE							TH		MCKENZIE HY	CN		STOP SIGN	N	DRY	TURN		PRVTE	N -SE									000		00
N							2P			04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	26	M	OR-Y		028	000		02
N							44 17 24.66546	-121 32 37.808088	001500100S00															OR<25					
																02	NONE 0	STRGHT											
																	PRVTE	S -N									000		00
																	PSNGR CAR		01	DRVR	INJC	33	M	NONE		000	000		00
																								OR<25					
00604	N	N	N		N	N	05/07/2015	02	LOCUST ST	INTER	CROSS	N	N	CLR	S-1STOP	01	POLCE 0	STRGHT										004	29,27
STATE							TH		MCKENZIE HY	CN		STOP SIGN	N	DRY	REAR		PUBLC	SE-NW									000		00
N							9A			02	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	33	M	OR-Y		026	038		29,16
N							44 17 24.67	-121 32 37.81	001500100S00															OR<25					
																02	NONE 0	STOP											
																	PRVTE	SE-NW									011	004	00
																	PSNGR CAR		01	DRVR	NONE	48	M	OR-Y		000	000		00
																								OR<25					

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A	D R U G S	M J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / INJ / SVRTY	A G E	S E X	LICNS / RES	PED / LOC	ERROR	ACT	EVENT	CAUSE
																02	NONE 0	STOP										
																	PRVTE	SE-NW								011	004	00
																	PSNGR CAR		02	PSNG INJC	41	F			000	000		00
																02	NONE 0	STOP										
																	PRVTE	SE-NW								011	004	00
																	PSNGR CAR		03	PSNG NO<5	02	F			000	000		00
																02	NONE 0	STOP										
																	PRVTE	SE-NW								011	004	00
																	PSNGR CAR		04	PSNG NO<5	01	F			000	000		00
01686	Y	N	N		N	N	09/05/2017	02	LOCUST ST	INTER	CROSS	N	N	SMOK	ANGL-OTH	01	NONE 0	TURN-L										02,40
COUNTY							TU		MCKENZIE HY	CN		STOP SIGN	N	DRY	TURN		PRVTE	N -SE								015		00
N							3P			01	0		N	DAY	INJ		PSNGR CAR		01	DRVR NONE	24	M	OR-Y		028	000		02,40
N							44 17 24.67 -121 32 37.81		001500100S00														OR<25					
																02	NONE 0	STRGHT										
																	PRVTE	SE-NW								000		00
																	PSNGR CAR		01	DRVR NONE	26	M	OTH-Y		000	000		00
																							OR<25					
																02	NONE 0	STRGHT										
																	PRVTE	SE-NW								000		00
																	PSNGR CAR		02	PSNG INJC	26	F			000	000		00

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

Traffic Signal Warrant Analysis

Project: 20011 Sisters Woodlands
Date: 7/9/2020
Scenario: 2040 Planning Horizon + Zone Change Volumes

Major Street:	W Barclay Drive	Minor Street:	N Pine Street
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	613	PM Peak Hour Volumes:	123

Warrant Used:

_____	100 percent of standard warrants used
X	70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
WARRANT 1, CONDITION A		100%	70%	100%	70%
Major St.	Minor St.	Warrants	Warrants	Warrants	Warrants
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
Condition A: Minimum Vehicular Volume			
Major Street	6,130	6,200	
Minor Street*	1,230	1,850	**No**
Condition B: Interruption of Continuous Traffic			
Major Street	6,130	9,300	
Minor Street*	1,230	950	**No**
Combination Warrant			
Major Street	6,130	7,440	
Minor Street*	1,230	1,480	**No**

* Minor street right-turning traffic volumes reduced by 25%

Traffic Signal Warrant Analysis

Project: 20011 Sisters Woodlands
Date: 7/9/2020
Scenario: 2040 Planning Horizon + Zone Change Volumes

Major Street:	US Highway 20	Minor Street:	W Hood Avenue
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	1,236	PM Peak Hour Volumes:	68

Warrant Used:

_____	100 percent of standard warrants used
X	70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
WARRANT 1, CONDITION A		100%	70%	100%	70%
Major St.	Minor St.	Warrants	Warrants	Warrants	Warrants
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
Condition A: Minimum Vehicular Volume			
Major Street	12,360	6,200	
Minor Street*	680	1,850	**No**
Condition B: Interruption of Continuous Traffic			
Major Street	12,360	9,300	
Minor Street*	680	950	**No**
Combination Warrant			
Major Street	12,360	7,440	
Minor Street*	680	1,480	**No**

* Minor street right-turning traffic volumes reduced by 25%

Traffic Signal Warrant Analysis

Project: 20011 Sisters Woodlands
Date: 7/9/2020
Scenario: 2040 Planning Horizon + Zone Change Volumes

Major Street:	US Highway 20	Minor Street:	N Pine Street
Number of Lanes:	1	Number of Lanes:	2
PM Peak Hour Volumes:	1,512	PM Peak Hour Volumes:	124

Warrant Used:

_____ 100 percent of standard warrants used
X 70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
WARRANT 1, CONDITION A		100%	70%	100%	70%
Major St.	Minor St.	Warrants	Warrants	Warrants	Warrants
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

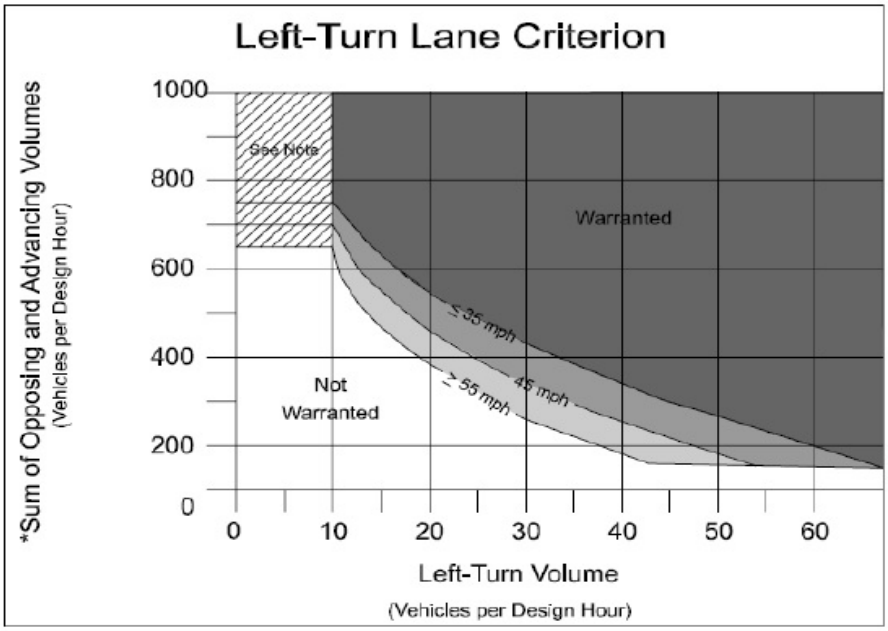
	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
Condition A: Minimum Vehicular Volume			
Major Street	15,120	6,200	
Minor Street*	1,240	2,500	**No**
Condition B: Interruption of Continuous Traffic			
Major Street	15,120	9,300	
Minor Street*	1,240	1,250	**No**
Combination Warrant			
Major Street	15,120	7,440	
Minor Street*	1,240	2,000	**No**

* Minor street right-turning traffic volumes reduced by 25%

Project: 20011 Sisters Woodlands
Intersection: W Barclay Drive at N Pine Street, Eastbound Approach
Date: 7/9/2020
Scenario: 2040 Planning Horizon + Zone Change Volumes

Speed? 30 mph

AM Peak Hour		**PM Peak Hour**	
Left-Turn Volume		Left-Turn Volume	4
Approaching DHV		Approaching DHV	317
# of Advancing Through Lanes		# of Advancing Through Lanes	1
Opposing DHV		Opposing DHV	263
# of Opposing Through Lanes		# of Opposing Through Lanes	1
O+A DHV		**O+A DHV**	**580**
Lane Needed?		Lane Needed?	**No**



Source: Oregon DOT Analysis Procedures Manual 2008

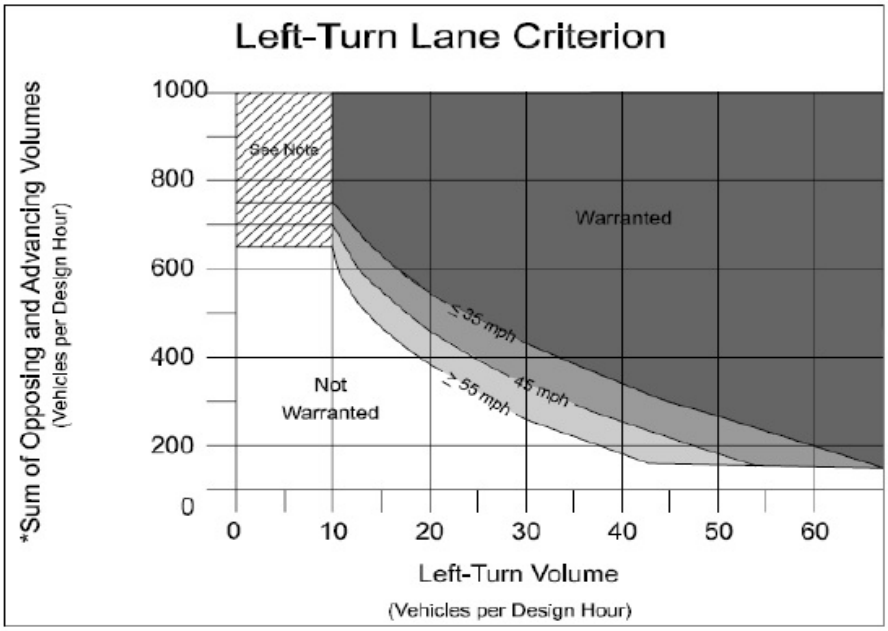
*(Advancing Vol/ # of Advancing Through Lanes)+
(Opposing Vol/ # of Opposing Through Lanes)

Note: The criterion is not met from zero to ten left turn vehicles per hour, but careful consideration should be given to installing a left turn lane due to the increased potential for accidents in the through lanes. While the turn volumes are low, the adverse safety and operational impacts may require installation of a left turn. The final determination will be based on a field study.

Project: 20011 Sisters Woodlands
Intersection: W Barclay Drive at N Pine Street, Westbound Approach
Date: 7/9/2020
Scenario: 2040 Planning Horizon + Zone Change Volumes

Speed? 30 mph

AM Peak Hour		**PM Peak Hour**	
Left-Turn Volume		Left-Turn Volume	33
Approaching DHV		Approaching DHV	296
# of Advancing Through Lanes		# of Advancing Through Lanes	1
Opposing DHV		Opposing DHV	313
# of Opposing Through Lanes		# of Opposing Through Lanes	1
O+A DHV		**O+A DHV**	**609**
Lane Needed?		Lane Needed?	**Yes**



Source: Oregon DOT Analysis Procedures Manual 2008

*(Advancing Vol/ # of Advancing Through Lanes)+
(Opposing Vol/ # of Opposing Through Lanes)

Note: The criterion is not met from zero to ten left turn vehicles per hour, but careful consideration should be given to installing a left turn lane due to the increased potential for accidents in the through lanes. While the turn volumes are low, the adverse safety and operational impacts may require installation of a left turn. The final determination will be based on a field study.

LEVEL OF SERVICE

Level of service is used to describe the quality of traffic flow. Levels of service A to C are considered good, and rural roads are usually designed for level of service C. Urban streets and signalized intersections are typically designed for level of service D. Level of service E is considered to be the limit of acceptable delay. For unsignalized intersections, level of service E is generally considered acceptable. Here is a more complete description of levels of service:

Level of service A: Very low delay at intersections, with all traffic signal cycles clearing and no vehicles waiting through more than one signal cycle. On highways, low volume and high speeds, with speeds not restricted by other vehicles.

Level of service B: Operating speeds beginning to be affected by other traffic; short traffic delays at intersections. Higher average intersection delay than for level of service A resulting from more vehicles stopping.

Level of service C: Operating speeds and maneuverability closely controlled by other traffic; higher delays at intersections than for level of service B due to a significant number of vehicles stopping. Not all signal cycles clear the waiting vehicles. This is the recommended design standard for rural highways.

Level of service D: Tolerable operating speeds; long traffic delays occur at intersections. The influence of congestion is noticeable. At traffic signals many vehicles stop, and the proportion of vehicles not stopping declines. The number of signal cycle failures, for which vehicles must wait through more than one signal cycle, are noticeable. This is typically the design level for urban signalized intersections.

Level of service E: Restricted speeds, very long traffic delays at traffic signals, and traffic volumes near capacity. Flow is unstable so that any interruption, no matter how minor, will cause queues to form and service to deteriorate to level of service F. Traffic signal cycle failures are frequent occurrences. For unsignalized intersections, level of service E or better is generally considered acceptable.

Level of service F: Extreme delays, resulting in long queues which may interfere with other traffic movements. There may be stoppages of long duration, and speeds may drop to zero. There may be frequent signal cycle failures. Level of service F will typically result when vehicle arrival rates are greater than capacity. It is considered unacceptable by most drivers.

1e

LEVEL OF SERVICE CRITERIA
FOR SIGNALIZED INTERSECTIONS

LEVEL OF SERVICE	CONTROL DELAY PER VEHICLE (Seconds)
A	<10
B	10-20
C	20-35
D	35-55
E	55-80
F	>80

LEVEL OF SERVICE CRITERIA
FOR UNSIGNALIZED INTERSECTIONS

LEVEL OF SERVICE	CONTROL DELAY PER VEHICLE (Seconds)
A	<10
B	10-15
C	15-25
D	25-35
E	35-50
F	>50

Vistro File: Z:\...\Sisters Woodlands.vistro
Report File: Z:\...\New Existing.pdf

Scenario 4 Existing Volumes
5/15/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	US 20 at W Barclay Drive	Roundabout	HCM 6th Edition	SEB Thru		8.9	A
2	N Pine Street at W Barclay Drive	Two-way stop	HCM 6th Edition	NB Left	0.106	12.4	B
3	N Locust Street at W Barclay Drive	Two-way stop	HCM 6th Edition	EB Left	0.145	13.0	B
4	US 20 at W Hood Avenue	Two-way stop	HCM 6th Edition	NEB Left	0.091	26.2	D
5	Pine Street at US 20	Two-way stop	HCM 6th Edition	NB Left	0.232	57.2	F
6	Locust Street at US 20	Two-way stop	HCM 6th Edition	SB Left	1.103	240.7	F

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.

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Version 7.00-06

Intersection Level Of Service Report
Intersection 1: US 20 at W Barclay Drive

Control Type:	Roundabout	Delay (sec / veh):	8.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name												
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
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	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	87	79	113	31	108	51	100	273	9	67	418	26
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 [%]	2.20	2.20	2.20	1.60	1.60	1.60	6.50	6.50	6.50	7.40	7.40	7.40
Growth 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
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
Total Hourly Volume [veh/h]	87	79	113	31	108	51	100	273	9	67	418	26
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
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]	22	20	29	8	28	13	26	70	2	17	107	7
Total Analysis Volume [veh/h]	89	81	115	32	110	52	102	279	9	68	427	27
Pedestrian Volume [ped/h]	0			0			1			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	564			497			247			253		
Exiting Flow Rate [veh/h]	249			165			609			441		
Demand Flow Rate [veh/h]	87	79	113	31	108	51	100	273	9	67	418	26
Adjusted Demand Flow Rate [veh/h]	89	81	115	32	110	52	102	279	9	68	427	27

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.94	0.93
Entry Flow Rate [veh/h]	292	198	416	561
Capacity of Entry and Bypass Lanes [veh/h]	777	832	1073	1067
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	760	819	1008	993
X, volume / capacity	0.38	0.24	0.39	0.53

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	B
95th-Percentile Queue Length [veh]	1.75	0.92	1.85	3.16
95th-Percentile Queue Length [ft]	43.76	23.03	46.27	78.93
Approach Delay [s/veh]	9.44	6.95	7.75	10.20
Approach LOS	A	A	A	B
Intersection Delay [s/veh]	8.90			
Intersection LOS	A			

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Version 7.00-06

Intersection Level Of Service Report
Intersection 2: N Pine Street at W Barclay Drive

Control Type:	Two-way stop	Delay (sec / veh):	12.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.106

Intersection Setup

Name												
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	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			20.00			20.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	50	6	22	13	14	13	2	117	20	18	126	1
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 [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.70	0.70	0.00	0.00	0.00
Growth 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
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
Total Hourly Volume [veh/h]	50	6	22	13	14	13	2	117	20	18	126	1
Peak Hour Factor	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400
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]	15	2	7	4	4	4	1	35	6	5	38	0
Total Analysis Volume [veh/h]	60	7	26	15	17	15	2	139	24	21	150	1
Pedestrian Volume [ped/h]	0			0			0			2		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.01	0.03	0.03	0.03	0.02	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	12.36	12.31	10.00	11.85	11.87	9.44	7.51	0.00	0.00	7.56	0.00	0.00
Movement LOS	B	B	B	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.52	0.52	0.52	0.24	0.24	0.24	0.00	0.00	0.00	0.04	0.04	0.04
95th-Percentile Queue Length [ft/ln]	12.88	12.88	12.88	5.94	5.94	5.94	0.10	0.10	0.10	1.12	1.12	1.12
d_A, Approach Delay [s/veh]	11.69			11.09			0.09			0.92		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	3.74											
Intersection LOS	B											

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Version 7.00-06

Intersection Level Of Service Report
Intersection 3: N Locust Street at W Barclay Drive

Control Type:	Two-way stop	Delay (sec / veh):	13.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.145

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	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]	25.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	86	87	88	39	77	94
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.70	1.70	1.60	1.60	0.60	0.60
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	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]	86	87	88	39	77	94
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	23	24	10	21	25
Total Analysis Volume [veh/h]	92	94	95	42	83	101
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	0.06	0.00	0.00	0.00	0.15	0.11
d_M, Delay for Movement [s/veh]	7.65	0.00	0.00	0.00	12.95	10.49
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.20	0.20	0.00	0.00	1.00	1.00
95th-Percentile Queue Length [ft/ln]	5.08	5.08	0.00	0.00	24.96	24.96
d_A, Approach Delay [s/veh]	3.79		0.00		11.60	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	5.60					
Intersection LOS	B					

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Intersection Level Of Service Report
Intersection 4: US 20 at W Hood Avenue

Control Type:	Two-way stop	Delay (sec / veh):	26.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.091

Intersection Setup

Name						
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	200.00	100.00	100.00	100.00
Speed [mph]	30.00		35.00		20.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name						
Base Volume Input [veh/h]	15	15	86	417	466	16
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	3.90	3.90	5.60	5.60
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	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]	15	15	86	417	466	16
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	4	24	117	131	4
Total Analysis Volume [veh/h]	17	17	97	469	524	18
Pedestrian Volume [ped/h]	2		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
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	0.09	0.03	0.10	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	26.19	11.78	8.93	0.00	0.00	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.30	0.10	0.32	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	7.40	2.40	7.92	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	18.98		1.53		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.32					
Intersection LOS	D					

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Intersection Level Of Service Report
Intersection 5: Pine Street at US 20

Control Type:	Two-way stop	Delay (sec / veh):	57.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.232

Intersection Setup

Name												
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	0	0	0	0	0	1	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			20.00			20.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	20	15	27	11	19	55	45	600	27	34	413	14
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 [%]	0.00	0.00	0.00	0.00	0.00	0.00	3.50	3.50	3.50	5.50	5.50	5.50
Growth 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
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
Total Hourly Volume [veh/h]	20	15	27	11	19	55	45	600	27	34	413	14
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
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]	5	4	7	3	5	15	12	165	7	9	113	4
Total Analysis Volume [veh/h]	22	16	30	12	21	60	49	659	30	37	454	15
Pedestrian Volume [ped/h]	5			2			2			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.23	0.11	0.07	0.11	0.15	0.10	0.05	0.01	0.00	0.04	0.00	0.00
d_M, Delay for Movement [s/veh]	57.25	44.40	27.24	48.87	40.18	11.68	8.49	0.00	0.00	9.26	0.00	0.00
Movement LOS	F	E	D	E	E	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.81	1.81	1.81	0.98	0.98	0.33	0.14	0.00	0.00	0.13	0.00	0.00
95th-Percentile Queue Length [ft/ln]	45.35	45.35	45.35	24.50	24.50	8.31	3.56	0.00	0.00	3.28	0.00	0.00
d_A, Approach Delay [s/veh]	40.99			22.91			0.56			0.68		
Approach LOS	E			C			A			A		
d_I, Intersection Delay [s/veh]	4.04											
Intersection LOS	F											

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Intersection Level Of Service Report
Intersection 6: Locust Street at US 20

Control Type:	Two-way stop	Delay (sec / veh):	240.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.103

Intersection Setup

Name												
Approach	Northbound			Southbound			Northwestbound			Southeastbound		
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	0	0	0	1	0	0	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			20.00			20.00			20.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	7	2	33	78	3	64	11	542	138	72	733	6
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 [%]	0.00	0.00	0.00	2.10	2.10	2.10	5.60	5.60	5.60	3.90	3.90	3.90
Growth 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
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
Total Hourly Volume [veh/h]	7	2	33	78	3	64	11	542	138	72	733	6
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
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]	2	1	9	21	1	17	3	144	37	19	195	2
Total Analysis Volume [veh/h]	7	2	35	83	3	68	12	577	147	77	780	6
Pedestrian Volume [ped/h]	0			0			0			3		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.02	0.09	1.10	0.03	0.13	0.01	0.01	0.00	0.09	0.01	0.00
d_M, Delay for Movement [s/veh]	68.46	52.75	19.33	240.74	227.97	13.10	9.47	0.00	0.00	9.54	0.00	0.00
Movement LOS	F	F	C	F	F	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.83	0.83	0.83	6.34	6.34	0.46	0.04	0.04	0.00	0.29	0.00	0.00
95th-Percentile Queue Length [ft/ln]	20.85	20.85	20.85	158.51	158.51	11.38	1.12	1.12	0.00	7.26	0.00	0.00
d_A, Approach Delay [s/veh]	28.67			139.97			0.15			0.85		
Approach LOS	D			F			A			A		
d_I, Intersection Delay [s/veh]	13.17											
Intersection LOS	F											

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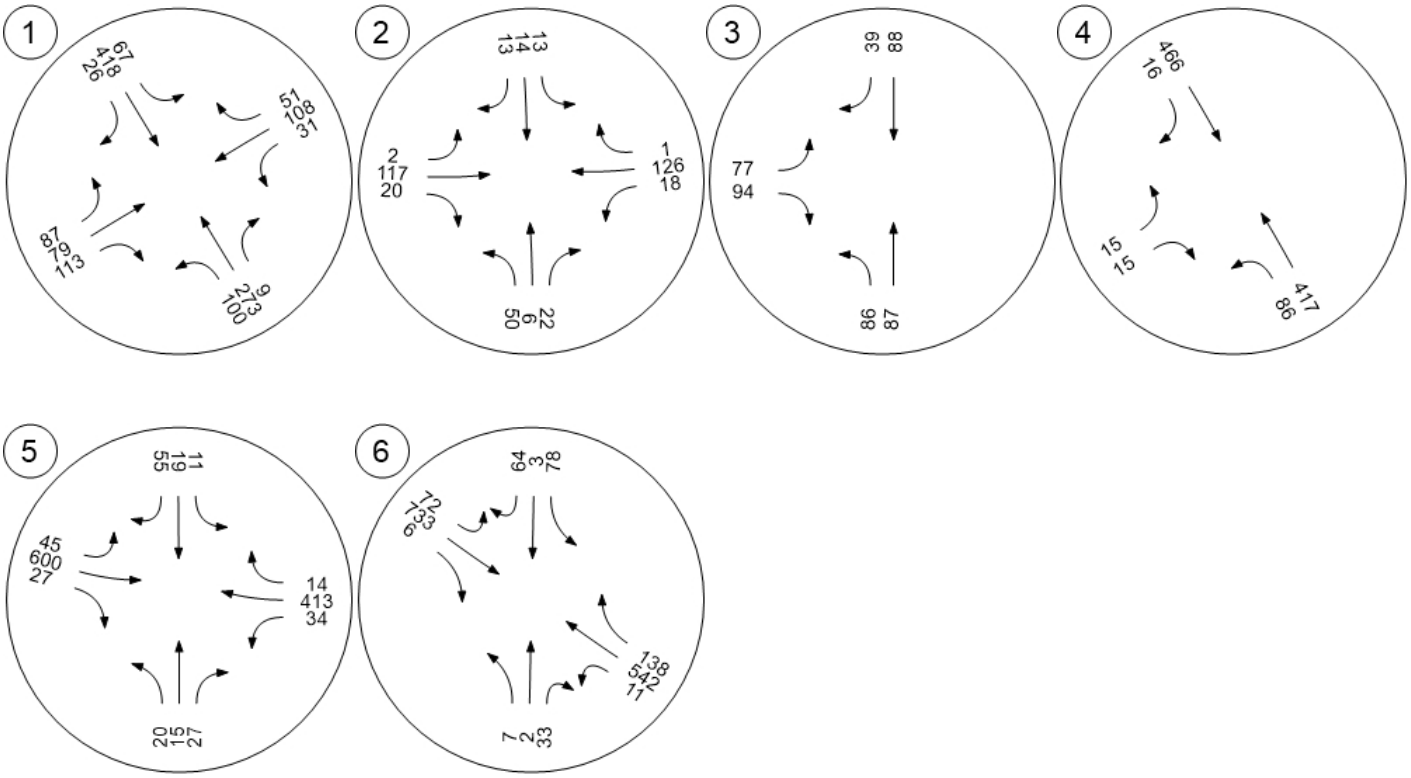
Traffic Volume - Base Volume



Vistro File: Z:\...\Sisters Woodlands.vistro
Report File: Z:\...\2040 Planning Horizon.pdf

Scenario 2 2 2040 Planning Horizon Volumes
5/15/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	US 20 at W Barclay Drive	Roundabout	HCM 6th Edition	SEB Thru		19.2	C
2	N Pine Street at W Barclay Drive	Two-way stop	HCM 6th Edition	NB Left	0.327	23.8	C
3	N Locust Street at W Barclay Drive	Two-way stop	HCM 6th Edition	SB Thru	0.373	21.9	C
4	US 20 at W Hood Avenue	Two-way stop	HCM 6th Edition	NEB Left	0.390	58.4	F
5	Pine Street at US 20	Two-way stop	HCM 6th Edition	NB Left	1.632	826.1	F
6	Locust Street at US 20	Roundabout	HCM 6th Edition	SEB Thru		59.0	F

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.

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Intersection Level Of Service Report
Intersection 1: US 20 at W Barclay Drive

Control Type:	Roundabout	Delay (sec / veh):	19.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes		

Intersection Setup

Name												
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
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	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	132	120	171	47	164	77	152	280	14	102	428	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 [%]	2.20	2.20	2.20	1.60	1.60	1.60	6.50	6.50	6.50	7.40	7.40	7.40
Growth 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
In-Process Volume [veh/h]	15	20	41	24	26	13	61	0	11	7	3	19
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
Total Hourly Volume [veh/h]	147	140	212	71	190	90	213	280	25	109	431	58
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
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]	38	36	54	18	48	23	54	71	6	28	110	15
Total Analysis Volume [veh/h]	150	143	216	72	194	92	217	286	26	111	440	59
Pedestrian Volume [ped/h]	0			0			1			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	665			689			419			501		
Exiting Flow Rate [veh/h]	492			293			766			551		
Demand Flow Rate [veh/h]	147	140	212	71	190	90	213	280	25	109	431	58
Adjusted Demand Flow Rate [veh/h]	150	143	216	72	194	92	217	286	26	111	440	59

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.94	0.93
Entry Flow Rate [veh/h]	521	364	564	656
Capacity of Entry and Bypass Lanes [veh/h]	701	684	901	828
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	686	673	846	771
X, volume / capacity	0.74	0.53	0.63	0.79

Movement, Approach, & Intersection Results

Lane LOS	C	B	B	C
95th-Percentile Queue Length [veh]	6.65	3.16	4.50	8.12
95th-Percentile Queue Length [ft]	166.32	78.99	112.61	202.93
Approach Delay [s/veh]	22.54	13.94	14.23	23.90
Approach LOS	C	B	B	C
Intersection Delay [s/veh]	19.23			
Intersection LOS	C			

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Intersection Level Of Service Report
Intersection 2: N Pine Street at W Barclay Drive

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):	0.327

Intersection Setup

Name												
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	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			20.00			20.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	76	9	33	20	21	20	3	177	30	27	191	2
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 [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.70	7.00	0.70	0.00	0.00	0.00
Growth 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
In-Process Volume [veh/h]	7	0	0	0	0	0	0	86	13	0	56	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
Total Hourly Volume [veh/h]	83	9	33	20	21	20	3	263	43	27	247	2
Peak Hour Factor	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400
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]	25	3	10	6	6	6	1	78	13	8	74	1
Total Analysis Volume [veh/h]	99	11	39	24	25	24	4	313	51	32	294	2
Pedestrian Volume [ped/h]	0			0			0			2		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.33	0.03	0.06	0.08	0.07	0.03	0.00	0.00	0.00	0.03	0.00	0.00
d_M, Delay for Movement [s/veh]	23.78	22.18	16.99	18.91	17.69	11.86	7.84	0.00	0.00	8.07	0.00	0.00
Movement LOS	C	C	C	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.97	1.97	1.97	0.67	0.67	0.67	0.01	0.01	0.01	0.08	0.08	0.08
95th-Percentile Queue Length [ft/ln]	49.29	49.29	49.29	16.73	16.73	16.73	0.24	0.24	0.24	2.04	2.04	2.04
d_A, Approach Delay [s/veh]	21.89			16.18			0.09			0.79		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	5.15											
Intersection LOS	C											

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Intersection Level Of Service Report
Intersection 3: N Locust Street at W Barclay Drive

Control Type:	Two-way stop	Delay (sec / veh):	21.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.373

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	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]	25.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		No	

Volumes

Name						
Base Volume Input [veh/h]	130	132	133	59	117	142
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.70	2.00	2.00	2.00	2.00	0.60
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	48	0	0	9	14	71
Site-Generated Trips [veh/h]	0	0	0	0	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]	178	132	133	68	131	213
Peak Hour Factor	0.9300	1.0000	1.0000	1.0000	1.0000	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	48	33	33	17	33	57
Total Analysis Volume [veh/h]	191	132	133	68	131	229
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Stop	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	0.00	0.00	0.37	0.09	0.10	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	21.91	16.42	8.06	0.00
Movement LOS	A	A	C	C	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	2.36	2.36	0.33	0.33
95th-Percentile Queue Length [ft/ln]	0.00	0.00	59.09	59.09	8.33	8.33
d_A, Approach Delay [s/veh]	0.00		20.05		2.93	
Approach LOS	A		C		A	
d_I, Intersection Delay [s/veh]	5.75					
Intersection LOS	C					

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Intersection Level Of Service Report
Intersection 4: US 20 at W Hood Avenue

Control Type:	Two-way stop	Delay (sec / veh):	58.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.390

Intersection Setup

Name						
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	200.00	100.00	100.00	100.00
Speed [mph]	30.00		35.00		20.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name						
Base Volume Input [veh/h]	23	23	130	447	500	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	3.90	3.90	5.60	5.60
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	14	19	18	58	38	10
Site-Generated Trips [veh/h]	0	0	0	0	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]	37	42	148	505	538	34
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	12	42	142	151	10
Total Analysis Volume [veh/h]	42	47	166	567	604	38
Pedestrian Volume [ped/h]	2		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
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	0.39	0.10	0.18	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	58.37	13.17	9.71	0.00	0.00	0.00
Movement LOS	F	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.60	0.32	0.65	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	40.12	7.96	16.18	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	34.50		2.20		0.00	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	3.20					
Intersection LOS	F					

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Intersection Level Of Service Report
Intersection 5: Pine Street at US 20

Control Type:	Two-way stop	Delay (sec / veh):	826.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.632

Intersection Setup

Name												
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	0	0	0	0	0	1	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			20.00			20.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	30	23	41	17	29	83	68	699	41	52	481	21
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 [%]	0.00	0.00	0.00	0.00	0.00	0.00	3.50	3.50	3.50	5.50	5.50	5.50
Growth 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
In-Process Volume [veh/h]	2	7	0	0	13	0	0	55	2	0	74	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
Total Hourly Volume [veh/h]	32	30	41	17	42	83	68	754	43	52	555	21
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
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]	9	8	11	5	12	23	19	207	12	14	152	6
Total Analysis Volume [veh/h]	35	33	45	19	46	91	75	829	47	57	610	23
Pedestrian Volume [ped/h]	5			2			2			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	1.63	0.46	0.13	0.58	0.65	0.19	0.08	0.01	0.00	0.08	0.01	0.00
d_M, Delay for Movement [s/veh]	826.11	707.92	668.31	368.41	308.20	14.10	9.17	0.00	0.00	10.20	0.00	0.00
Movement LOS	F	F	F	F	F	B	A	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	11.44	11.44	11.44	5.75	5.75	0.68	0.26	0.00	0.00	0.25	0.00	0.00
95th-Percentile Queue Length [ft/ln]	286.11	286.11	286.11	143.87	143.87	17.03	6.49	0.00	0.00	6.16	0.00	0.00
d_A, Approach Delay [s/veh]	728.75			143.97			0.72			0.84		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	55.54											
Intersection LOS	F											

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Intersection Level Of Service Report
Intersection 6: Locust Street at US 20

Control Type:	Roundabout	Delay (sec / veh):	59.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes		

Intersection Setup

Name												
Approach	Northbound			Southbound			Northwestbound			Southeastbound		
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	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			20.00			20.00			20.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	11	3	50	118	5	97	17	708	209	109	958	9
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 [%]	0.00	0.00	0.00	2.10	2.10	2.10	5.60	5.60	5.60	3.90	3.90	3.90
Growth 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
In-Process Volume [veh/h]	0	0	0	57	0	0	0	63	51	9	41	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
Total Hourly Volume [veh/h]	11	3	50	175	5	97	17	771	260	118	999	9
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
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]	3	1	13	47	1	26	5	205	69	31	266	2
Total Analysis Volume [veh/h]	12	3	53	186	5	103	18	820	277	126	1063	10
Pedestrian Volume [ped/h]	0			0			0			3		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	1425			897			146			214		
Exiting Flow Rate [veh/h]	35			426			1347			983		
Demand Flow Rate [veh/h]	11	3	50	175	5	97	17	771	260	118	999	9
Adjusted Demand Flow Rate [veh/h]	12	3	53	186	5	103	18	820	277	126	1063	10

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	1.00	0.98	0.95	0.96
Entry Flow Rate [veh/h]	68	301	1178	1246
Capacity of Entry and Bypass Lanes [veh/h]	323	553	1190	1110
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	323	542	1127	1068
X, volume / capacity	0.21	0.54	0.99	1.12

Movement, Approach, & Intersection Results

Lane LOS	C	C	F	F
95th-Percentile Queue Length [veh]	0.78	3.23	19.77	30.98
95th-Percentile Queue Length [ft]	19.56	80.70	494.15	774.47
Approach Delay [s/veh]	15.18	16.98	43.74	85.90
Approach LOS	C	C	F	F
Intersection Delay [s/veh]	58.96			
Intersection LOS	F			

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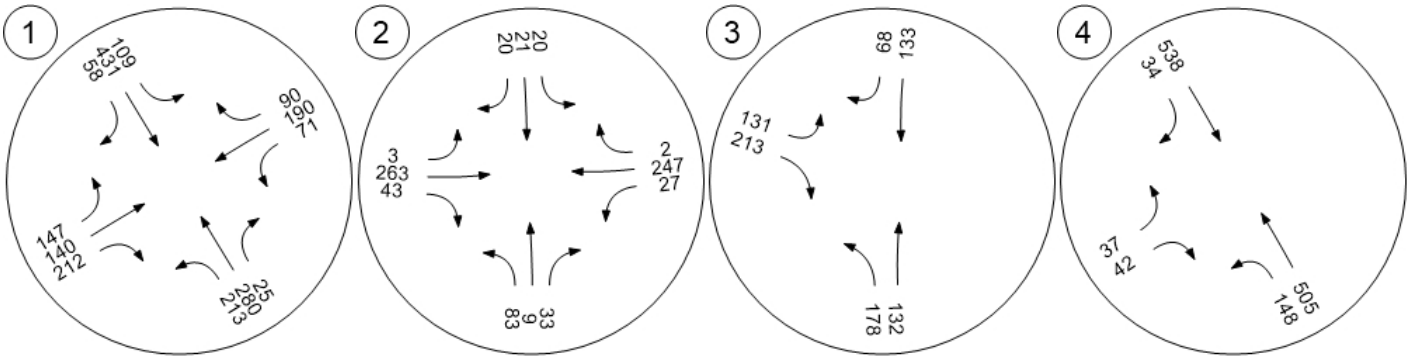
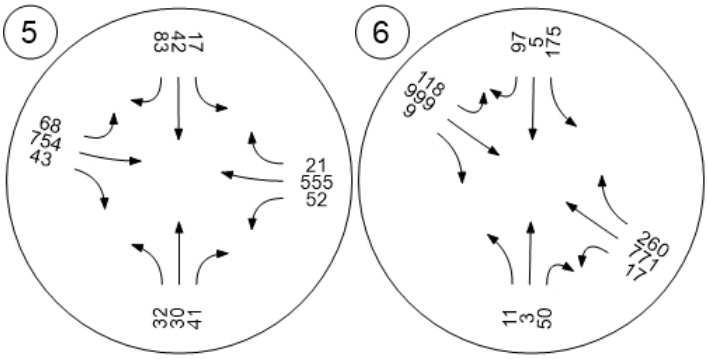
Traffic Volume - Future Background Volume





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Report File: Z:\...\2040 Planning Horizon + ZC 113 trips.pdf

Scenario 5 5 5 2040 Planning Horizon + ZC Volumes
7/6/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	US 20 at W Barclay Drive	Roundabout	HCM 6th Edition	SEB Thru		20.2	C
2	N Pine Street at W Barclay Drive	Two-way stop	HCM 6th Edition	NB Left	0.357	26.6	D
3	N Locust Street at W Barclay Drive	Two-way stop	HCM 6th Edition	SB Thru	0.392	23.4	C
4	US 20 at W Hood Avenue	Two-way stop	HCM 6th Edition	NEB Left	0.507	86.5	F
5	Pine Street at US 20	Two-way stop	HCM 6th Edition	NB Left	1.899	1,062.7	F
6	Locust Street at US 20	Roundabout	HCM 6th Edition	SEB Thru		62.9	F
7	Site Access at W Barclay Drive	Two-way stop	HCM 6th Edition	NWB Left	0.011	8.8	A
8	Site Access at N Pine Street	Two-way stop	HCM 6th Edition	EB Thru	0.002	9.5	A

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.

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Intersection Level Of Service Report
Intersection 1: US 20 at W Barclay Drive

Control Type:	Roundabout	Delay (sec / veh):	20.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes		

Intersection Setup

Name												
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
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	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	132	120	171	47	164	77	152	280	14	102	428	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 [%]	2.20	2.20	2.20	1.60	1.60	1.60	6.50	6.50	0.00	7.40	7.40	7.40
Growth 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
In-Process Volume [veh/h]	15	20	41	24	26	13	61	0	11	7	3	19
Site-Generated Trips [veh/h]	0	8	0	3	4	4	0	0	0	8	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
Total Hourly Volume [veh/h]	147	148	212	74	194	94	213	280	25	117	431	58
Peak Hour Factor	0.9800	0.9800	0.9800	1.0000	0.9800	0.9800	0.9800	0.9800	1.0000	0.9800	0.9800	0.9800
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]	38	38	54	19	49	24	54	71	6	30	110	15
Total Analysis Volume [veh/h]	150	151	216	74	198	96	217	286	25	119	440	59
Pedestrian Volume [ped/h]	0			0			1			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	676			689			435			507		
Exiting Flow Rate [veh/h]	496			307			768			555		
Demand Flow Rate [veh/h]	147	148	212	74	194	94	213	280	25	117	431	58
Adjusted Demand Flow Rate [veh/h]	150	151	216	74	198	96	217	286	25	119	440	59

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.94	0.93
Entry Flow Rate [veh/h]	529	374	561	664
Capacity of Entry and Bypass Lanes [veh/h]	693	684	886	823
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	678	673	834	766
X, volume / capacity	0.76	0.55	0.63	0.81

Movement, Approach, & Intersection Results

Lane LOS	C	B	B	D
95th-Percentile Queue Length [veh]	7.12	3.33	4.62	8.57
95th-Percentile Queue Length [ft]	177.98	83.31	115.60	214.28
Approach Delay [s/veh]	24.09	14.36	14.64	25.26
Approach LOS	C	B	B	D
Intersection Delay [s/veh]	20.23			
Intersection LOS	C			

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Intersection Level Of Service Report
Intersection 2: N Pine Street at W Barclay Drive

Control Type:	Two-way stop	Delay (sec / veh):	26.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.357

Intersection Setup

Name												
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	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			20.00			20.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	76	9	33	20	21	20	3	177	30	27	191	2
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 [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.70	0.70	0.00	0.00	0.00
Growth 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
In-Process Volume [veh/h]	7	0	0	0	0	0	0	86	13	0	56	0
Site-Generated Trips [veh/h]	0	1	7	0	2	2	1	7	0	6	14	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
Total Hourly Volume [veh/h]	83	10	40	20	23	22	4	270	43	33	261	2
Peak Hour Factor	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400
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]	25	3	12	6	7	7	1	80	13	10	78	1
Total Analysis Volume [veh/h]	99	12	48	24	27	26	5	321	51	39	311	2
Pedestrian Volume [ped/h]	0			0			0			2		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.36	0.04	0.07	0.09	0.08	0.04	0.00	0.00	0.00	0.03	0.00	0.00
d_M, Delay for Movement [s/veh]	26.63	24.63	18.82	20.58	18.85	12.43	7.88	0.00	0.00	8.11	0.00	0.00
Movement LOS	D	C	C	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	2.34	2.34	2.34	0.77	0.77	0.77	0.01	0.01	0.01	0.10	0.10	0.10
95th-Percentile Queue Length [ft/ln]	58.46	58.46	58.46	19.23	19.23	19.23	0.30	0.30	0.30	2.52	2.52	2.52
d_A, Approach Delay [s/veh]	24.12			17.22			0.10			0.90		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	5.72											
Intersection LOS	D											

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Intersection Level Of Service Report
Intersection 3: N Locust Street at W Barclay Drive

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):	0.392

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	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]	25.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		No	

Volumes

Name						
Base Volume Input [veh/h]	130	132	133	59	117	142
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.70	2.00	2.00	2.00	2.00	0.60
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	48	0	0	9	14	71
Site-Generated Trips [veh/h]	16	0	0	4	2	12
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]	194	132	133	72	133	225
Peak Hour Factor	0.9300	1.0000	1.0000	1.0000	1.0000	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	33	33	18	33	60
Total Analysis Volume [veh/h]	209	132	133	72	133	242
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Stop	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	0.00	0.00	0.39	0.09	0.10	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	23.40	17.51	8.12	0.00
Movement LOS	A	A	C	C	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	2.59	2.59	0.34	0.34
95th-Percentile Queue Length [ft/ln]	0.00	0.00	64.70	64.70	8.62	8.62
d_A, Approach Delay [s/veh]	0.00		21.33		2.88	
Approach LOS	A		C		A	
d_I, Intersection Delay [s/veh]	5.92					
Intersection LOS	C					

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Intersection Level Of Service Report
Intersection 4: US 20 at W Hood Avenue

Control Type:	Two-way stop	Delay (sec / veh):	86.5
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.507

Intersection Setup

Name												
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
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	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	200.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			20.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	23	0	23	0	0	0	130	447	0	0	500	24
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 [%]	0.00	2.00	0.00	2.00	2.00	0.00	3.90	3.90	3.90	2.00	5.60	5.60
Growth 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
In-Process Volume [veh/h]	14	0	19	0	0	0	18	58	0	0	38	10
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	8	0	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
Total Hourly Volume [veh/h]	37	0	42	0	0	0	148	505	8	0	541	34
Peak Hour Factor	0.8900	1.0000	0.8900	1.0000	1.0000	0.8900	0.8900	0.8900	0.8900	1.0000	0.8900	0.8900
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]	10	0	12	0	0	0	42	142	2	0	152	10
Total Analysis Volume [veh/h]	42	0	47	0	0	0	166	567	9	0	608	38
Pedestrian Volume [ped/h]	2			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.51	0.00	0.10	0.00	0.00	0.00	0.18	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	86.49	0.00	13.22	0.00	0.00	11.87	9.73	0.00	0.00	0.00	0.00	0.00
Movement LOS	F		B			B	A	A	A		A	A
95th-Percentile Queue Length [veh/ln]	2.16	0.00	0.32	0.00	0.00	0.00	0.65	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	54.11	0.00	8.00	0.00	0.00	0.00	16.25	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	47.80			11.87			2.18			0.00		
Approach LOS	E			B			A			A		
d_I, Intersection Delay [s/veh]	3.97											
Intersection LOS	F											

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Intersection Level Of Service Report
Intersection 5: Pine Street at US 20

Control Type:	Two-way stop	Delay (sec / veh):	1,062.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.899

Intersection Setup

Name												
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	0	0	0	0	0	1	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			20.00			20.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	30	23	41	17	29	83	68	699	41	52	481	21
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 [%]	0.00	0.00	0.00	0.00	0.00	0.00	3.50	3.50	3.50	5.50	5.50	5.50
Growth 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
In-Process Volume [veh/h]	2	7	0	0	13	0	0	55	2	0	74	0
Site-Generated Trips [veh/h]	0	12	0	0	3	0	0	0	3	0	8	8
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
Total Hourly Volume [veh/h]	32	42	41	17	45	83	68	754	46	52	563	29
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
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]	9	12	11	5	12	23	19	207	13	14	155	8
Total Analysis Volume [veh/h]	35	46	45	19	49	91	75	829	51	57	619	32
Pedestrian Volume [ped/h]	5			2			2			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	1.90	0.65	0.13	0.82	0.71	0.19	0.08	0.01	0.00	0.08	0.01	0.00
d_M, Delay for Movement [s/veh]	1062.68	918.57	877.47	540.38	437.47	14.30	9.24	0.00	0.00	10.22	0.00	0.00
Movement LOS	F	F	F	F	F	B	A	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	13.40	13.40	13.40	6.72	6.72	0.70	0.26	0.00	0.00	0.25	0.00	0.00
95th-Percentile Queue Length [ft/ln]	334.93	334.93	334.93	167.90	167.90	17.40	6.60	0.00	0.00	6.18	0.00	0.00
d_A, Approach Delay [s/veh]	943.92			207.58			0.73			0.82		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	78.65											
Intersection LOS	F											

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Intersection Level Of Service Report
Intersection 6: Locust Street at US 20

Control Type:	Roundabout	Delay (sec / veh):	62.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes		

Intersection Setup

Name												
Approach	Northbound			Southbound			Northwestbound			Southeastbound		
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	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			20.00			20.00			20.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	11	3	50	118	5	97	17	708	209	109	958	9
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 [%]	0.00	0.00	0.00	2.10	2.10	2.10	5.60	5.60	5.60	3.90	3.90	3.90
Growth 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
In-Process Volume [veh/h]	0	0	0	57	0	0	0	63	51	9	41	0
Site-Generated Trips [veh/h]	0	0	0	8	0	0	0	15	8	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
Total Hourly Volume [veh/h]	11	3	50	183	5	97	17	786	268	118	999	9
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
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]	3	1	13	49	1	26	5	209	71	31	266	2
Total Analysis Volume [veh/h]	12	3	53	195	5	103	18	836	285	126	1063	10
Pedestrian Volume [ped/h]	0			0			0			3		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	1434			914			146			223		
Exiting Flow Rate [veh/h]	35			435			1357			1000		
Demand Flow Rate [veh/h]	11	3	50	183	5	97	17	786	268	118	999	9
Adjusted Demand Flow Rate [veh/h]	12	3	53	195	5	103	18	836	285	126	1063	10

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	1.00	0.98	0.95	0.96
Entry Flow Rate [veh/h]	68	310	1203	1246
Capacity of Entry and Bypass Lanes [veh/h]	320	544	1190	1100
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	320	533	1127	1058
X, volume / capacity	0.21	0.57	1.01	1.13

Movement, Approach, & Intersection Results

Lane LOS	C	C	F	F
95th-Percentile Queue Length [veh]	0.79	3.53	21.49	31.83
95th-Percentile Queue Length [ft]	19.78	88.28	537.22	795.84
Approach Delay [s/veh]	15.35	18.18	49.01	90.00
Approach LOS	C	C	F	F
Intersection Delay [s/veh]	62.86			
Intersection LOS	F			

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Intersection Level Of Service Report
Intersection 7: Site Access at W Barclay Drive

Control Type:	Two-way stop	Delay (sec / veh):	8.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.011

Intersection Setup

Name						
Approach	Northeastbound		Southwestbound		Northwestbound	
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]	20.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	16	16	0	11	8
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]	0	16	16	0	11	8
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	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]	0	4	4	0	3	2
Total Analysis Volume [veh/h]	0	16	16	0	11	8
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	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.27	0.00	8.81	8.42
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.03	0.03	0.06	0.06
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.76	0.76	1.44	1.44
d_A, Approach Delay [s/veh]	0.00		7.27		8.65	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	5.50					
Intersection LOS	A					

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Intersection Level Of Service Report
Intersection 8: Site Access at N Pine Street

Control Type:	Two-way stop	Delay (sec / veh):	9.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name												
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	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	28	0	0	0	0	8	8	2	7	0	4	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
Total Hourly Volume [veh/h]	28	0	0	0	0	8	8	2	7	0	4	0
Peak Hour 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
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]	7	0	0	0	0	2	2	1	2	0	1	0
Total Analysis Volume [veh/h]	28	0	0	0	0	8	8	2	7	0	4	0
Pedestrian Volume [ped/h]	0			0			0			0		

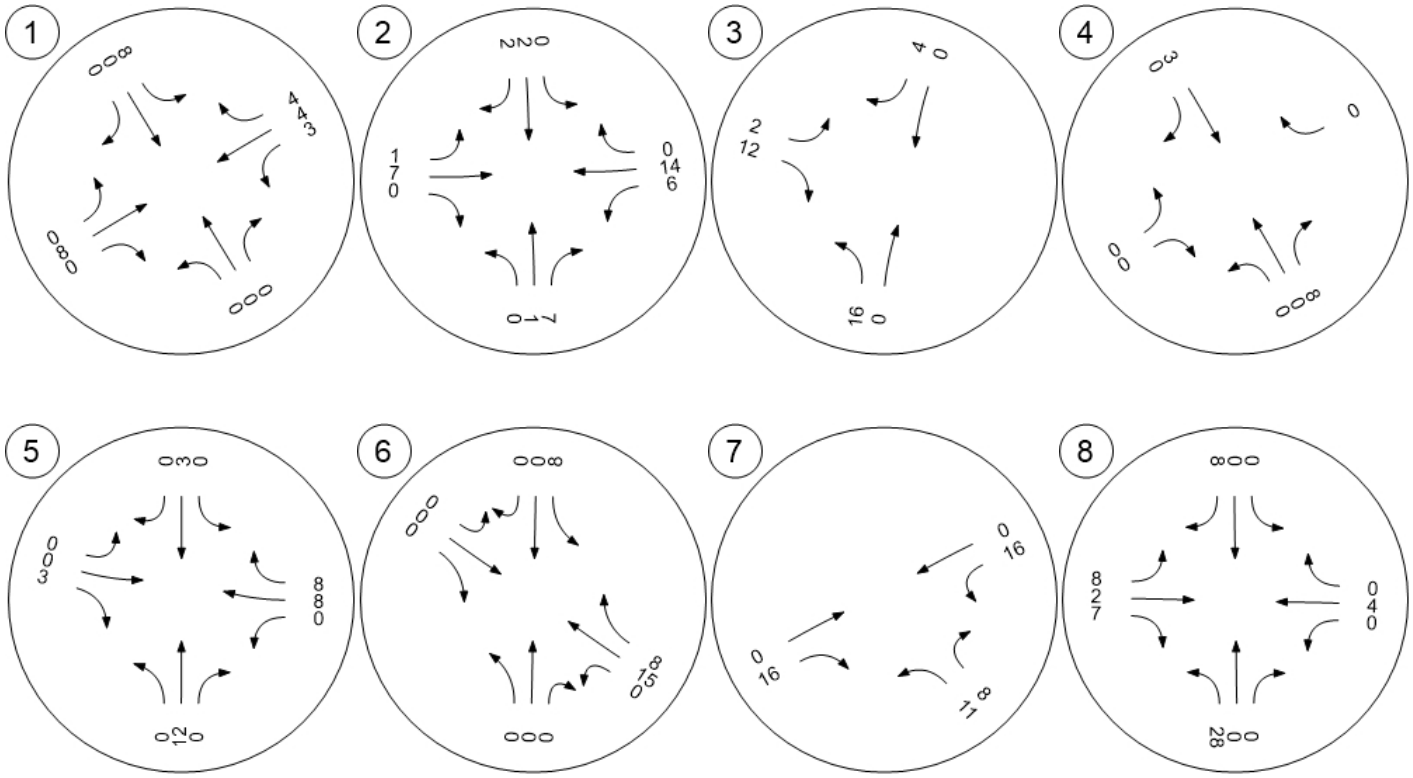
Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	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	0.01	0.00	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.27	0.00	0.00	7.22	0.00	0.00	8.99	9.48	8.40	8.98	9.45	8.34
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.05	0.00	0.00	0.00	0.05	0.05	0.05	0.01	0.01	0.01
95th-Percentile Queue Length [ft/ln]	1.33	1.33	1.33	0.00	0.00	0.00	1.35	1.35	1.35	0.37	0.37	0.37
d_A, Approach Delay [s/veh]	7.27			0.00			8.81			9.45		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	6.86											
Intersection LOS	A											

Traffic Volume - Net New Site Trips



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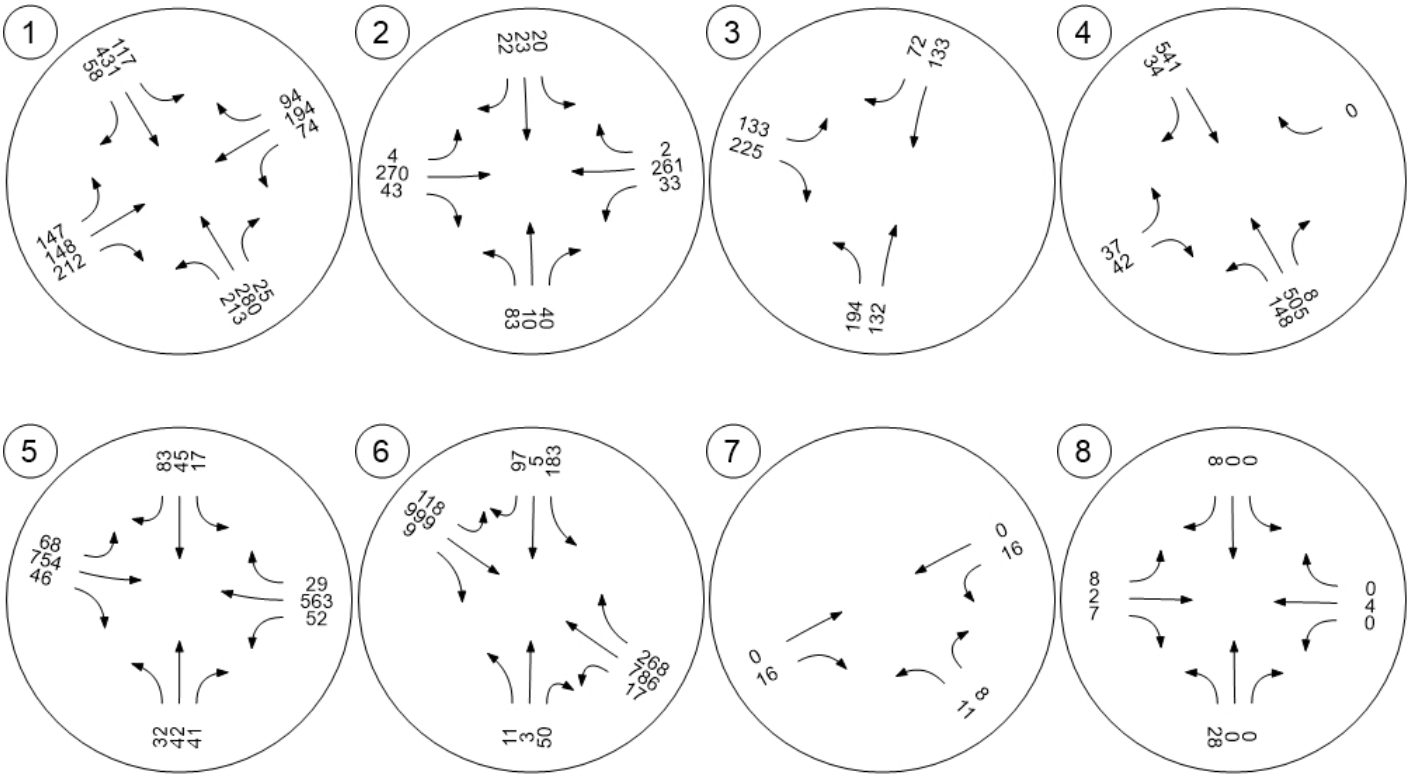
Traffic Volume - Future Total Volume



Sisters Woodlands

7/13/20 - Lancaster Mobley

	Comment By	Page	Comment	Response
1	ODOT	11	The TIS uses existing trips from the model run in 2010 (to support the TSP). The TIS should compare the existing ITE Trip rates, based on existing land use potential, draw a comparison to that vs. what was pulled from the model. This could impact the remaining analysis, but it's likely the ITE trip rate for existing is higher than what was in the model so it may just be a check-point for proceeding as-is.	This exercise was performed. Based on permitted land uses in the PF district, high trip generating land uses include a library or college/university. Given that the site is 32 acres, it is likely that either of these land uses would generate more existing trips than that existing trips used from the model. As a result, the existing trips from the model were used.
2	ODOT	14	A trip cap (+10% of TIS Trip Generation?) may be appropriate to verify impacts are mitigated based on this site plan and future site plan that actually gets developed.	A trip cap is not recommended, as trip generation was based on a reasonable "worst-case" development scenario.
3	ODOT	31	How does the development propose to mitigate the impacts at US 20/Pine Street?	*Proportional Share Mitigation Assessment* section updated to match methodology of a prior project. Diverting traffic from US Highway 20 onto the Barclay-Locust alternate route corridor will provide the mecessary mitigation to avoice significant impact to cited highway intersections. Updated proportional share contribution will be applied to the Barclay-Locust Alternate Route.
4	City Traffic Engineer	12	Trip generation analysis should be revised to proportionately consider the individual acreage of developable PF lands within each parcel. Considering only the PF zoned lands, the subject property is approximately 78% of the "South Barclay Parcel" and so would only have been assigned 243 of the 312 weekday PM peak hour trips. This would then increase the impact of the rezone from 44 weekday PM peak hour trips that were assessed to instead review 113 weekday PM peak hour trips.	Agreed. The change was made to the trip generation calculations shown in Table 3.

DKS *Associates*

TRANSPORTATION SOLUTIONS

MEMORANDUM

REGISTERED PROFESSIONAL ENGINEER 63,019 OREGON JANUARY 11, 2005 C. S. MACIEJEWSKI

EXPIRES: 12/31/12

DATE: January 27, 2011

TO: Tom Litster, Otak
Matt Crall, DLCD

FROM: Chris Maciejewski, P.E.
Garth Appanaitis

SUBJECT: **City of Sisters USFS Property Redevelopment – Revised Draft Redevelopment Plan Traffic Impact Analysis** P10115-000

The purpose of this memorandum is to summarize the potential transportation impacts of rezoning and developing the United States Forest Service (USFS) site in Sisters. A land use and trip generation summary of two redevelopment scenarios and year 2030 traffic analysis for the "worst case" (highest site trip generation scenario) and Existing Zoning scenario are provided.

Existing Conditions and Adopted Functional Plans

The *Sisters Transportation System Plan (TSP)*[1] documents the existing transportation system and functional plans for Sisters. The following subsections summarize the functional class of roadways adjacent to the site, existing conditions of selected intersections, and functional plans for the site area. Additional detail is available in the TSP.

Existing Conditions

Highway 20 and Barclay Drive are two arterial facilities that are located along the proposed USFS site. Arterials are intended to be low-access facilities that provide mobility for traffic traveling through the city. The City of Sisters requires a minimum of 660 feet spacing between public intersections along arterials (and 330 feet between public intersections and driveways), while ODOT requires 720 feet on Highway 20 along the site frontage. While Highway 20 has historically been the primary route through the city, the TSP includes improvements along Barclay Drive that would improve mobility as an alternate route to avoid seasonal congestion in the downtown area. The proposed site also shares frontage with Pine Street, a collector facility that provides connections between the high mobility (arterial) facilities and local/neighborhood streets.

The existing intersection operations of study area intersections are listed in Table 1. Two intersections along Highway 20 (at Barclay Drive and at Pine Street) are currently over capacity

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[1] *Sisters Transportation System Plan*, prepared by DKS Associates, January 2010.

and do not meet the mobility standards. Future improvements (as planned in the TSP) will be needed to improve traffic operations at these locations to support additional growth.

Table 1: 2006 PM Peak Hour Intersection Operations (Existing Conditions Scenario)

Intersection	Jurisdiction	TEV	Mobility Standard*	Delay	LOS	V/C
Highway 20 / Barclay Drive	ODOT	1,715	0.70/0.80	>50	A/F	**0.06/>1.0**
Highway 20 / Hood Avenue	ODOT	1,505	0.80/0.90	40.4	B/E	0.11/0.42
Highway 20 / Pine Street	ODOT	1,730	0.80/0.90	>50	A/F	**0.10/>1.0**
Adams Avenue / Barclay Drive	City of Sisters		0.90	*Not*	*In*	*TSP*
Pine Street/Barclay Drive	City of Sisters	370	0.90	10.5	A/B	0.12
Pine Street/Sisters Peak Drive	City of Sisters			*Not*	*In*	*TSP*
Pine Street / Main Avenue	City of Sisters			*Not*	*In*	*TSP*

Signalized Intersection:
Delay = Average Intersection Delay (sec.)
LOS = Level of Service
V/C = Volume to Capacity Ratio
Shaded values do not meet standards

TEV= Total Entering Vehicles (PM peak hr)

Unsignalized Intersection:
Delay = Critical Movement Approach Delay (sec.)
LOS = Major Street LOS / Minor Street LOS
V/C = Critical Movement Volume-to-Capacity Ratio
Shaded values do not meet standards
*Major/Minor movements for ODOT mobility std

Future Functional Plans

The TSP includes future plans for pedestrian, bicycle and motor vehicle connections and improvements in Sisters. These plans are attached.

The TSP (Figure 5-1 attached) shows a shared use path that would cross the proposed USFS site for pedestrian and bicycle trips. In addition, sidewalks are planned along Highway 20 and a shared path is also planned along the Pine Street frontage. To accommodate bicycle travel, bicycle lanes are planned for both sides of Pine Street along the project frontage (Figure 6-1). The facilities would support pedestrian and/or bicycle travel in and around the proposed site.

Figure 7-5 (attached) shows potential local street connections within the site for future development. The TSP includes a potential connection to Barclay Drive and three potential connections to Pine Street (at Sisters Park Drive, Adams Avenue and Main Avenue).

2030 Existing Zoning Conditions

This section summarizes the year 2030 existing zoning land use included for the project site in the *TSP*, as well as traffic operations at intersections in the vicinity of the USFS site.

Existing Zoning Land Use

The USFS site is composed of three parcels of land that are currently zoned as Public Facility (PF), Landscape Management (LM), and Urban Area Reserve (UAR). The City of Sisters TSP

assumed development through year 2030 based on the comprehensive plan zoning of each parcel inside the urban growth boundary (UGB). During the TSP process, City staff provided direct input on the land use to assume for the South Barclay Parcel of the USFS site, as the Comprehensive Plan maps and text were not consistent. The resulting land use for the three USFS parcels used during the TSP is listed in Table 2.

Table 2: Assumed 2030 Land Use in City of Sisters TSP (Existing Zoning Baseline Scenario)

Parcel Description	Households (# of homes)	Employment (# of employees)			
		Retail	Service	Other	Total
South Barclay Parcel	0	60	25	5	90
East Portal Parcel	0	0	0	0	0
North Barclay Parcel	0	0	0	0	0
TOTAL	**0**	**60**	**25**	**5**	**90**

Land use for other areas of the City was adjusted from the amounts reported in the City of Sisters TSP to reflect in-process developments based on a request from ODOT Region 4 staff. The adjusted land use allocation (which included increasing household growth in TAZ 16) is included in the Appendix.

Existing Zoning Traffic Conditions

Traffic volumes for the 2030 existing zoning land use and the reasonably likely to be funded transportation system were projected using the Sisters Forecast Tool (as documented in the project methodology memorandum). While the traffic volumes and operations for the majority of these locations were previously documented in the *City of Sisters Transportation System Plan (TSP*), traffic volumes would shift due to transportation network differences (i.e., only projects deemed "reasonably likely to be funded" by each agency were included) and adjustments to future land use assumptions to account for in-process developments[2]. Based on the funding evaluation provided in the Sisters TSP, the projects that were included as reasonably likely for this effort are listed in Table 3.

The updated volumes for each intersection are included in the Appendix.

[2] Email from David Boyd, ODOT Region 4, September, 23, 2010.

Table 3: Transportation Projects Assumed to be Funded by 2030

Project Location	Description	Reasonably Likely Funding Source	
		City of Sisters	ODOT
Creekside Court to Cascade Avenue	New bridge connecting Creekside Court to Cascade Avenue at eastern edge of City	X	
Rail Way to Trinity Way	New connection between Rail Way and Trinity Way in western portion of City	X	
Hwy 20/Barclay Dr	Install multi-lane roundabout or traffic signal (including additional lanes at intersection as documented in TSP)	X	X
Hwy 20/Locust St	Install multi-lane roundabout or traffic signal, close south leg	X	X
Hwy 20/Pine St	Install eastbound and westbound left-turn lanes, restrict northbound and southbound approaches to right turns	X	
Hwy 20/Oak St	Install northbound and southbound right-turn lanes	X	
Barclay Dr/Locust St	Construct single-lane roundabout with a diameter large enough for conversion to a multi-lane roundabout if needed	X	
Barclay Dr from Hwy 20 to Locust St, Locust St from Barclay Dr to Hwy 20	Widen to 3 lane arterial section, smooth curvature, adjust driveways, install a landscape buffer (including street trees) on Locust to screen fronting homes	X	
E. Cascade from Locust St to Rope St, Timber Creek from E. Cascade to Timber Pine, Rope St from E. Cascade to Timber Pine Dr, Timber Pine Dr from Rope S to Hwy 126	Implement traffic calming measures to manage vehicle speeds and cut-through traffic	X	

Traffic operations were analyzed at the six identified existing study intersection locations using the updated 2030 Existing Zoning traffic volumes and roadway network, as summarized in Table 4. While the majority of the intersections would operate adequately in 2030 under existing zoning, one intersection along Highway 20 would not meet mobility standards. The Highway 20/ Barclay Drive intersection would exceed the volume to capacity mobility standard, even assuming that a new traffic signal is constructed along with additional lanes.

Table 4: 2030 PM Peak Hour Intersection Operations (Existing Zoning Baseline Scenario)

Intersection	Jurisdiction	TEV	Mobility Standard*	Delay	LOS	V/C
Highway 20 / Barclay Drive	ODOT	3,155	0.70	37.8	D	**0.95**
Highway 20 / Hood Avenue	ODOT	1,575	0.80/0.90	96.4	B/F	0.41/0.77
Highway 20 / Pine Street	ODOT	1,855	0.80/0.90	21.2	B/C	0.47/0.54
Adams Avenue / Barclay Drive	City of Sisters	1,780	0.90	*Not included in the network in this scenario*		
Pine Street/Barclay Drive	City of Sisters	1,880	0.90	74.7	B/F	0.61
Pine Street/Sisters Peak Drive*	City of Sisters	330	0.90	10.2	A/B	0.07
Pine Street / Main Avenue*	City of Sisters	705	0.90	17.2	A/C	0.45

Signalized Intersection:
Delay = Average Intersection Delay (sec.)
LOS = Level of Service
V/C = Volume to Capacity Ratio
Shaded values do not meet standards

TEV= Total Entering Vehicles (PM peak hr)

Unsignalized Intersection:
Delay = Critical Movement Approach Delay (sec.)
LOS = Major Street LOS / Minor Street LOS
V/C = Critical Movement Volume-to-Capacity Ratio
Shaded values do not meet standards
*Major/Minor movements for ODOT mobility std

**Operations approximated using raw forecast volumes balanced with post-processed study area intersections.*

USFS Proposed Rezone Impacts

As noted in the analysis of the existing zoning, the intersection of Highway 20/ Barclay Drive would not meet mobility standards in 2030 with the existing zoning. Therefore, this intersection would require improvements if significant impact (a volume-to-capacity ratio increase of 0.01 or more) were to be added by the potential rezone of the USFS site. Other locations would require mitigation if the proposed rezone increased congestion above the mobility standard. The following sub-sections describe the potential impacts from the proposed rezone and development of the USFS area.

Assumed Rezone Land Use and Trip Generation

The year 2030 land use assumed in the TSP (Table 2) represents the existing zoning scenario (i.e., what the proposed rezone scenarios will be compared to). Land use for the proposed rezone of the USFS parcels was based on a reasonable worst case of development given the proposed zoning and a combination of land uses considered to be a representative mix of what may be developed on the site considering the site location. Two development options have been provided that represent different compositions of land uses within the site. These two options (Option A and Option B) are shown in Figure 1 and Figure 2, respectively.

Figure 1: Development Summary – Option A

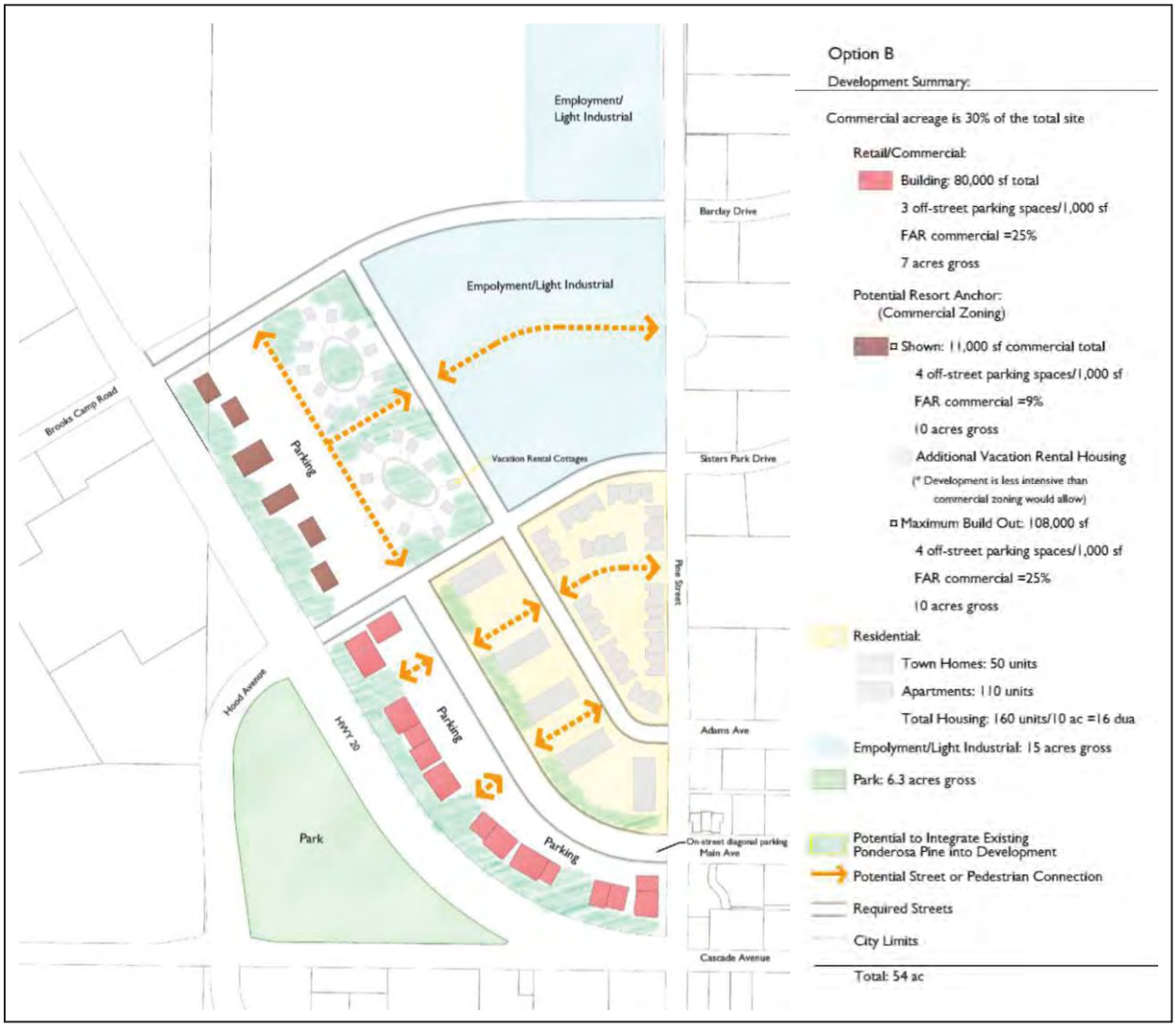


Figure 2: Development Summary – Option B

The development options vary both in land use and the internal transportation network. Option A extends Main Avenue to Barclay Drive, and connects Sisters Park Drive to Hood Avenue. Option A includes 140 ksf of retail/commercial use and 60 residential units, among other uses. Like Option A, Option B would connect Hood Avenue to Sisters Park Drive. However, Option B would only extend Main Avenue to Hood Avenue, while Adams Avenue would be extended to Barclay Drive. Option B has the potential for greater traffic impacts, with up to 188 ksf of retail/commercial development and 160 residential units, among other uses. Table 5 summarizes the land use intensity of each development option and compares the potential trip generation.

Table 5: Assumed 2030 USFS Land Use and PM Peak Hour Trip Generation

				Households + Employees					Trips		
Use	**Size**	**Units**	**Source***	**HH**	**RET**	**SER**	**EDU**	**OTH**	**In**	**Out**	**Total**
Option A											
Ret/Commercial	140	KSF	FCT		210				432	488	920
Residential	60	Units	FCT	60					38	22	60
Light Industrial	20	Acres	FCT					160	9	53	62
Park	6.3	Acres	ITE 411			1			1	1	2
USFS Total Trips (Option A Zoning)				**60**	**210**	**1**	**0**	**160**	**480**	**564**	**1,044**
Option B											
Ret/Commercial	188	KSF	FCT		282				581	655	1,236
Residential	160	Units	FCT	160					102	60	162
Light Industrial	15	Acres	FCT					120	7	40	47
Park	6.3	Acres	ITE 411			1			1	1	2
USFS Total Trips (Option B Zoning)				**160**	**282**	**1**	**0**	**120**	**691**	**756**	**1,447**

***Note:** FCT = Forecasting Tool Methodology

Both development options would represent an increase in households and employment from levels assumed in the City of Sisters TSP for the area (which had no households and 90 employees). As listed in Table 5, Option B (1,450 trips) would generate approximately 400 more trips than Option A (1,050 trips) during the PM peak hour. Therefore, Option B was determined to represent the reasonable worst-case scenario for this analysis. Table 6 lists the increase in site trips from the existing site zoning with the land use described in Option B.

Table 6: Assumed 2030 USFS Land Use and PM Peak Hour Trip Generation

				Land Use Totals (households and employees)					Trips		
Use	**Size**	**Units**	**Source**	**HH**	**RET**	**SER**	**EDU**	**OTH**	**In**	**Out**	**Total**
Ret/Commercial	188	KSF	FCT		282				581	655	1,236
Residential	160	Units	FCT	160					102	60	162
Light Industrial	15	Acres	FCT					120	7	40	47
Park	6.3	Acres	ITE 411			1			1	1	2
USFS Total Trips (Option B Zoning)				**160**	**282**	**1**	**0**	**120**	**691**	**756**	**1,447**
TSP Total Land Use and Trips (Existing Zoning)					60	25		5	145	167	312
Zone Change Difference				**160**	**222**	**-24**	**0**	**115**	**546**	**589**	**1,135**

While the internal transportation network varies between Option A and Option B, the primary difference in relation to the surrounding network is the access configuration along Barclay Drive. This difference in transportation network was evaluated to determine significant impact through a sensitivity test of traffic queues at the Barclay Drive approach to Highway 20, as Option A includes an access close to Highway 20 that would not meet access spacing standards. The results are described on page 12.

As land use was added to the USFS parcels for rezoning analysis, the land use growth forecasting in other parts of the City was adjusted to retain the citywide "control totals" (i.e. fixed amount of future land use by category in the city). Overall PM peak hour USFS site trips would increase from approximately 300, as assumed in the TSP, to approximately 1,450 under the initial mix of proposed land uses analyzed. However, allowing the site to develop with a mix of land uses (and retaining the assumed citywide land use control total) would reduce overall motor vehicle trips on many streets outside the USFS site since some internal trips (such as those between new households and employment) would occur on site without using external streets. In addition, to assess the greatest potential for impacts to state facilities, the assumption was made that all retail/commercial trips to/from the site would be trips to/from the major regional gateways (Highway 20, OR 242 and OR 126).

Proposed Rezone Traffic Impacts

Modifying the future land use allocations in Sisters to account for redevelopment Option B of the USFS property would result in future traffic shifts. Figure 3 shows the PM peak hour traffic volume differences that would occur due to the proposed land use scenario. Many intersections in Sisters would have reduced traffic volumes with the proposed redevelopment (shown in the figure as a green box). No state-controlled intersections are projected to increase by 50 or more vehicles per hour. Only intersections along Main Avenue (and within the USFS site) are projected to increase by 50 or more trips.

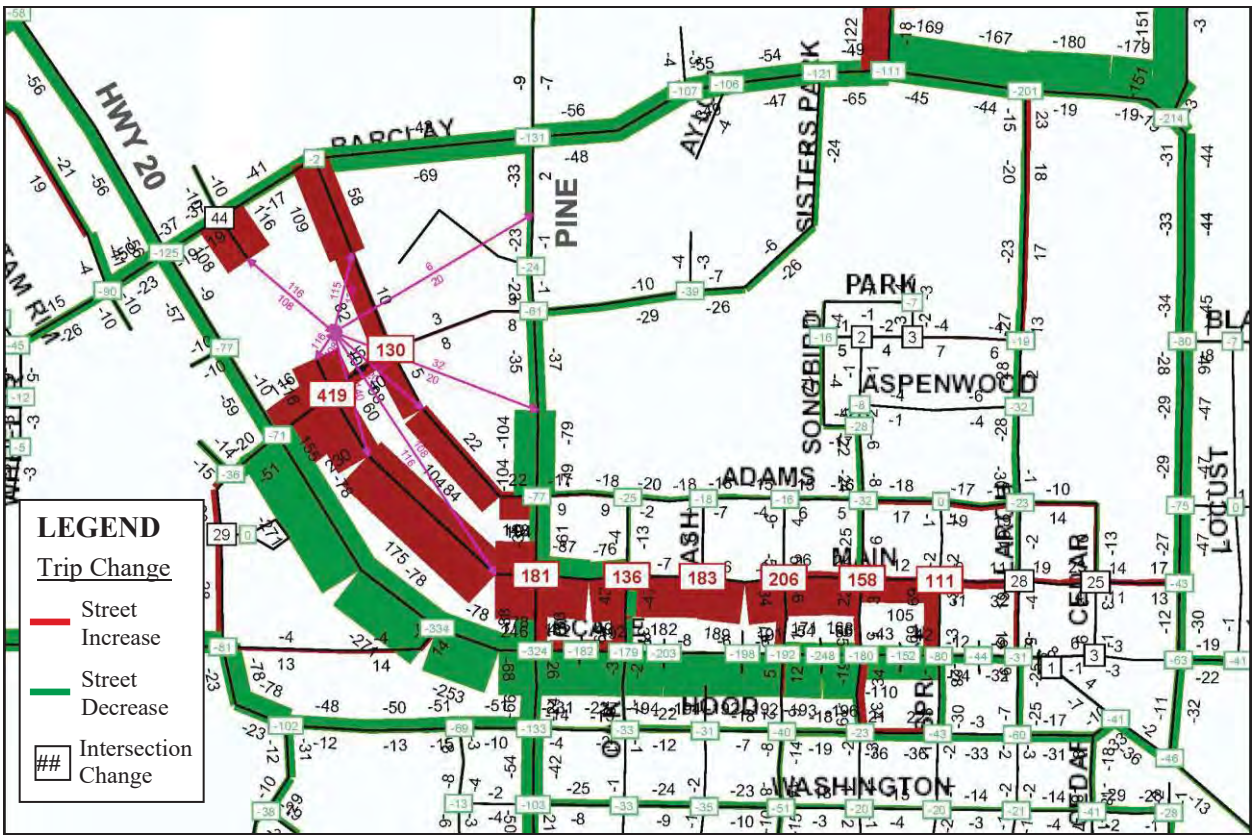


Figure 3: Trip Impacts on Streets and Intersections – Development Option B

The study intersections for impact analysis were selected as follows based on intersection jurisdiction:

- ODOT intersections – No collector/collector or above intersections within the city are projected to have an increase of 50 vehicles per hour or 300 vehicles per day. The intersections analyzed for this rezone study include the following locations based on proximity to the site (located along frontage):
    - Hwy 20/Barclay Drive
    - Hwy 20/Hood Avenue
    - Hwy 20/Pine Street
- City of Sisters intersections – Major intersections that are along the site frontage and are most likely to be impacted by the site:
    - Adams Avenue/Barclay Drive (potential future intersection)
    - Pine Street/Barclay Drive
    - Pine Street/Sisters Peak Drive
    - Pine Street/Main Avenue

The study intersections were analyzed with the updated traffic to determine the level of impact of rezoning the USFS site. Table 7 compares the study intersection operations for the 2030 existing zoning and 2030 proposed zoning (Option B) scenarios for the PM peak hour. Due to the citywide land use control total and the increase of internal site trips (trips between residential and employment purposes that don't travel on roadways external to the site), projected traffic volumes would decrease at many of the study intersections. The total entering volume (TEV) during the 2030 PM peak hour was projected to only increase at one of the seven study intersections (Pine Street/ Main Avenue), as listed in Table 6.

Table 7: 2030 PM Peak Hour Intersection Operations – Existing and Proposed Zoning Scenarios

Intersection	Agency	Mobility Standard*	2030 Existing Zoning				2030 Proposed Zoning (Option B)			
			TEV	Delay	LOS	V/C	TEV	Delay	LOS	V/C
Highway 20 / Barclay Drive	ODOT	0.70	3,155	37.8	D	**0.95**	3,030	37.4	D	**0.93**
Highway 20 / Hood Avenue	ODOT	0.80/0.90	1,575	96.4	B/F	0.41/ 0.77	1,505	>100	A/F	0.29/0.77
Highway 20 / Pine Street	ODOT	0.80/0.90	1,855	21.2	B/C	0.47/ 0.54	1,530	17.4	A/C	0.38/0.35
Adams Avenue / Barclay Drive*	City of Sisters	0.90	1,780	*N/A*	*N/A*	*N/A*	1,780	47.3	B/E	0.54
Pine Street/ Barclay Drive	City of Sisters	0.90	1,880	74.7	B/F	0.61	1,750	51.6	B/F	0.52
Pine Street/ Sisters Park Drive*	City of Sisters	0.90	330	10.2	A/B	0.07	270	10.7	A/B	0.04
Pine Street / Main Avenue*	City of Sisters	0.90	705	17.2	A/C	0.45	840	43.6	A/E	0.72

Signalized Intersection:
Delay = Average Intersection Delay (sec.)
LOS = Level of Service
V/C = Volume to Capacity Ratio
Shaded values do not meet standards

Unsignalized Intersection:
Delay = Critical Movement Approach Delay (sec.)
LOS = Major Street LOS / Minor Street LOS
V/C = Critical Movement Volume-to-Capacity Ratio
Shaded values do not meet standards
*Major/Minor movements for ODOT mobility std

TEV=Total Entering Vehicles (PM peak hr)

**Operations approximated using raw forecast volumes balanced with post-processed study area intersections.*

Along with the reduction in traffic volumes, some of the study intersections would operate with less congestion under the proposed redevelopment Option B. While the intersection of Highway 20/ Barclay Drive would continue to not meet mobility standards with the proposed redevelopment, the intersection mobility would improve upon the existing zoning conditions and would not trigger additional transportation improvements.

Considerations for Internal Circulation Variations

The impact analysis addresses the off-site impacts for a "worst case" trip generation for the site. However, additional impacts may occur with variations to the internal street network (such as Option A) that require additional considerations.

The first consideration is the potential impact on traffic circulation and flow through and around the site. Option B assumes a road extension (Main Avenue) that runs parallel to Highway 20 and serves as an alternate route to Highway 20 for local trips. Reducing mobility along this route would have the potential to remove traffic from the Main Avenue extension and add traffic to Highway 20. For this reason, a parallel route to Highway 20 (as well as the connection to Hood Avenue) should be designed as a collector to remain consistent with the findings of this analysis. Designing these routes with lower mobility could impact traffic circulation through the site and may require an analysis update.

The second consideration is the access spacing along site frontage. Option A includes an extension of Main Avenue that intersects Barclay Drive approximately 250 feet from Highway 20. The intersection capacity analysis at Highway 20/ Barclay Drive (with an assumed traffic signal control that would likely have longer queues than a roundabout) indicates that the 95th percentile vehicle queue for westbound traffic stopped on Barclay Drive at Highway 20 would be approximately 400 feet for Option B (worst case trip generation). Therefore, if Option A is pursued to develop the site, the access to Barclay may need to be limited to right-in/right-out or the intersection may need to be located further from Highway 20.

Findings

This section summarizes the findings of the traffic impact analysis, consistency with the TSP, and required mitigation.

Off-site Impacts

Additional traffic from the proposed rezone was not found to trigger the need for mitigation at the study intersections. Many intersections would actually have less traffic (see Figure 3) with the proposed rezone land use scenario (and the addition of the internal street network) compared to the existing zoning condition.

On-site Impacts

The proposed site access to Highway 20 at Hood Avenue would be located approximately 800 feet from Barclay Drive and 950 feet from the Old McKenzie Highway - meeting ODOT spacing standards (720 feet). The internal street network of Option A includes a connection to Barclay Drive that is located approximately 250 feet from Highway 20 and is less than the City of Sisters access spacing standard for an arterial facility (660 feet). Therefore, access to Barclay Drive under Option A would potentially require mitigation to restrict movements or shift the

intersection out of the influence area of Highway 20/ Barclay Drive. However, the internal network included in Option B would meet access spacing requirements.

Future intersection control will affect the circulation of traffic in the vicinity of the site. The impact analysis indicated that two-way stop control would be sufficient for site access along Barclay Drive, Pine Street, and Highway 20.

Consistency with TSP

The elements of the proposed development were compared to the future plans for each transportation mode in the Sisters TSP to determine consistency. The pedestrian and bicycle plans in the TSP indicate that a shared-use path (conceptual alignment) would cross the proposed site to provide a connection between Pine Street and Barclay Drive. In addition, a sidewalk or pathway improvements are identified along all sides of the site frontage. Half-street improvements along the project frontage as well as the internal street network with pedestrian and bicycle facilities (included in both Option A and Option B) would meet the desired connectivity proposed for the pedestrian and bicycle systems.

The TSP also includes a local street connectivity map (Figure 7-5) that indicates future access for additional development should connect to Barclay Drive, Sisters Park Drive, Adams Avenue, and Main Avenue. Both Option A and Option B provide these connections with the exception that Option A, which may have a pedestrian-only connection to Adams Avenue. Both options also include a connection to Highway 20 at Hood Avenue. While this connection is not specifically identified in Figure 7-5 of the TSP, the connection would further enhance the connectivity of the street system, reduce vehicle miles travelled (VMT), and provide the desired effect (and intent of the TSP) of improved connectivity in Sisters.

The traffic impacts to facilities in Sisters with the proposed development (Figure 3) would not significantly alter the intended function of the roadways. However, the primary internal roadway between Pine Street and Barclay Drive (as well as the connection to Highway 20 at Hood Avenue) should be designated and constructed as a collector roadway.

Recommended Mitigation

The following improvements would be needed for development of the site to mitigate impacts on the transportation system and provide consistency with the City's TSP and the Oregon Highway Plan to satisfy OAR 660-012-0060 requirements:

- Construct half-street improvements along project frontage, including pedestrian and bicycle facilities as shown in the City's TSP
- Provide an internal street network that creates connectivity through the site for all modes (pedestrian, bicycle, motor vehicle). This should include a collector roadway connecting to Highway 20 at Hood Avenue, as well as a collector connecting Pine Street to Barclay Drive (either as an extension of Main Avenue or Adams Avenue) to provide the desired connectivity and benefit of reducing traffic reliance on Highway 20.

- Under Option A, modify the access to Barclay Drive near Highway 20 to restrict left-turn movements or shift the access out of the influence area of Highway 20/ Barclay Drive intersection.

Appendix

The following items are attached as Appendix material:

1. Sisters TSP Functional Class Map (Figure 7-1)
2. Sisters TSP Bicycle Plan Map (Figure 6-1)
3. Sisters TSP Pedestrian Plan Map (Figure 5-1)
4. Sisters TSP Local Street Connections Map (Figure 7-5)
5. In Process Trips and TSP, Rezone Land Use by TAZ
6. Traffic Volume Projections –
    a. 2030 Financially Constrained (FC) Network with Existing Zoning
    b. 2030 FC Network + USFS Option B (TWSC at Hood Access)
7. HCM Calculation Sheets
    a. 2030 Financially Constrained (FC) Network with Existing Zoning
    b. 2030 FC Network + USFS Option B (TWSC at Hood Access)
8. Option A Layout
9. Option B Layout

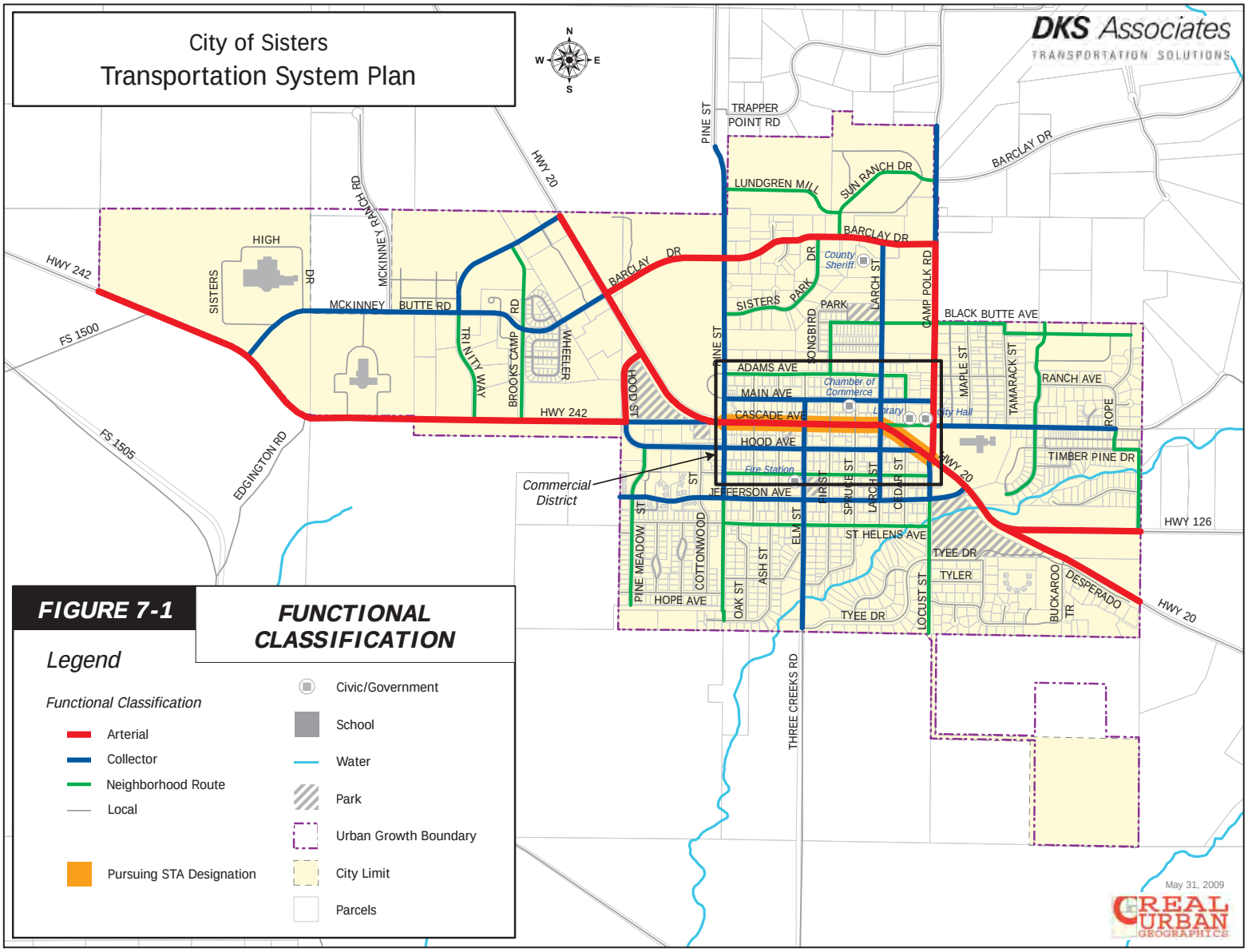


FIGURE 7-1

FUNCTIONAL CLASSIFICATION

Legend

Functional Classification

- Arterial
- Collector
- Neighborhood Route
- Local

- Pursuing STA Designation

- Civic/Government
- School
- Water
- Park
- Urban Growth Boundary
- City Limit
- Parcels

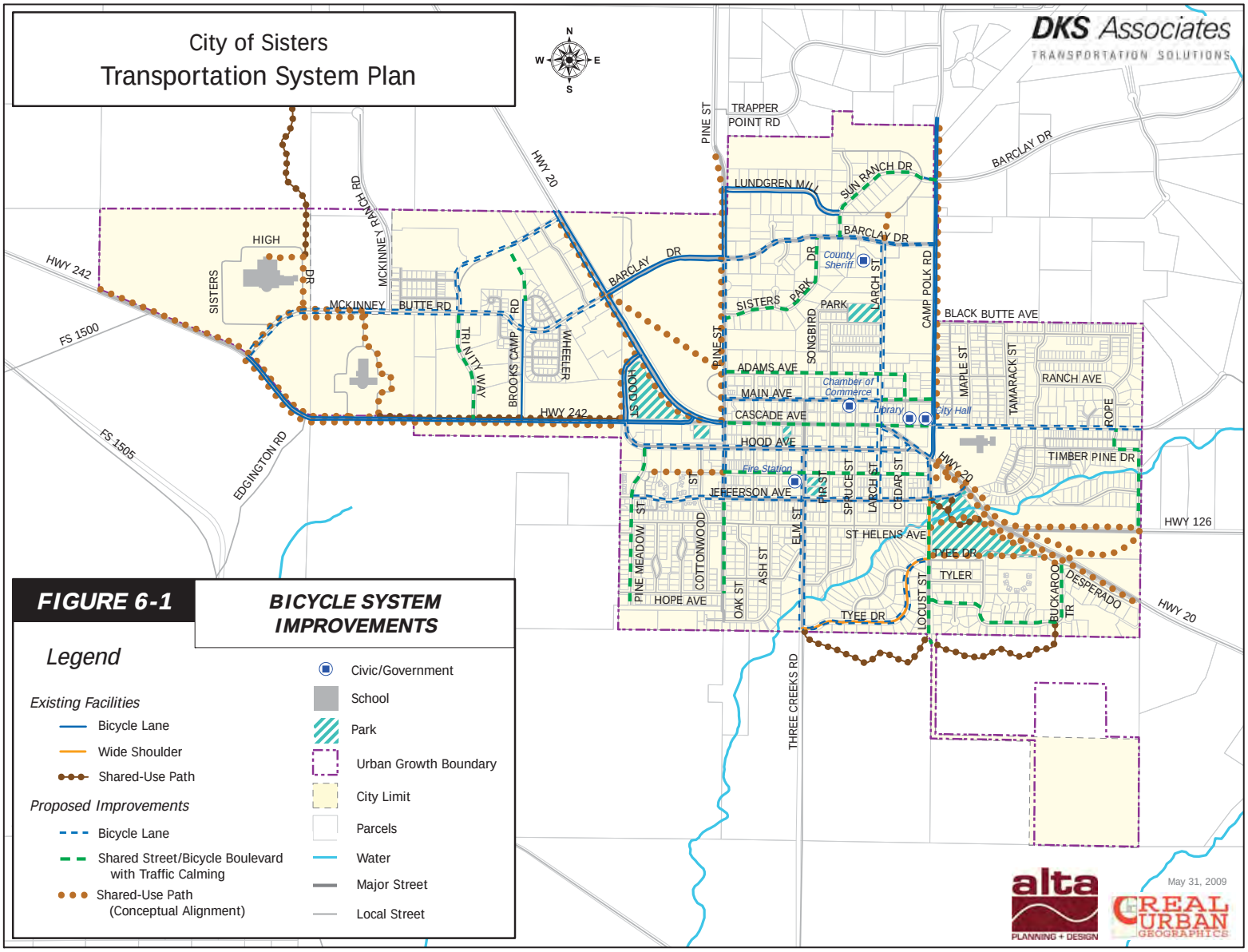


FIGURE 6-1

BICYCLE SYSTEM IMPROVEMENTS

Legend

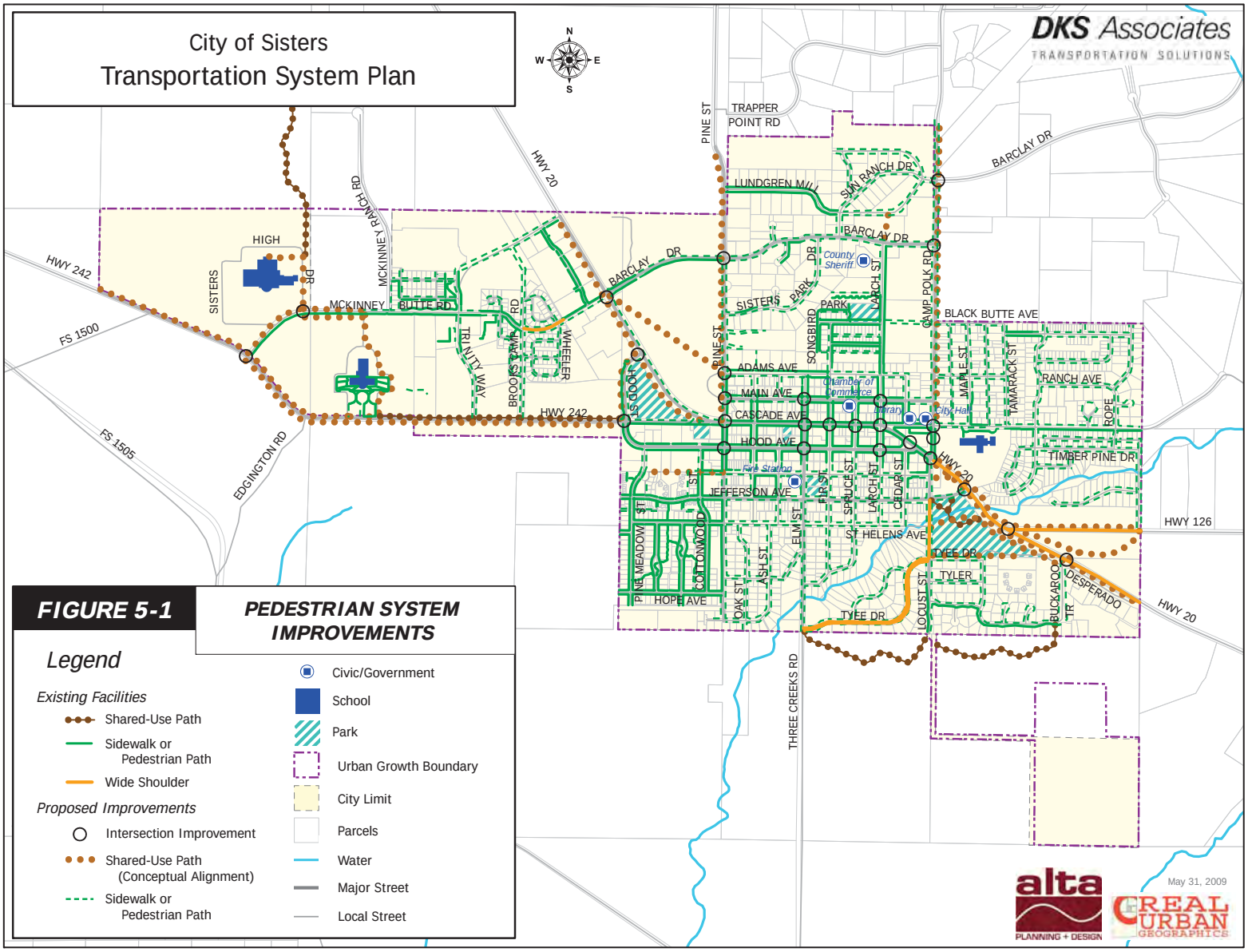
Existing Facilities

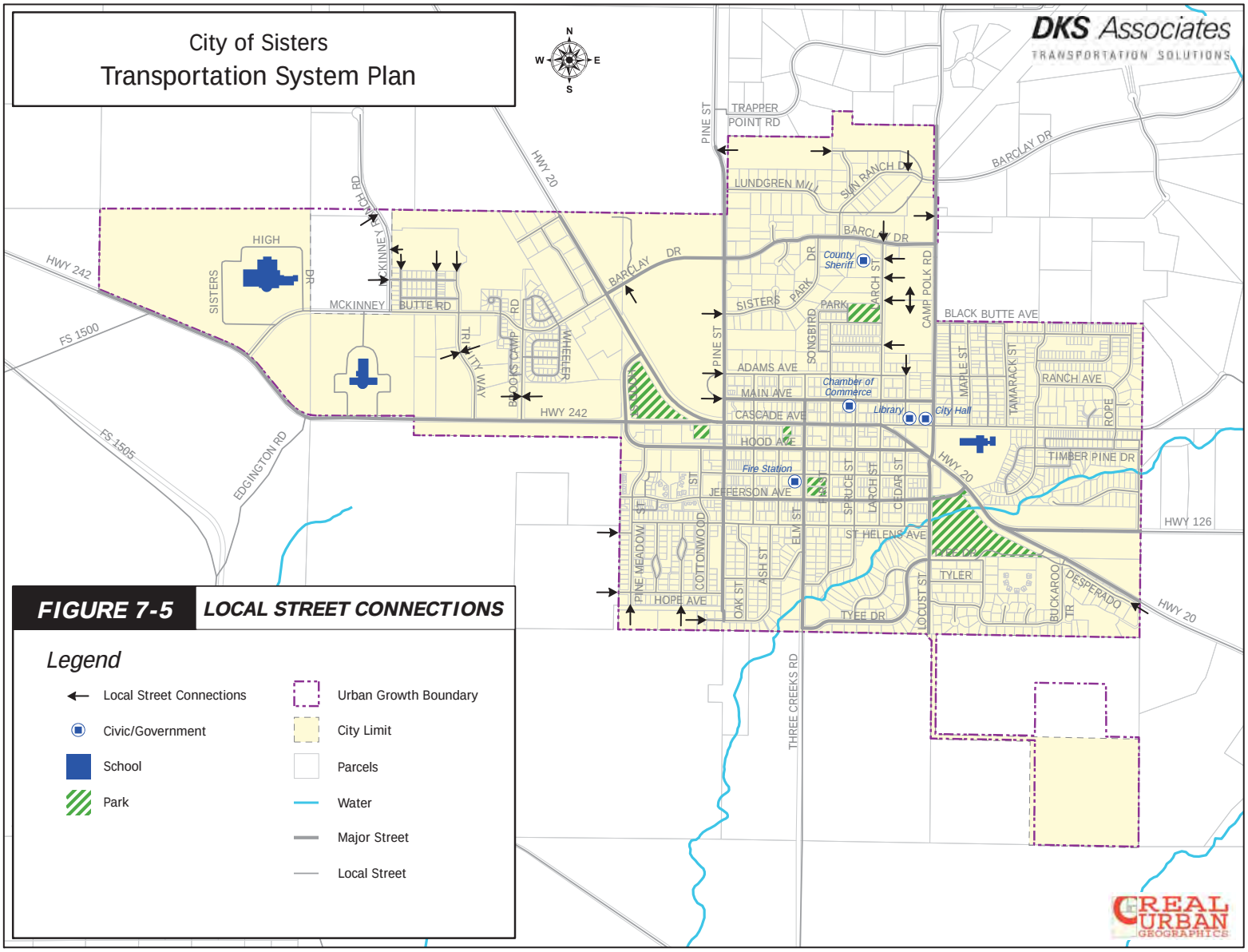
- Bicycle Lane
- Wide Shoulder
- Shared-Use Path

Proposed Improvements

- Bicycle Lane
- Shared Street/Bicycle Boulevard with Traffic Calming
- Shared-Use Path (Conceptual Alignment)

- Civic/Government
- School
- Park
- Urban Growth Boundary
- City Limit
- Parcels
- Water
- Major Street
- Local Street


City of Sisters
Transportation System Plan
DKS Associates
TRANSPORTATION SOLUTIONS
N
W
E
S
TRAPPER POINT RD
PINE ST
BARCLAY DR
HWY 20
LUNDGREN MILL
SUN RANCH DR
HIGH
HWY 242
SISTERS
MCKINNEY BUTTE RD
MCKINNEY RANCH RD
FS 1500
FS 1505
EDGINGTON RD
TRINITY WAY
BROOKS RANCH RD
WHEELER
BARCLAY DR
County Sheriff
SISTERS PARK
PARK
LARCH ST
CAMP POLK RD
BLACK BUTTE AVE
SONGBIRD
ADAMS AVE
MAIN AVE
CASCADE AVE
HOOD AVE
Chamber of Commerce
Library
City Hall
MAPLE ST
TAMARACK ST
RANCH AVE
ROPE
TIMBER PINE DR
Fire Station
JEFFERSON AVE
FIR ST
SPRUCE ST
CEDAR ST
ST HELENS AVE
ELM ST
ASH ST
OAK ST
COTTONWOOD ST
PINE MEADOW ST
HOPE AVE
TYEE DR
TYLER
LOCUST ST
BUCKAROO TR
DESPERADO
HWY 126
THREE CREEKS RD
FIGURE 5-1
PEDESTRIAN SYSTEM IMPROVEMENTS
Legend
Existing Facilities
Shared-Use Path
Sidewalk or Pedestrian Path
Wide Shoulder
Proposed Improvements
Intersection Improvement
Shared-Use Path (Conceptual Alignment)
Sidewalk or Pedestrian Path
Civic/Government
School
Park
Urban Growth Boundary
City Limit
Parcels
Water
Major Street
Local Street
alta PLANNING + DESIGN
GREAL URBAN GEOGRAPHICS
May 31, 2009


City of Sisters
Transportation System Plan
DKS Associates
TRANSPORTATION SOLUTIONS
N
W
E
S
HWY 242
FS 1500
FS 1505
EDGINGTON RD
HIGH
SISTERS
DR
MCKINNEY
BUTTE RD
TRINITY WAY
BOOKS CAMP RD
WHEELER
HWY 20
BARCLAY DR
PINE ST
TRAPPER POINT RD
LUNDGREN MILL
SUN RANCH DR
County Sheriff
SISTERS PARK
PARK
SONGBIRD
LARCH ST
CAMP POLK RD
BLACK BUTTE AVE
ADAMS AVE
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Chamber of Commerce
Library
City Hall
MAPLE ST
TAMARACK ST
RANCH AVE
ROPE
TIMBER PINE DR
Fire Station
JEFFERSON AVE
ST HELENS AVE
SPRUCE ST
CEDAR ST
ELM ST
ASH ST
OAK ST
COTTONWOOD
PINE MEADOW
HOPE AVE
TYLER
TYEE DR
LOCUST ST
BUCKAROO TR
DESPERADO
HWY 126
THREE CREEKS RD
GREAL URBAN GEOGRAPHICS
FIGURE 7-5
LOCAL STREET CONNECTIONS
Legend
Local Street Connections
Civic/Government
School
Park
Urban Growth Boundary
City Limit
Parcels
Water
Major Street
Local Street

USFS Sisters Rezone

Land Use Adjustments

	TSP BASE					TSP FUTURE					TSP FUTURE (Adjusted for In Process)					REZONE FUTURE					CHANGE (REZONE - TSP)				
TAZ	HH	RET	SER	EDU	OTH	HH	RET	SER	EDU	OTH	HH	RET	SER	EDU	OTH	HH	RET	SER	EDU	OTH	HH	RET	SER	EDU	OTH
11	0	0	0	100		0	0	0	200		0	0	0	200	0	0	0	0	200	0	0	0	0	0	0
12	70	0	40		25	635	10	50		75	605	10	50	0	75	523	5	51	0	59	-83	-5	1	0	-16
13	0	110	70		0	0	210	95		10	0	210	95	0	10	0	159	98	0	7	0	-51	3	0	-3
14 (USFS)	0	0	0		0	0	60	25		5	0	60	25	0	5	160	282	1	0	120	160	222	-24	0	115
15	120	15	40		15	335	95	55		40	324	95	55	0	40	292	61	57	0	32	-31	-33	2	0	-8
16	50	55	140		195	170	205	245		425	228	205	245	0	425	228	149	257	0	350	0	-56	12	0	-75
17	15	175	20		130	15	200	25		140	15	200	25	0	140	15	187	25	0	137	0	-13	1	0	-3
18	30	40	10		65	30	75	15		75	30	75	15	0	75	30	57	16	0	72	0	-18	1	0	-3
19	5	210	15		95	5	215	15		95	5	215	15	0	95	5	212	15	0	95	0	-3	0	0	0
20	5	90	15		55	5	100	15		60	5	100	15	0	60	5	95	15	0	58	0	-5	0	0	-2
21	225	0	0		10	290	10	5		15	287	10	5	0	15	277	5	6	0	13	-9	-5	1	0	-2
22	45	0	0		0	65	30	15		5	64	30	15	0	5	61	15	17	0	3	-3	-15	2	0	-2
23	285	0	0	45		435	10	10	115		427	10	10	115	0	405	5	11	115	0	-22	-5	1	0	0
24	70	0	25		20	150	25	35		25	146	25	35	0	25	134	12	36	0	23	-12	-13	1	0	-2
Total	920	695	375	145	610	2,135	1,244	605	315	970	2,135	1,244	605	315	970	2,135	1,244	605	315	970	0	0	0	0	-0

In Process Development

	PM pk Hr Trips		Land Use		
Site	Resi	Comm	HH	RET	TAZ
Saddlestone Residential	81		80	0	23
Village at Cold Springs	290		287	0	12
Village Meadows	59		58	0	12
Sun Ranch Industrial		205	0	47	16
Three Sisters Industrial		205	0	47	16
New Sisters Village		144	0	33	15
Black Butte Crossing	180		178	0	16
Sisters Villiage Hotel		64	0	15	15
Sisters Center		37	0	8	13
TOTAL	610	655	604	150	

Growth Check

TAZ	IP HH	IP RET	RZ HH	RZ RET	HH	RET
12	346	0	453	5	ok	ok
13	0	8	0	49	ok	ok
15	0	47	172	47	ok	ok
16	178	94	178	94	ok	ok
23	80	0	120	5	ok	ok
TOTAL	**604**	**150**				

			2030 Existing Zoning (Financially Constrained) + In Process Trips											
			Northbound			Southbound			Eastbound			Westbound		
N/S	E/W	#	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Existing Intersections														
US 20	Barclay Dr (McKinney Butte	42	47	391	90	488	536	31	211	294	69	149	371	477
US 20	Hood St (OR 242)	43	234	485	0	0	647	123	24	0	62	0	0	0
Pine St	Cascade Ave (US 20/OR 12	44	0	0	144	0	0	233	109	569	167	98	504	31
Pine St	Barclay Dr	48	45	5	17	6	21	51	52	705	71	48	851	9
Pine St	Main Ave	0	0	97	54	194	138	0	0	0	0	95	0	127
Adams	Barclay		0	0	0	0	0	0	0	862	0	0	919	0
Sisters Peak	Pine		0	13	103	10	165	0	0	0	0	35	0	5

			2030 USFS Option B (TWSC)											
			Northbound			Southbound			Eastbound			Westbound		
N/S	E/W	#	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Existing Intersections														
US 20	Barclay Dr (McKinney Butte	42	23	408	89	480	488	30	206	284	60	148	347	465
US 20	Hood St (OR 242)	43	188	402	51	172	420	119	12	7	17	2	30	85
Pine St	Cascade Ave (US 20/OR 12	44	0	0	118	0	0	145	107	364	120	77	515	85
Pine St	Barclay Dr	48	47	5	17	5	19	45	46	658	56	33	812	7
Pine St	Main Ave	0	93	68	43	201	86	4	4	136	56	4	51	92
Adams	Barclay		53	0	6	0	0	0	0	787	57	52	825	0
Sisters Peak	Pine		0	12	67	10	140	2	0	7	0	25	1	5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	24	62	234	485	647	123
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	67	254	527	703	134
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					874	
pX, platoon unblocked	0.83	0.83	0.83			
vC, conflicting volume	1739	703	703			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1887	644	644			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	40	83	68			
cM capacity (veh/h)	44	394	784			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	93	254	527	703	134
Volume Left	26	254	0	0	0
Volume Right	67	0	0	0	134
cSH	122	784	1700	1700	1700
Volume to Capacity	0.77	0.32	0.31	0.41	0.08
Queue Length 95th (ft)	111	35	0	0	0
Control Delay (s)	96.4	11.8	0.0	0.0	0.0
Lane LOS	F	B			
Approach Delay (s)	96.4	3.8		0.0	
Approach LOS	F				

Intersection Summary			
Average Delay	7.0		
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1630	1716	1458	1630	1716	1316	1630	1716	1458	2829	3233	
Flt Permitted	0.16	1.00	1.00	0.38	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	272	1716	1458	658	1716	1316	1630	1716	1458	2829	3233	
Volume (vph)	211	294	69	149	371	477	47	391	90	488	536	31
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	229	320	75	162	403	518	51	425	98	530	583	34
RTOR Reduction (vph)	0	0	54	0	0	0	0	0	71	0	5	0
Lane Group Flow (vph)	229	320	21	162	403	518	51	425	27	530	612	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	13%	2%	2%	2%	14%	2%	2%
Turn Type	pm+pt		Perm	pm+pt		Free	Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		Free			2			
Actuated Green, G (s)	35.0	25.2	25.2	28.8	22.1	91.1	4.4	25.2	25.2	18.0	38.8	
Effective Green, g (s)	35.0	25.2	25.2	28.8	22.1	91.1	4.4	25.2	25.2	18.0	38.8	
Actuated g/C Ratio	0.38	0.28	0.28	0.32	0.24	1.00	0.05	0.28	0.28	0.20	0.43	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	251	475	403	280	416	1316	79	475	403	559	1377	
v/s Ratio Prot	c0.10	0.19		0.04	0.23		0.03	c0.25		c0.19	0.19	
v/s Ratio Perm	c0.25		0.01	0.14		0.39			0.02			
v/c Ratio	0.91	0.67	0.05	0.58	0.97	0.39	0.65	0.89	0.07	0.95	0.44	
Uniform Delay, d1	22.6	29.3	24.2	24.1	34.2	0.0	42.6	31.7	24.3	36.1	18.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	34.2	3.8	0.1	2.9	35.6	0.9	16.7	19.0	0.1	25.5	0.2	
Delay (s)	56.8	33.0	24.2	27.0	69.7	0.9	59.3	50.6	24.4	61.5	18.8	
Level of Service	E	C	C	C	E	A	E	D	C	E	B	
Approach Delay (s)		40.7			30.4			46.9			38.5	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	37.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	91.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	109	569	167	98	504	31	0	0	144	0	0	233
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	118	618	182	107	548	34	0	0	157	0	0	253
Pedestrians		50			50							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		4.0			4.0							
Percent Blockage		4			4							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	582			800			2010	1741	759	1840	1815	615
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	582			800			2010	1741	759	1840	1815	615
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	88			87			100	100	60	100	100	46
cM capacity (veh/h)	993			823			16	67	389	27	60	471

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	118	800	107	582	157	253
Volume Left	118	0	107	0	0	0
Volume Right	0	182	0	34	157	253
cSH	993	1700	823	1700	389	471
Volume to Capacity	0.12	0.47	0.13	0.34	0.40	0.54
Queue Length 95th (ft)	10	0	11	0	47	78
Control Delay (s)	9.1	0.0	10.0	0.0	20.3	21.2
Lane LOS	A		B		C	C
Approach Delay (s)	1.2		1.6		20.3	21.2
Approach LOS					C	C

Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	95	127	97	54	194	138
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	103	138	105	59	211	150
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	707	135			164	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	707	135			164	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	70	85			85	
cM capacity (veh/h)	342	914			1414	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	241	164	361
Volume Left	103	0	211
Volume Right	138	59	0
cSH	533	1700	1414
Volume to Capacity	0.45	0.10	0.15
Queue Length 95th (ft)	58	0	13
Control Delay (s)	17.2	0.0	5.2
Lane LOS	C		A
Approach Delay (s)	17.2	0.0	5.2
Approach LOS	C		

Intersection Summary			
Average Delay	7.9		
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	35	5	13	103	10	165
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	5	14	112	11	179
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	271	70			126	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	271	70			126	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	99			99	
cM capacity (veh/h)	713	993			1460	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	43	126	190
Volume Left	38	0	11
Volume Right	5	112	0
cSH	739	1700	1460
Volume to Capacity	0.06	0.07	0.01
Queue Length 95th (ft)	5	0	1
Control Delay (s)	10.2	0.0	0.5
Lane LOS	B		A
Approach Delay (s)	10.2	0.0	0.5
Approach LOS	B		

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	26.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	52	705	71	48	851	9	45	5	17	6	21	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	57	766	77	52	925	10	49	5	18	7	23	55
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								1			1	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	935			843			2014	1957	805	1935	1991	930
vC1, stage 1 conf vol							918	918		1034	1034	
vC2, stage 2 conf vol							1096	1039		901	957	
vCu, unblocked vol	935			843			2014	1957	805	1935	1991	930
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	92			93			47	96	95	95	85	83
cM capacity (veh/h)	732			793			93	147	383	132	148	324

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	57	843	52	935	73	85
Volume Left	57	0	52	0	49	7
Volume Right	0	77	0	10	18	55
cSH	732	1700	793	1700	119	226
Volume to Capacity	0.08	0.50	0.07	0.55	0.61	0.37
Queue Length 95th (ft)	6	0	5	0	77	41
Control Delay (s)	10.3	0.0	9.9	0.0	74.7	30.1
Lane LOS	B		A		F	D
Approach Delay (s)	0.6		0.5		74.7	30.1
Approach LOS					F	D

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	787	57	52	825	53	6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	855	62	57	897	58	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					TWLTL	
Median storage veh)					0	
Upstream signal (ft)	861					
pX, platoon unblocked			0.93		0.93	0.93
vC, conflicting volume			917		1896	886
vC1, stage 1 conf vol					886	
vC2, stage 2 conf vol					1010	
vCu, unblocked vol			911		1966	878
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			92		58	98
cM capacity (veh/h)			694		138	322

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	917	57	897	64
Volume Left	0	57	0	58
Volume Right	62	0	0	7
cSH	1700	694	1700	147
Volume to Capacity	0.54	0.08	0.53	0.44
Queue Length 95th (ft)	0	7	0	49
Control Delay (s)	0.0	10.6	0.0	47.3
Lane LOS		B		E
Approach Delay (s)	0.0	0.6		47.3
Approach LOS				E

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	12	7	17	2	30	85	188	402	51	172	420	119
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	8	18	2	33	92	204	437	55	187	457	129
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											874	
pX, platoon unblocked	0.93	0.93	0.93	0.93	0.93		0.93					
vC, conflicting volume	1785	1732	457	1726	1704	465	457			492		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1844	1787	415	1781	1757	465	415			492		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	26	85	97	94	38	85	81			83		
cM capacity (veh/h)	18	50	592	38	53	598	1063			1071		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	13	26	2	125	204	492	187	457	129
Volume Left	13	0	2	0	204	0	187	0	0
Volume Right	0	18	0	92	0	55	0	0	129
cSH	18	143	38	161	1063	1700	1071	1700	1700
Volume to Capacity	0.74	0.18	0.06	0.77	0.19	0.29	0.17	0.27	0.08
Queue Length 95th (ft)	49	16	4	124	18	0	16	0	0
Control Delay (s)	419.7	35.7	105.6	78.4	9.2	0.0	9.1	0.0	0.0
Lane LOS	F	E	F	F	A		A		
Approach Delay (s)	163.7		78.8		2.7		2.2		
Approach LOS	F		F						

Intersection Summary			
Average Delay	12.2		
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1630	1716	1458	1630	1716	1316	1630	1716	1458	2829	3231	
Flt Permitted	0.17	1.00	1.00	0.37	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	295	1716	1458	629	1716	1316	1630	1716	1458	2829	3231	
Volume (vph)	206	284	60	148	347	465	23	408	89	480	488	30
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	224	309	65	161	377	505	25	443	97	522	530	33
RTOR Reduction (vph)	0	0	48	0	0	0	0	0	68	0	5	0
Lane Group Flow (vph)	224	309	17	161	377	505	25	443	29	522	558	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	13%	2%	2%	2%	14%	2%	2%
Turn Type	pm+pt		Perm	pm+pt		Free	Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		Free			2			
Actuated Green, G (s)	32.9	23.3	23.3	27.7	20.7	91.0	2.3	27.1	27.1	17.6	42.4	
Effective Green, g (s)	32.9	23.3	23.3	27.7	20.7	91.0	2.3	27.1	27.1	17.6	42.4	
Actuated g/C Ratio	0.36	0.26	0.26	0.30	0.23	1.00	0.03	0.30	0.30	0.19	0.47	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	247	439	373	268	390	1316	41	511	434	547	1505	
v/s Ratio Prot	c0.10	0.18		0.05	0.22		0.02	c0.26		c0.18	0.17	
v/s Ratio Perm	c0.23		0.01	0.14		0.38			0.02			
v/c Ratio	0.91	0.70	0.04	0.60	0.97	0.38	0.61	0.87	0.07	0.95	0.37	
Uniform Delay, d1	23.5	30.7	25.5	24.8	34.8	0.0	43.9	30.2	22.9	36.3	15.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	33.2	5.1	0.0	3.8	36.5	0.8	23.0	14.4	0.1	27.2	0.2	
Delay (s)	56.8	35.8	25.5	28.6	71.3	0.8	66.9	44.6	23.0	63.5	15.8	
Level of Service	E	D	C	C	E	A	E	D	C	E	B	
Approach Delay (s)		42.5			30.6			41.9			38.8	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	37.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	91.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	107	364	120	77	515	85	0	0	118	0	0	145
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	116	396	130	84	560	92	0	0	128	0	0	158
Pedestrians		50			50							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		4.0			4.0							
Percent Blockage		4			4							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	652			526			1628	1513	511	1580	1532	656
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	652			526			1628	1513	511	1580	1532	656
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	88			92			100	100	76	100	100	65
cM capacity (veh/h)	934			1041			43	96	539	55	94	446

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	116	526	84	652	128	158
Volume Left	116	0	84	0	0	0
Volume Right	0	130	0	92	128	158
cSH	934	1700	1041	1700	539	446
Volume to Capacity	0.12	0.31	0.08	0.38	0.24	0.35
Queue Length 95th (ft)	11	0	7	0	23	39
Control Delay (s)	9.4	0.0	8.8	0.0	13.7	17.4
Lane LOS	A		A		B	C
Approach Delay (s)	1.7		1.0		13.7	17.4
Approach LOS					B	C

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	136	56	4	51	92	93	68	43	201	86	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	148	61	4	55	100	101	74	47	218	93	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	960	855	96	967	834	97	98			121		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	960	855	96	967	834	97	98			121		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	37	94	95	77	90	93			85		
cM capacity (veh/h)	148	234	961	93	241	959	1495			1467		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	213	160	222	316
Volume Left	4	4	101	218
Volume Right	61	100	47	4
cSH	294	420	1495	1467
Volume to Capacity	0.72	0.38	0.07	0.15
Queue Length 95th (ft)	130	44	5	13
Control Delay (s)	43.6	18.8	3.8	5.8
Lane LOS	E	C	A	A
Approach Delay (s)	43.6	18.8	3.8	5.8
Approach LOS	E	C		

Intersection Summary			
Average Delay	16.4		
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	7	0	25	1	5	0	12	67	10	140	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	8	0	27	1	5	0	13	73	11	152	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	230	261	153	228	226	49	154			86		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	230	261	153	228	226	49	154			86		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	99	100	96	100	99	100			99		
cM capacity (veh/h)	716	639	893	716	669	1019	1426			1510		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	34	86	165
Volume Left	0	27	0	11
Volume Right	0	5	73	2
cSH	639	751	1426	1510
Volume to Capacity	0.01	0.04	0.00	0.01
Queue Length 95th (ft)	1	4	0	1
Control Delay (s)	10.7	10.0	0.0	0.5
Lane LOS	B	B		A
Approach Delay (s)	10.7	10.0	0.0	0.5
Approach LOS	B	B		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	30.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	46	658	56	33	812	7	47	5	17	5	19	45
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	50	715	61	36	883	8	51	5	18	5	21	49
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								1			1	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	890			776			1859	1808	746	1795	1834	886
vC1, stage 1 conf vol							846	846		958	958	
vC2, stage 2 conf vol							1014	962		836	876	
vCu, unblocked vol	890			776			1859	1808	746	1795	1834	886
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			96			57	97	96	97	88	86
cM capacity (veh/h)	761			840			119	171	414	156	174	343

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	50	776	36	890	75	75
Volume Left	50	0	36	0	51	5
Volume Right	0	61	0	8	18	49
cSH	761	1700	840	1700	149	254
Volume to Capacity	0.07	0.46	0.04	0.52	0.50	0.30
Queue Length 95th (ft)	5	0	3	0	60	30
Control Delay (s)	10.1	0.0	9.5	0.0	51.6	25.1
Lane LOS	B		A		F	D
Approach Delay (s)	0.6		0.4		51.6	25.1
Approach LOS					F	D

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

Option A

Development Summary:

Commercial acreage is 25% of the total site

Retail/Commercial:

- Building: 80,000 sf total
- 4 off-street parking spaces/1,000 sf
- FAR commercial =25%
- 7 acres gross

HWY Commercial:

- Building: 60,000 sf total
- 4 off-street parking spaces/1,000 sf
- FAR commercial =25%
- 5 acres gross

Residential (Cluster Development):

- Duplex: 50 units
- Cottage: 10 units
- Total Housing: 60 units/10 ac gross = 6 dua

Empolyment/Light Industrial: 20 acres gross

Park: 6.3 acres gross

Potential to Integrate Existing Ponderosa Pine into Development

Potential Street or Pedestrian Connection

Required Streets

City Limits

Total: 54 ac

USFS Development Plan
Sisters Oregon

Option B

Development Summary:

Commercial acreage is 30% of the total site

Retail/Commercial:

- Building: 80,000 sf total
  - 3 off-street parking spaces/1,000 sf
  - FAR commercial =25%
  - 7 acres gross

Potential Resort Anchor:
(Commercial Zoning)

- Shown: 11,000 sf commercial total
  - 4 off-street parking spaces/1,000 sf
  - FAR commercial =9%
  - 10 acres gross
  - Additional Vacation Rental Housing
    (* Development is less intensive than commercial zoning would allow)
- Maximum Build Out: 108,000 sf
  - 4 off-street parking spaces/1,000 sf
  - FAR commercial =25%
  - 10 acres gross

Residential:

- Town Homes: 50 units
- Apartments: 110 units
- Total Housing: 160 units/10 ac =16 dua

Empolyment/Light Industrial: 15 acres gross

Park: 6.3 acres gross

Potential to Integrate Existing Ponderosa Pine into Development

Potential Street or Pedestrian Connection

Required Streets

City Limits

Total: 54 ac

USFS Development Plan
Sisters Oregon

0 100' 200'

EXHIBIT E: PROPOSED COMPREHENSIVE PLAN AMENDMENTS

attached

Double underline = proposed additions
~~Strikethrough~~ – proposed deletions

Goal 9: Economic Development

9.1 GOAL

"To provide adequate opportunities for a variety of economic activities vital to the health, welfare, and prosperity of the City's citizens."

9.2 BACKGROUND

Historic Employment and Recent Trends
Sisters originated as an overnight stop for travelers of early-day wagon roads and for sheepherders in the area. From the 1920's through the early 1950's, the town was also a center for local logging and sawmills.

After the sawmills closed, the town's population decreased until recreational developers came to the area in the late 1960's and started subdividing lands for recreational homes. The area was discovered by a new generation of Oregonians and visitors, and tourism became the new economic base. Tourism has continued to be the main attraction for Sisters, but in recent years there have also been light industrial businesses that have located in town. The City of Sisters is becoming a service center for the growing year-round population.

Local Businesses and Employment by Sector
The City of Sisters issues business licenses for all businesses located in Sisters and firms or individuals doing business in the City. These licenses include brief descriptions of the types of business activities taking place. Table 9.1 below, describes recent business licenses by type and number, not including transient business licenses.

Table 9.1: Business Licenses Issued in City of Sisters, 1999-2003

Years	Number of Business Licenses Issued	Most Frequent General Business Types
1999-2000	290	Retail, Real Estate and Construction Related Businesses, Restaurant
2000-2001	299	
2001-2002	364	
2002-2003	360	

Source: City of Sisters Business Licenses, 1999-2003

As shown, the number of business licenses issued in the City since 1999 has been steadily growing. Year 2002-2003 is the current year and additional licenses are expected to be issued, slightly exceeding 364 business licenses. The column titled "Most Frequent General Business Types" refers to the type of employers, not employees, and is intended to demonstrate the most common types of businesses in Sisters. The spike in the Number of Business Licenses Issued between year 2000-2001 and 2001-2002 is likely due to a

surge of construction activities during that time associated with completion of the sewer and adoption of a new Development Code.

Another indicator of local employment is the number of employees in Sisters and the top employers. The *Technical Report, City of Sisters Commercial and Industrial Future Land Needs Analysis*, February 2, 2003 (see Appendix B) describes existing and anticipated employment by sector in Sisters. This report is incorporated herein by reference and is adopted with the adoption of this Plan. Table 9.2 describes the differences between employment by sector in Deschutes County and Sisters. The data for the column "2002 Estimated Employment by Sector in Sisters" was obtained by analyzing business licenses and interviews with local businesses. Business licenses describe the type of business and number of employees. This information was then used to determine the businesses sector, resulting in the number of employees by sector for business located in Sisters for the year 2002.

Table 9.2: Sector Comparisons between Deschutes County and the City of Sisters

Industry	Deschutes County (1)	City of Sisters (2)	2002 Estimated Employment by Sector in Sisters (3)
Total Non-Farm Payroll Employment	**100%**	**100%**	**1,633**
Goods Producing (4)	19%	19%	307
Services Producing (4)	81%	81%	1,326
Manufacturing, Total	**11%**	**12%**	**198**
Non-Manufacturing Total	**89%**	**88%**	**1,435**
Construction & Mining	8%	7%	109
Transportation, Communications, Utilities	4%	1%	15
Wholesale and Retail Trade	27%	40%	656
Finance Insurance Real Estate	6%	7%	119
Services	30%	18%	298
Government	14%	15%	238
(subset) Federal	2%	4%	65
(subset) State	1%	1%	22
(subset) Local	11%	9%	151

(1) Source: Oregon Employment Department, Workforce Analysis, November 2002
(2) Source: Based on 2002 Estimated Employment by Sector in Sisters
(3) Source: City of Sisters analysis of number of employees by business type from business licenses in 2002-2003
(4) Goods producing and durable and non-durable goods include all manufacturing sector plus construction and mining portion of the non-manufacturing sector. Service producing represents all non-manufacturing minus construction and mining sectors.

Table 9.2 illustrates the similarities between the sector distribution in Deschutes County and the City of Sisters. The most notable differences between Sisters and Deschutes County is that Sisters has fewer businesses in the Service, Construction and Mining, and Transportation, Communications, Utilities sectors, and more dependence upon the

Wholesale and Retail Trade sector. Wholesale and Retail Trade is the sector that employs the most people in Sisters.

Table 9.3 shows the results of a review of 2002 City of Sisters' business licenses and interviews with local businesses.

Table 9.3: Five Largest Employers in Sisters in 2002-2003 (by number of employees)

Employer	Number of Employees
Sisters School District	140
Multnomah Publishers, Inc.	131
U.S. Forest Service	65
Gallery Restaurant	45
Ray's Food Place	45

Source: City of Sisters Business Licenses, 2003-2003

Anticipated Population and Employment Growth

Since the early 1990's Central Oregon and the areas around Sisters have experienced rapid population growth. The majority of growth in the Sisters planning area has occurred in rural residential subdivisions beyond the city limits and the Urban Growth Boundary (UGB). Historically, the lack of a municipal sewer system, small lot sizes unable to support on-site sewage systems and lack of mountain view properties discouraged development within the City.

As described in the *Technical Report, City of Sisters Commercial and Industrial Future Land Needs Analysis* (LNA), February 2, 2003 (see Appendix B), the rate of population growth in the City of Sisters is expected to outpace Bend, Redmond, and the rural areas in Deschutes County. The primary factor driving this growth is the completion of a municipal sewer system (as described in Goal 11). Development of this sewerage system will continue to provide opportunities for population and economic growth in the City. As the City's population increases, economic growth is also expected.

The LNA used a gravity model to predict economic growth. Such models assume that a city will attract employment relative to a given region based on its relative size. The analysis predicted the City will grow by an additional 1,083 non-farm jobs over the period from 2000 to 2025 in addition to the current 1,636 employees in 2000. This indicates that the City will create and provide for nearly double the number of current jobs in the City.

Assuming the same distribution of jobs between sectors in 2002, of 1,083 new jobs, 880 jobs are expected to be in Service Producing and 203 in Goods Producing sectors. Within the Service Producing category, 40% of the jobs or approximately 435 new jobs are anticipated to be in the Wholesale and Retail Trade sector. After Wholesale and Retail Trade, the Services, Government, and Construction and Mining Sectors are expected to be significant contributors to new job growth.

If the City is successful in diversifying its economic base as discussed later in the Findings portion of this chapter, then the distribution of jobs within non-manufacturing will be more evenly distributed than in 2002. In particular, the percentage of employees in the Wholesale and Retail Trade sector may decrease, and increases are sought in the Construction and Mining, Finance Insurance Real Estate, and Services sectors. The City is also undertaking efforts to maintain and increase employment in the sectors identified in the "*Sisters Strategic Action Plan for Economic Development*", in particular, light industrial employment opportunities.

In September 2010, the Leland Consulting Group prepared a memorandum identifying potential development that could occur on the 67+ (net) acre Forest Service property – this occurred in conjunction with the development of three 'Design Options', which included a variety of residential, commercial and light industrial areas. ~~referred to as Design Options A, B and C (discussed at length in Chapter 14). Note: also added is "Design Option D", the Park option, which would use between 5 and 47 acres of the same Forest Service land as a public park.~~ Since then, the Forest Service long range plans were revised and the property north of Barclay was sold to a private developer, increasing the flexibility in design and layout of uses in this area.

The Leland memorandum summarized key market and demographic information to produce a Development Option Summary, which highlighted the feasibility of developing the land with varieties of mixed-use development, such as retail / commercial (12 to 15 acres), light industrial (18 to 22 acres), and some housing (10 to 14 acres).

Lands for New Employment

Through the Development Code, the City established zoning or land use districts that will accommodate a range of businesses. As discussed in detail below, the pertinent zoning districts for economic development in Sisters include the Commercial and Highway Commercial Sub-Districts, Airport District and Light Industrial District. Additional zoning districts may be adopted during the planning period to fulfill the goals and policies of the Comprehensive Plan.

Commercial Lands

The Commercial District (C District) is located along Hood, Cascade, and Main Avenues. In addition, Adams Avenue, and land to the immediate west of North Locust Street and south of Barclay Drive is zoned Commercial. The Commercial District establishes locations for the continuation and development of a center for commerce and provides for the shopping, consumer and service requirements for area residents and visitors. Retail and commercial service areas for Sisters residents and visitors are primarily concentrated within Sisters along Cascade/Highway 20, Main and Hood Streets. The community believes that enhancing the pedestrian environment in this District will establish long-term economic vitality for the downtown core. To achieve this end, public works, parks, trails, urban renewal, and roadway projects have all been planned for this area to enhance the pedestrian environment.

The Highway-Commercial Districts (HC Districts) are located at the entrances to Sisters along U.S. Highway 20 and U.S. Highway 20/ Oregon Highway 126. This District is intended to provide areas for commercial uses and services primarily oriented to automobile traffic.

An 1880's Western Architectural Design Theme applies to the Downtown Commercial District (DC District) and Highway Commercial District (HC District). This design theme creates an appealing and distinctive appearance that separates the commercial areas of Sisters from all other commercial areas in Deschutes County.

Land developed as the Conklin Guest House on Camp Polk Road has been annexed into the City Limits. The guest house property is developed as a bed and breakfast Inn. It is used as a site for local events and provides lodging for visitors to Sisters. The Inn is a landmark building at the north entrance to the City on Camp Polk Road. The Inn is located close to the Sisters Eagle Airport and adjacent to the City's light industrial zoning district. In this location, the Inn can provide lodging, restaurant and event services to serve businesses that locate in the light industrial zone, while continuing to serve tourists.

The Conklin Guest House property was included in the City's UGB for tourist commercial uses with the adoption of the 2005 Sisters Urban Area Comprehensive Plan. Initially the property was zoned Urban Area Reserve. Later in 2005, the property was annexed to the City and a commercial zoning district with special use limitations was applied to the property. In 2007, the City adopted the Sun Ranch Tourist Commercial zoning district for the property. It also added 0.8 acres of land that include the Conklin Guest House barn to the district.

The 1880's Western Architectural Design Theme provisions of the Comprehensive Plan and City's zoning ordinance shall not be applied to the Sun Ranch Tourist Commercial zoning district. The design of the Sun Ranch Tourist Commercial zoning district shall be allowed greater flexibility to match the design of the historic Conklin Guest House and existing barn to provide a first-quality lodging experience for guests. As the Sun Ranch Tourist Commercial district is located outside the downtown and highway areas of the community, this variation will not detract from the unique downtown experience offered by the City of Sisters. A 1900s Rural Farm/Ranch House design theme is required for buildings within the Sun Ranch Tourist Commercial district. This theme is consistent with the history of the property and is compatible with and provides a good transition from the 1880s Western Design Theme.

Airport Lands

At 3168', Sisters Eagle Airport is located one mile north of downtown Sisters and is located next to the North Sisters Business Park. It is categorized by the Oregon Department of Aviation as Category IV (local general aviation airport). Although Sisters Eagle Airport is privately owned, the airport is open to public use. It is also used for wildfire aircraft support. The privately owned airfield has a heliport and a runway that is 60' wide by 3,560' long.

In 2013, the City of Sisters amended the Comprehensive Plan to add an Airport land use designation and also amended the Development Code to add an Airport District. The Sisters Eagle Airport property was annexed into the City of Sisters on March 15, 2014, and designated as Airport in the Comprehensive Plan and rezoned to Airport (A) District. The property owners plan to build an expanded terminal and an array of facilities for

pilots. In addition, the Sisters Eagle Airport is a center for local businesses, and several successful traded-sector companies, including ENERGYneering, have their headquarters at the airport.

Light-Industrial Lands

The Light Industrial District (LI) is located in the northern portion of the UGB, west of Locust Street and east of Pine Street, and north of Adams Street. The District provides for business parks and a mix of industrial and commercial uses. The LI District presents industrial opportunities for non-offensive industrial activities that do not cause noise, light, water, or air pollution.

There are currently four industrial subdivisions in the City; the Sisters Industrial Park containing 28 lots, the Mountain View Industrial Park containing 17 lots, the Sun Ranch, Phase I containing 20 lots and the Three Sisters Business Park containing 8 lots. The four industrial subdivisions encompass approximately 45 acres and two expansion areas. All of these subdivisions are designated Light Industrial by this Comprehensive Plan.

The North Sisters Business Park Sub-district, adopted in 2007, is an innovative mixed-use zoning district that provides additional opportunities for employment. The North Sisters Business Park Sub-district provides for ground floor light industrial uses with the flexibility to build second story loft apartments above industrial operations, and can be applied under the Light Industrial Comprehensive Plan designation. The second story loft units may be utilized as employee or workforce housing or provide additional rental revenues to support the underlying industrial operations.

<u>1880's Design Theme for Commercial Areas</u>
The concept of a central architectural and sign theme based on Western and/or Frontier building styles of the 1880's has been initiated in the Commercial Districts of the City. This is presently expressed through several store fronts remodeled in this style and many new commercial developments in the downtown area.

The result of this interest and endeavor has been adoption of a community development objective to "encourage the development of a central architectural and sign theme based on Western and/or Frontier building styles of the 1880's." This particular goal originally was formed in the 1979 Plan and continues today to improve the City's image, visual appearance, a tourist oriented economy. It has also been prompted by the desire to establish city identity, interest and attraction of visitors and tourists in support of a significant community economic activity.

A legislative mandate for this architectural design and construction is in the City's Development Code. Additional encouragement and results may also be fostered through the local Chamber of Commerce by the business community and a continuing program of business community education and support.

The following information and illustrations in Appendix D of this Plan concern the architectural styles, materials, methods of construction, color and miscellaneous features of the 1880's. It is not intended as a precise interpretation of the architectural design and building philosophy in its purest form, but as a methodology of approaching an overall period expression of architectural style.

Principal features of the period's architectural style revolve around the renaissance or rebirth of the elements of classical architectural orders, expressed in period building materials and methods of construction, with the presentation of an impressive rectangular false store front. In relation to Western and/or Frontier towns, with their explosive boom and usual economic "bust", this was principally carried out in light wood frame and bearing wall masonry (brick) construction. Light wood frame construction predominates construction in the majority of Western towns in this category; however there are substantial exceptions as exemplified by Jacksonville, Oregon, Virginia City, Nevada and Granite City, Montana.

The following sections are keyed to subsequent illustrations to exemplify methodology of use of materials and construction techniques.

Materials

Structure: Light wood framing, post and beam and masonry bearing walls are typical structural systems. Light wood framing may be achieved through current construction practices utilizing Ballon Framing and/or Western or Platform Framing with light wood framing details, up to two and three stories in height. Here attention will have to be given to building code requirements for fire resistive construction and building separation. Masonry bearing wall construction, particularly I brick, provides an alternative with inherent fire protective benefits.

Roof: Roof systems may be supported by a standard rafter system or pre-fabricated light wood trusses. Typical roof coverings may be realized with shingles or shakes at a minimum slope of four inches in one foot. Alternative coverings are metal with standing or batten/ribbed seams or asphaltic shingles.

Exterior Finishes: Typical materials are varieties of horizontal wood drop siding, vertical board and batten (rough sawn or surfaced four sides) and cedar shingles, with the later particularly applicable to ornamental patterns on residential structures and brick masonry. Modern composite materials such as T1-11, vial siding, and the like are not appropriate exterior finishes.

Windows: Wood sash windows are typical, to include double hung, casement, horizontal sliding and fixed sash. Availability of currently manufactured stock in styles keeping with the period is limited as to capturing the period window style. This is particularly true for large expanses of glass in commercial store fronts and will undoubtedly require special fabrication.

Doors: Combination glass and wood panel doors are typical and are available in certain standard types in single and divided glass lights. To approach the variety of period door styles will require modification of standard door types, particularly in arrangement of glass lights or necessitate special manufacture.

Ornamentation and Trim: The principal features of period ornamentation are concerned with the revival of elements of classical architectural orders. This primarily concerns the entablature or the upper section of wall or story that is usually supported on columns or pilasters and consists of the architrave, the lowest division of the entablature resting immediately on the capital or top of the column and the molding around a door or other rectangular wall opening; frieze or the part of the entablature between the architrave and cornice (top), the richly ornamented band; and the cornice or the molding and projecting horizontal member that crowns the architectural composition. In addition, this revival was manifest in the use of wood columns supporting the porch or covered entrance along the front of a building, reminiscent of the classical portico or colonnaded building entrance. This architectural embellishment also embraced the use of balustrade or "fence" between columns and at the periphery of second story porches.

Exterior Surface Finishes: Depending upon the intended longevity of a particular structure and the quality of exterior finish materials, period structures present variety within the basic construction practices of the era.

Rough sawn or milled board and batten surfaces were unfinished to oiled and/or stained to protect the surface materials. This is practical with the use of Cedar or Redwood which both contain natural oils that protect the wood. As a practical matter for extended protection of any board and batten surface, the use of a sealer or oil base or solid color stain is warranted. The same is true of vertical surfaces finished with Cedar shingles.

Horizontal wood drop siding was normally finished with paint; however in many instances, no finish applied. Here a sealer or stain would be appropriate, in lieu of a painted surface.

In consideration of providing boardwalks in lieu of concrete sidewalks, only pressure treated wood members should be used.

Color: Rough sawn or milled board and batten, particularly Cedar and Redwood, may be retained in a natural finish which ultimately weathers to silver-gray in color.

During the period, there was a lack of high gloss finishes; therefore color applications were generally flat in nature. To duplicate this character, flat or low gloss products currently on the market should be utilized.

Applied surface colors were predominantly flat white for most buildings, particularly the exposed surfaces of porches or covered walkways and ornamentation attached to brick masonry buildings. Large area surface colors other than white were primarily flat earthy ochres, yellows, browns and reds. These colors are generally contrasted with white trim

at the cornice, vertical corner trim of the building, windows and doors, porch and balustrade.

Modern interpretation of color application has tended toward a broader color selection in keeping with the white-dark contrast, by adding deep blues, blue-greens and red-oranges.

Color availability and selection for stains is readily obtained from product manufacturers. One example of such product used extensively in the Northwest is Olympic stain, particularly the solid color stains. These stains offer a fairly broad range of color selection and provide a flat, deep colored finish in keeping with the period.

Latex based paints also produce a flat finish color and low-gloss oil base enamels offer additional applications for colored finishes. Color selection samples are readily available from local paint suppliers.

The City Council has adopted an approved color pallet recommended by the Deschutes Landmarks Commission to represent typical 1880's colors. This makes color selection and matching easy for applicants.

Methods of Construction

General: Adherence to presently accepted methods of construction and compliance with applicable building codes and development ordinances is recommended as the minimum standards. Fire and life safety are of particular concern.

As the majority of new construction and existing building renovation is adjacent to public walkways, attention to good construction safety practices is necessary. This is particularly true in the more congested commercial areas.

Standard False Front Commercial Structure: The following graphic illustrations keyed to this sub-section illustrate standard approaches to the construction of this element.

Miscellaneous

See the graphic illustrations in Appendix D for various details for:

- Construction Details
- Ornamentation
- Fences
- Gates

Signs: Signing was generally handled by painting the sign directly on the façade of the building, either directly on the finish material or on a sign board which was subsequently affixed to the building. Ornamentation is achieved at the edge of the sign board by its particular shape and the application of edge molding or individually cut raised letters utilized for relief and contrast.

Other signing methods include projecting double faced boards affixed high on the façade of the building and structurally supported by wires.

Free hanging sign boards attached under covered porches were also utilized.

Lettering was generally ornamental and/or shaded and pained in contrasting colors on flat white surfaces. Examples of lettering are provided in the following graphic illustrations keyed to this sub-section. Individual cut-out letters applied to the sign surface and routed lettering provides additional acceptable techniques for signing.

The City's sign code in the Development Code requires adherence to these standards and regulate all signs in the City Limits.

9.3 FINDINGS

Anticipated Demand for Economic Lands and Inventory of Economic Lands

In the greater Sisters area, most of the industrial and commercial activity takes place within the City limits. Land is needed for these activities and an adequate supply of economic lands is needed for expansion of the City's economic base. The *Technical Report, City of Sisters Commercial and Industrial Future Land Needs Analysis* (LNA) was completed to compare the supply and demand of industrial and commercial land until the year 2025 (See Appendix B).

Commercial Land

The LNA identified that there are approximately 37 net buildable acres of vacant C and C-HC designated lands inside the Sisters UGB. The term "net" refers to the amount of land after subtracting approximately 20% for roads and other infrastructure. Adding approximately 12 net buildable acres of re-developable and 40 net buildable acres of developable acreage of partially developed lands, a total of 89 net buildable acres of buildable C and C-HC lands are inside the Sisters UGB. Since the projected future demand is 28 net buildable acres, there is a surplus of commercial land of approximately 61 acres. Even without considering the re-development of partially developed lands, there is sufficient vacant and re-developable land in the existing UGB to accommodate demand for commercial lands within the next 20 years.

As part of the LNA needs, the City has determined that it needs to include five acres of tourist commercial land in the UGB. This property is needed by the City to better serve the needs of tourists and local business in the City's light industrial district adjacent to the airport. The Conklin Guest House was included in the UGB in 2005 to encourage the retention and expansion of this important business as a part of the Sisters Community to meet the needs of nearby existing and future businesses. The Sun Ranch Tourist Commercial zoning district has been written and applied to this property. The new zoning district assures conformance with the goals, policies, and findings of the Comprehensive Plan by limiting uses to lodging, restaurants, and other uses that serve the Industrial Park businesses and tourists alike.

Airport Land

Annexing the Sisters Eagle Airport into City limits and rezoning it to Airport (A) District allows the continued vitality of the Airport as a permitted use. As a permitted use, the Airport and associated businesses will be able to develop and provide living wage jobs to members of the community. In addition to on-site development, the Airport provides access for businesses within the community who may benefit from air service.

Industrial Land

Sisters has experienced a significant population growth of the past twenty years. Employment levels have also reached a new high with strategic economic development efforts. The job number increases are in industries other than tourism, indicating a more diverse economy.

By early 2020, the amount of developable employment land inside the Sisters UGB has significantly decreased. All of the light industrial parcels in Sisters are being utilized (nearly 100% occupancy for the entire zone), with only 9 lots (6.75 acres) listed as vacant (still utilized, but not developed). Development within the North Sisters Business Park zone has increased significantly and the occupancy rate is 100%.

~~There are approximately 44 net buildable acres of vacant LI designated lands inside the Sisters UGB. Adding 3 net buildable acres of re-developable and 17 acres of developable acreage of partially developed lands, a total of 64 acres of buildable light industrial (LI) lands are available inside the Sisters UGB. The 2005 Sisters Urban Area Comprehensive Plan added approximately 3.07 net buildable acres of industrial land to the UGB (Carpenter property). This land was not included in Table 9.4 in the 2005 Comprehensive Plan Update.~~ In 2007, the City removed 4.9~~548~~ net buildable acres of land (approximately 11.684 gross acres) located in the Sun Ranch Mixed Use Community from the industrial land supply of the City. Also in 2007, the City re-zoned a 7.62 net buildable acre (12.58 gross acres) parcel from Light Industrial to Residential and Multi-Family Sub-district for residential purposes. In 2014, more than half of the Three Sisters Business Park (approximately 20 acres) was rezoned from light industrial to residential. Justification for this change was the lull in lot sales and construction activity during and the years following the recession. Therefore, the City's existing vacant land and surplus of light industrial land has decreased significantly. ~~by a total of 9.5 net buildable acres~~. The LNA projects a demand for 34 net buildable acres of industrial land inside the Sisters UGB until the year 2025. ~~A surplus of approximately 24.5 acres of net buildable industrial land is predicted based on anticipated supply and demand of undeveloped industrial lands until the year 2025. There is a sufficient supply of vacant acreage alone to satisfy anticipated demand, without considering re-developable and partially developed lots. Table 9.4 illustrates that with re-developable and existing vacant land, there is still a surplus of 20.5 net buildable acres of industrial land with the two rezones from 2007.~~

~~*Table 9.4: Summary of Commercial and Industrial Future Land Needs until Year 2025 (net acres)*~~

~~Land Designation~~	~~Existing Vacant Land~~	~~Re-developable and Partially Developed~~	~~Total Available Land~~	~~Projected Land Demand~~	~~Surplus~~
~~Commercial~~	~~37~~	~~52~~	~~89~~	~~28~~	~~61~~
~~Industrial~~	~~34.59~~	~~20~~	~~54.59~~	~~34~~	~~20.59~~

~~Source: Technical Report, City of Sisters Commercial and Industrial Future Land Needs Analysis, February 2, 2002, as amended by files CP06-01/02 and Z06-01, and files C06-04 and Z06-02.~~

~~In addition, there is a 17.54 acre parcel of land zoned UAR intended for future urban use. That is in addition to the acreages indicated in Table 9.4.~~

~~Lastly, there is a 4.34 acre tract of land north of Barclay Drive and west of the Conklin Guest House intended for development with adjacent light industrial zoned land. This property was annexed into the City Limits in 2007.~~

Public Infrastructure and Economic Development

As addressed in Goal 11, Public Facilities, the City developed a public sewerage system within the City, which was completed in 2001. The construction of this system ~~will~~ enabled the City to meet the demands for new commercial and industrial development. Adoption of System Development Charges for water and sewer systems provides a mechanism to ensure that systems can be expanded to accommodate increased demands over time.

Goal 3 of the City's Transportation System Plan (adopted January, 2010) calls for promoting the development of the City, Region, and State economies through the efficient movement of people, goods, and services and through the distribution of information. This goal is supported by a policy that states "Ensure a safe and efficient freight system that facilitates the movement of goods to, from, and through the City, Region, and State while minimizing conflicts with other travel modes." Efficient truck movement through Sisters plays a vital role in maintaining and developing Central Oregon's economic base as Highway 20 is a key freight corridor for the region. As identified within the City's TSP, high levels of truck traffic likely affect highway performance. Therefore, as part of the TSP update, Barclay Drive and Camp Polk Road/Locust Street from Highway 20 to Barclay Drive are upgraded from collectors to arterials. These arterials are also identified in the TSP as proposed truck routes with the completion of the Alternate Route. The Alternate Route will provide relief to Highway 20 and consists of 3-lane arterial streets on Barclay Drive and Locust Street, adequate traffic control devices (either traffic signals or multilane roundabouts), at either end of the route where it intersects with the state highway, a roundabout at the Barclay Drive/Locust Street intersection, and, possibly, intelligent transportation system (ITS) technology that detects congestion on the highway and directs traffic onto the alternate route. These improvements will provide for the economical movement of raw materials, finished products and services while enhancing public safety and the pedestrian-friendly quality of the City's downtown core.

The airport, Sisters Eagle Airfield, does have an impact on the development of industrial uses, as the Runway Protection Zone overlays a portion of a few lots in the industrial area. The Runway Protection Zone precludes uses including structures and water features. However, the airfield also creates opportunities by enabling corporate aircraft to use the facility as well as encouraging aviation-related businesses. An Airport Overlay District has been adopted in conformance with the Land Conservation and Development Commission Transportation

Planning Rule. The Sisters Eagle Airport was annexed into the City of Sisters on March 15, 2014.

Enterprise Zone.

The City of Sisters has partnered with the City of Redmond and Deschutes County to expand the 'Greater Redmond Enterprise Zone' to include portions of the City of Sisters. The City is currently looking to amend the zone boundary to include the Sisters Eagle Airfield within this zone, which is expected to occur following annexation of the land. The Enterprise Zone offers benefits to qualifying business, and is administered by Economic Development of Central Oregon (Bend office). Qualifying businesses receive tax incentives on the portions of their facilities that are upgraded to provide additional employees, and

Downtown Sisters Urban Renewal Plan

The City recognizes that tourism will continue to be important to the economic development of the City of Sisters. *The Downtown Sisters Urban Renewal Plan*, adopted in July of 2003 (Urban Renewal Plan), is intended to promote the development of downtown as the commercial and cultural center of the Sisters community. The Urban Renewal Plan is incorporated herein, by reference by this Plan.

The Urban Renewal Plan's goals are stated below.

1. Strengthen Downtown Sisters' Role as the Heart of the Community
2. Improve Vehicular and Pedestrian Circulation Through and Within the Downtown to Accommodate Through Traffic and Downtown Patrons
3. Promote a Mix of Commercial and Residential Uses Oriented to Pedestrians
4. Enhance the Pedestrian Environment On Streets and In Public Parks, a Town Square and Public Gathering Places
5. Promote High-Quality Design and Development Compatible with the Sisters Western Frontier Architectural Theme
6. Encourage Intensive Development of Downtown Properties
7. Promote Employment Uses to Generate Year-Round Jobs

These goals are met by forming an Urban Renewal District overseen by the Sisters Development Commission. Within the boundaries of the Urban Renewal District, tax increment financing, grants, loans, developer contributions, and donations will generate funds to use for improvement projects. The Sisters Development Commission, which is the urban renewal agency of the City, will implement the Urban Renewal Plan. The implementation will involve public improvements; assistance to property owners/lessees for rehabilitation, redevelopment or development; and the creation of civic and community facilities. Overall, the improvements are intended to enhance the vitality of the downtown area by improving streetscapes, reinforcing the existing design theme, and creating community amenities.

Business Recruitment and Outreach Activities

The Sisters Area Chamber of Commerce is a non-profit corporation founded in 1974 to "unify and coordinate the efforts of businesses and residents in promoting the civic, industrial, commercial, agricultural, environmental and general welfare of the City of Sisters, Oregon and its economic area."

The Sisters Chamber promotes economic development in the City as well as the outlying area. The Chamber assists visitors, answers inquiries, and promotes business relocations to the Sisters area. It also sponsors community events throughout the year that encourage people to visit and support local businesses.

The Sisters Chamber of Commerce with the assistance of the Community Action Team of Sisters (CATS) sponsored the *Sisters Strategic Action Plan for Economic Development*, 2002. This plan identifies overall goals for local businesses and the community as well as specific sector strategies for retail, agribusiness, light industrial/manufacturing, entrepreneurial/professional services, and tourism. Overall, these strategies focus on maintaining and promoting the uniqueness of Sisters' natural, clean, and friendly environment as the City's economic base diversifies and grows. The plan seeks to reinforce the existing strengths of the local economy (tourism/retail, traditional agricultural economy, light industrial) by improving the City's infrastructure (pedestrian environment, roadway function) and promoting and collaborating business-related activities.

The *Sisters Strategic Action Plan for Economic Development* also focuses economic development efforts on targeted industries:

- Light Industry/Manufacturing
- Entrepreneurial/Small Office Home Office/Professional Services
- Tourism
- Retail
- Culture and the Arts
- Real Estate Development
- Agribusiness

Efforts to recruit and relocate businesses will be concentrated on these industries. To this end, a business relocation brochure was created by the Sisters Chambers and CATS. This effort involved many businesses, City Council members, and City staff. The purpose of this document is to encourage targeted industries to relocate to Sisters. These industries are expected to provide the types of economic opportunities appropriate for, and a benefit to, the local economy, while also being compatible with the environment and character of the City. This relocation guide describes the Sisters area, lifestyle, location and climate, community, a calendar of events, the school district, housing, local businesses, and other local resources.

The City of Sisters should focus on attracting the types of industries that will choose to locate in the City. Traditional industrial uses may not find the City attractive for their needs due to the relative isolation. Focusing on ideas such as creating and attracting better jobs and boosting incomes is a better approach than focusing on attracting more jobs. Providing a better place for business versus a cheaper place for business is also pertinent.

Companies the City hopes will be attracted to the area will tend to be smaller companies with educated workers and relatively high pay scales. The demographics of the Sisters area (affluent, well educated) will also draw companies to the area. Innovative regulations geared towards attracting the desired industries, mixed use zoning, etc. will provide a competitive advantage to help attract businesses that will contribute to Sisters' long term economic health.

Although the City hopes to attract smaller companies and industry to the area, the City acknowledges that rising land values, increasing rents, and the shortage of affordable workforce housing will continue to impact the City's ability to recruit and attract new businesses to Sisters. In recognition of these factors, as further outlined in the findings in *Chapter 10, Housing*, the North Sisters Business Park Sub-district allows the development of second story residential units above industrial operations. The additional flexibility created by this zoning district provides numerous advantages to industrial operators and will assist the City in its efforts to recruit and attract new business opportunities. The second story residential units can be utilized by industrial land owners who want/need to reside above operating industrial facilities. The units can also be utilized to provide employee housing, either as a compensation incentive or as an additional source of revenue for the industrial operator. If the units are not utilized by the industrial operator, they can serve as low-cost rental units that provide additional rental income to help offset the cost of industrial operations. By allowing limited housing with industrial uses, these low cost housing units will provide the type of workforce housing that is needed to support existing commercial and industrial operations within the City limits.

Two light-industrial subdivisions in the northern portion of the city (Sun Ranch and Three Sisters Business Parks) are unique and must be developed sensibly to achieve economic prosperity while respecting their surrounding uses. These two subdivisions are appropriate for live-work mixed use development for a number of reasons. First, both subdivisions are vacant so new policies guiding development will create a consistent and well functioning built environment. To the east of both parcels is the Sisters Eagle Airport, providing convenient small engine aircraft service. Adjacent to the north of both parcels are existing low-density rural residential uses, creating potential conflicts with intensive industrial development. To the south of both parcels lie existing light-industrial subdivisions which are ripe for more intensive development and redevelopment. The Sun Ranch Business Park is unique as it borders a commercial area to the southeast and is a gateway to downtown Sisters from the rural areas to the north. Three Sisters Business park is also unique as it is adjacent to UAR-zoned lands to the west that may be subject to future redevelopment.

The Sun Ranch and Three Sisters industrial parks are in transition areas between typically conflicting uses (residential and light industrial). The transition is also from increasingly rural areas to the north and more intensive development to the south. The development of these parcels should reflect the unique role these business parks play in adding value to the community while also protecting existing property values in the surrounding areas.

The unique location and site characteristics of the Sun Ranch and Three Sisters business parks require the city to create specific policies and development codes for these properties accomplishing the following goals:

1. Decrease opportunities for highly intensive polluting and hazardous industrial uses to protect the natural beauty of the Sisters area, city, and neighboring residents

2. Encourage economic growth in the city by making the primary uses in the business parks a combination of light manufacturing and professional services
3. Allow secondary and accessory uses such as retail and dwelling units to foster a more lively and unique development and provide an incentive for new businesses to locate in Sisters
4. Create design standards that favor the economic uses while creating attractive, healthy, and stable living environments
5. Protect the long-term economic uses of the land and prevent a reversion to intensive residential uses

9.4 POLICIES

1. The City shall guide growth in a manner that will result in a balance between economic and environmental interests.

   Tasks -

   a. The City shall maintain and enhance the appearance and function of the Commercial Districts by providing a safe and aesthetically pleasing pedestrian environment, mixed use development, and requiring adherence to the Sisters Western Frontier Architectural Design for all types of development and signage. The Sisters Western Frontier Architectural Design Theme does not apply to the Sun Ranch Tourist Commercial District. In its place a more historically accurate 1900s Rural Farm/Ranch House design standard applies. The City shall establish standards for this design theme in the Development Code.

   b. Auto Oriented developments such as restaurants with drive-up windows are not appropriate in the downtown area or Commercial District. Auto oriented uses shall only be permitted in the Highway Commercial District, Light Industrial District, and North Sisters Business Park District, and shall be limited and managed based on their impacts.

   c. The City shall assure development contiguous to commercial and residential zones is designed and built in a manner that is consistent and integrates with the character and quality of those zones.

   d. The City's Development Code should continue to allow mixed-use development within the Commercial Districts, and in transitional light-industrial areas such as the Sun Ranch and Three Sisters Business Parks (as previously noted in the findings), and small commercial uses and home occupation mixed with residential uses.

   e. Commercial and Industrial uses shall minimize their impacts on residential areas by being subject to additional development standards, i.e. buffers, setbacks, landscaping, sign regulation and building height restrictions.

   f. The City has adopted the Sun Ranch Tourist Commercial District to apply to the Conklin Guest House property. This property is intended to provide

commercial uses that will serve the needs of the nearby light industrial uses and visitors to the area. Drive through facilities are not appropriate for this zoning district.

g. Development standards shall be added to the City's Development Code for unique light-industrial parks in transition areas. Standards shall be developed to accomplish the goals outlined in the Business Recruitment and Outreach Activities findings of this chapter.

2. The City shall support the tourist industry and special events that have a positive year-round economic impact on the community.
3. The City shall continue to partner with the Community Action Team of Sisters, the Chamber of Commerce, Economic Development for Central Oregon, and other economic development agencies, to improve local and regional economic development efforts, attract businesses, and enhance and diversify the City's economic base. The City will participate with these agencies in periodic updating of the *Sisters Strategic Action Plan for Economic Development*.
4. The City should support efforts to attract businesses providing family-wage employment opportunities.
5. The City should work with area educational institutions to maintain high standards of educational opportunity.
6. The City shall ensure an adequate supply of land for the needs of commercial, mixed-use and light industrial purposes.

Goal 14: Urbanization

14.1 GOALS

"To provide for an orderly and efficient transition from rural to urban land use."

14.2 BACKGROUND

Definitions

Urban Lands: Lands inside the City of Sisters Urban Growth Boundary (UGB) for which sewer and water services are available and capable of supporting planned levels of development, including associated open space and unbuildable land.

Urbanizable Lands: Land inside the City of Sisters UGB that is designated for urban development for which sewer and water services capable of supporting planned development are not available.

Urban Services: Key facilities to support urban types and levels of development and to include at least the following: City water and sewer services, storm drainage facilities, and transportation infrastructure.

The City of Sisters' City Limits coincide with the City's adopted Urban Growth Boundary (UGB). The current (2007) city limits contains approximately 1176 gross acres. Table 14.1 below shows the approximate gross acres of lands in the Sisters UGB by land use district. The data is approximate, includes public roadways, and is based on engineering estimates and public records available to the City.

Table 14.1: Gross Acreage of Areas in Urban Growth Boundary by Land Use District

Land Use District	**Approx. Gross Acre**
Public Facility District (PF District)	
School District Properties	144.30
Forest Service Property	42.58
Middle and Elementary School Properties	19.00
Wastewater Treatment Facility and Fire Training Facility	62.80
PF District Total	**268.68**
Open Space District (OS District)	
Forest Service Property	7.56
City and State Parks including the unplatted McKenzie Meadow Park	44.80
OS District Total	**52.36**
Flood Plain District (FP District) Total (not including area in City and State Parks the OS District)	**24.00**
Commercial Districts (C District)	

Downtown Commercial District (DC) & Tourist Commercial	134.41
Highway Commercial District (HC)	66.00
C and HC Districts Total	**200.41**
Light Industrial District (LI District) Total	**101.08**
Residential (R District)	
Residential District (R District)	288.00
Residential Multi-Family District (R-MFD District)	188.90
R Districts Total	**476.90**
Urban Area Reserve District (UAR District)	
UAR ~~(Residential 2.5-acre Minimum)~~	30.00
UAR ~~(Business Park 5-acre Minimum~~ (Formerly owned by the U.S. Forest Service)	17.54
Fire Training Facility	4.00
UAR Districts Total	**51.54**
Airport District Total	**34.3**
Total Area in Urban Growth Boundary	**1,210.54**

Source: City of Sisters GIS based on Deschutes County GIS tax lots, and as amended by files CP06-01/02, Z06-01 and CP 08-02. Recalculated on 6/28/11 following the survey of the Forest Service property in 2008, and the annexation of the McKenzie Meadow Village and Fire Training Properties in 2010 - 2011.

The Conklin Guest House property was included in the UGB in 2005 with a commercial zoning designation. In 2007, the Sun Ranch Tourist Commercial zoning district was adopted and applied to the property and an additional area of 0.8 acres was added to the district. The Sun Ranch Tourist Commercial District allows uses that serve tourists and the Light Industrial areas to the west.

14.3 FINDINGS

Population Forecast

The population used in the 2005 Comprehensive Plan update was for year 2004, which was estimated at 1,490 persons (Portland State University, PRC July 1, 2004 estimates). Year 2010 census numbers showed a total population of 2038 persons. These statistics are for the Sisters City limits and Urban Growth Boundary, which are coincident. The City of Sisters (hereafter referred to as Sisters or City) population is forecast to remain small compared to the other jurisdictions, but will experience consistent growth over the long-term. Sisters uses the population forecast numbers for long-range planning purposes, including the residential buildable lands supply and demand analysis. Refer to Appendix A for City of Sisters 2004 coordinated population forecast.

Summary of Population Forecast

Table 14.2 is a summary of the City's 20-year population forecast. The expected population growth rate between 2000 and 2005 is 12.54% per year. This rate is expected to decrease during the 20-year planning period to above 3 percent per year. The year 2025 population is expected to be 3,747 people.

14.2 Population Forecast Summary

Year	City of Sisters Population [2]	5-year Average Annual Growth Rate (previous to current year)
2000	975 [1]	NA
2005	1,768	12.64%
2010	2,306	5.46%
2015	2,694	3.16%
2020	3,166	3.28%
2025	3,747	3.43%

[1] Source: PRC July 1, Official Population Estimate for City of Sisters.
[2] Source: Population Estimates by City of Sisters.

The City of Sisters' methodology for determining population is based on the current estimates of the City's population (from PRC) plus estimates of population growth based on the number of new residential building permits that will be issued in the city between 2004 and 2025. The housing unit method approximates population for the city based on the number of occupied housing units in the city multiplied by the city's average household size. Based on the number of building permits issued each year, and the number of people per household (considering vacancy rate and local demographics) it is possible to forecast how many people will be "added" to the City in the future. For years beyond 2004, the number of building permits for residential units was estimated based on past and recent building trends, then population was estimated from the growth in housing represented by residential building permit issuance.

This technique is one of the most feasible, accurate, and cost-effective among the major methods of population estimation available for small geographies such as Sisters. Using the number of building permits coupled with other demographic information to estimate population is commonly used to estimate populations for small geographic areas. Different versions of the housing unit model are used by the US Census Bureau to estimate sub-County populations and by a wide variety of cities, counties, states and special districts. The official yearly estimates of the City's population determined by Portland State University's Center for Population Research and Census are based on a housing unit method.

14.3 Housing Units and Building Permit Issuance, 1990-2000

Period	Number of Total Housing Units In City of Sisters	Average Annual Growth Rate of Building Permit Issuance
1990-2000 [1]	354 to 482 housing units	3.13%

[1] Source: 1990 and 2000 U.S. Census, Summary File 1 (SF-1) 100-Percent Data

Between 1990 and 2000, the number of housing units increased 3.13 percent/year as shown in Table 14.3. Note in Table 14.4, using the exact same source of data (U.S.

Census data), the rate of population growth was 3.51 percent per year. These two rates of average annual growth are very similar. This information demonstrates why it is appropriate to use the number of new dwelling units to predict population, in combination with other important data.

14.4 Population Growth, 1990-2000

Period	Population by Year, City of Sisters	Average Annual Growth Rates of Population
1990-2000 [1]	679 to 959 people	3.51%

[1] Source: 1990 and 2000 U.S. Census, Summary File 1 (SF-1) 100-Percent Data

The factual information presented in tables 14.3 and 14.4 supports the City's assumption that using residential building permits to approximate the growth of housing units and to predict population is appropriate when used with other information such as the number of people per dwelling unit. The rates of growth of the City's housing units and population mirror each other over a decade between 1990 and 2000 as well as during a short period such as 2001-2003. Increases in housing unit construction are mirrored by the increases in the official population estimates by PRC. Multiple sources of public data verify these conclusions.

Table 14.5 below, shows how many building permits for residential units after subtracting demolitions were issued by year in the City between 1990 and 2003. This demonstrates the slow rate of building in the early 1990's, the acceleration in anticipation of construction of the municipal sewer in 1996, the dramatic and sustained increases in issuance of building permits as the sewer became operational, and the continued rate of building permit issuance since the sewer's completion.

Table 14.5 Housing Unit Growth Rates, 1990-2003

Period	Number of Total Housing Units	Average Annual Growth Rate of Housing Construction
1990-2000 [1]	354 to 482 housing units	3.13%
2001-2003 [2]	482 to 725 housing units	14.57%

[1] Source: 1990 and 2000 U.S. Censuses, Summary File 1 (SF-1) 100-Percent Data
[2] Source: City of Sisters Building Permits for Residential Units, after subtracting demolitions.

In years 1990 through 2000, no municipal sewer was available and residential development was limited to single-family development on large (1/2 acre) lots. The relatively low average annual population growth rate of 3.68 percent per year between 1990 and 2000 reflects this when compared to the rate of population growth after the municipal sewer installation in 2001. In years 2001 to 2003 the average annual rate of population growth in the City was 13.62 percent per year, nearly four times the rate during the 1990s. In addition, the City's development codes were dramatically updated in 2001, facilitating infill development and smaller lot sizes. Thus, the conditions (new sewer and code) present in 2004 and beyond are significantly different than in the 1990's.

The population forecast assumes that the high rate of growth seen after the installation of the municipal sewer will slowly decrease and long-term growth for the remainder of the planning period will be at rates slightly higher than population and housing growth rates during the 1990s. The yearly population forecast, which is part of the Deschutes County Coordinated Population Forecast 2000-2025, is presented in Table 14.6. For a detailed discussion of the population forecast and methodology, please refer to Appendix 1.

Table 14.6: Population Forecast for City of Sisters, 2003-2025

Forecast Year	Forecasted Rate of Building Permit Growth [1]		Forecasted Residential Housing Units [2]	Forecasted New Residential Building Permits Issued/Yr. [3]	Persons per Dwelling Unit [4]	Population Forecast [5]
2003	NA		725	104	NA	1,430
2004	11.10%		805	80	1.99	1,590
2005	11.10%		895	89	1.99	1,768
2006	8.90%	**Declining**	975	80	1.99	1,927
2007	5.40%	**Influence of**	1,027	53	1.99	2,031
2008	4.30%	**New Sewer**	1,071	44	1.99	2,119
2009	4.30%		1,117	46	1.99	2,211
2010	4.30%		1,165	48	1.99	2,306
2011	3.13%		1,202	36	1.99	2,379
2012	3.13%		1,240	38	2.00	2,454
2013	3.13%		1,278	39	2.00	2,532
2014	3.13%		1,318	40	2.00	2,612
2015	3.13%	**Rate of**	1,360	41	2.00	2,694
2016	3.13%	**Building**	1,402	43	2.00	2,780
2017	3.13%	**Permit**	1,446	44	2.10	2,872
2018	3.13%	**Growth**	1,491	45	2.10	2,967
2019	3.13%	**same rate as 1990**	1,538	47	2.10	3,065
2020	3.13%	**through**	1,586	48	2.10	3,166
2021	3.13%	**2000**	1,636	50	2.20	3,275
2022	3.13%		1,687	51	2.20	3,388
2023	3.13%		1,740	53	2.20	3,504
2024	3.13%		1,794	54	2.20	3,624
2025	3.13%		1,850	56	2.20	3,747

[1] Source: Rates between 2004 through 2010 based on weighted average of growth rates before and after the construction of the municipal sewer. Rates of Building Permit Growth between 2011 and 2025 based on rate of housing unit growth between 1990-2000 as determined by the U.S. Census.

[2] Source: "Forecasted Residential Housing Units" based on "Forecasted Rate of Building Permit Growth" applied to base of 725 Residential Housing Units in 2003, and grown by the applicable rate per year.

[3] Source: Current year minus previous years "Forecasted Residential Housing Units", for example in 2004, 805 Forecasted Residential Units in 2004 minus 725 Forecasted Housing Units in 2003 equals 80.

[4] Source: Persons per Dwelling Unit of 1.99 is from the 2000 U. S. Census, SF-1. This statistic accounts for vacancy rates and second homes. The statistic increases over time as estimated here by the City of Sisters Planning Department based on the assumption that the City will approach the State of Oregon statistic of 2.4 Persons Per Dwelling Unit as determined by the 2000 U.S. Census, SF-1. In other words, the City of Sisters will become more like the state in terms of persons per household in the future.

[5] Source: Calculated by adding the total of (Total Res. Permits/Yr. in Sisters UGB x Persons Per Dwelling Unit) to previous year's Population Forecast.

Infrastructure

The City has community facilities plans for water, wastewater, parks and transportation. A voter mandated Charter amendment that Systems Development Charges be paid as development permits are issued ensures there will be adequate capacity in those systems to accommodate growth. As more building permits are issued, the amount of SDCs collected increases directly. If additional land is needed to accommodate anticipated housing, industrial, or commercial growth, the City will comply with State of Oregon requirements to provide the necessary land base. Water, sewer, and transportation

facility plans will be updated to reflect anticipated population growth, necessary infrastructure will be planned, and SDCs updated and required to fund needed improvements.

The Sisters School District has three schools, all of which are rated as excellent. Sisters High School has one of the highest average SAT scores for graduating seniors, which attracts families to the district. Sisters schools offer full educational experiences including arts and music. The District uses a place-based environmental education model called 'IEE', which teaches and promotes education by locale, and good stewardship of natural resources. The School District has recently created many public and private partnerships which help us to maintain adequate funding in challenging budgetary times

Sisters school capacities and current enrollments are as follows**;

School:	Capacity:	Current Enrollment*:	Percent:
Sisters Elementary School	525	310	59%
Sisters Middle School	459	390	85%
Sisters High School	750	504	67%

*school year 2011-2012…
**source: Jim Golden, Sisters School District Superintendent, via email on 12-16-2011.

Future Land Needs
Public Facility and Landscape Management Districts (PF and LM Districts)
Additional lands for Public Facilities are not anticipated within the planning period with the possible exception of land needed for a public works shop and additional surface dispersal of treated effluent and the training facility for the Sisters / Camp Sherman Fire District.

The Sisters School District completed its new school campus including a new high school, fields, and recreation facilities for the Sisters Organization for Athletics and Recreation on the 98-acre parcel. The site is not fully utilized and could accommodate additional development.

The United States Forest Service (USFS) Properties.
The USFS owns several properties in Sisters, including a 42.58 acre property designated and zoned Public Facilities, which is commonly referred to as the 'South Barclay Parcel'; a 7.56 acre property designated and zoned Open Space that is commonly referred to as the 'East Portal Triangle', and, until recently, a 17.54 acre parcel that is designated and zoned Urban Area Reserve and is commonly referred to as the 'North Barclay' property. The properties are generally located along the east side of Highway 20 west of Pine Street.

It is anticipated that the USFS will seek to sell most of these ~~three~~ parcels in order to fund a new headquarters building in Sisters. In 2008, the USFS attempted to sell the land but received no bids. Feedback received by the USFS and the City was that there were too many uncertainties associated with future zone changes and the likely application of the Transportation Planning Rule (TPR). This, in combination with a suddenly volatile economy, appeared to be the reason that the property did not sell in 2008. In 2019, the Forest Service made the decision to stay at the current location and sold the 17+-acre parcel north of Barclay for private development.

In 2010, the City, ODOT, DLCD and the USFS coordinated efforts, and through a $74,900 Transportation and Growth Management grant, agreed to produce two design options (Options A and B) that would establish density thresholds and land use types without triggering the TPR. A third design option (Option C) was also developed at the request of the City of Sisters. A fourth option, Option D which is referred to herein as the 'Park Option', was developed by the Technical Advisory Committee who provided input on the Park Master Plan update. ODOT Region 4 reviewed the methodology used for each of these design options, and found the methodology and street placements to be acceptable. ~~These options, and their associated development densities, are as follows;~~

However, the Forest Service long range plans changed, resulting in the 2019 sale of the property north of Barclay and the consolidation of Forest Service operations on a portion of the property south of Barclay. This departure from previous planning allows other configurations and land uses to be considered, both north and south of Barclay.

~~*Option A*~~

~~Retail / Commercial:~~	~~7 ac. (gross)~~	~~80,000 s.f. (maximum)~~
~~Highway Commercial:~~	~~5 ac. (gross)~~	~~60,000 s.f. (maximum)~~

~~Residential: 10 ac. (gross) 70 dwelling units (max.)~~
~~Light Industrial: 20 ac. (gross)~~

~~Park: 6.3 ac. (gross; the 'East Portal Triangle')~~
~~Add'l Park: min. 5 ac. (gross; can be required open space)~~

~~USFS Property – Design Option A~~

~~*Design Option B*~~
~~Retail / Commercial: 7 ac. (gross) 80,000 s.f. (maximum)~~
~~Resort Commercial: 10 ac. (gross) up to 12,000 s.f. + 20 vacation units~~
~~Residential: 10 ac. (gross) up to 160 dwelling units (max.)~~
~~Light Industrial: 15 ac. (gross)~~

~~Park: 6.3 ac. (gross; the 'East Portal Triangle')~~
~~Add'l Park: min. 5 ac. (gross; can be required open space)~~

~~USFS Property – Design Option B~~

~~*Design Option C*~~
~~Retail / Commercial: 6 ac. (gross) – 50,000 s.f. (maximum)~~
~~Resort Commercial: 9 ac. (gross) – up to 60,000 s.f. + 25 vacation units~~
~~Residential: 10 ac. (gross) – up to 85 dwelling units (max.)~~
~~Light Industrial: 12 ac. (gross)~~

~~Park: 6.3 ac. (gross; the 'East Portal Triangle')~~
~~Add'l Park: min. 5 ac. (gross; can be required open space)~~

~~USFS Property: Design Option C~~

The location of these parcels, and in particular the South Barclay Parcel is strategic to the city's downtown as a gateway into Sisters from the west side. The City anticipates that some or most of the land will be developed for urban uses related to its downtown planning theme under mixed use principals, as well as for light industrial uses. There is a possibility that some or most of this land could be

purchased through public and/or private funding for use as a park; this possibility is addressed further in Goal 5 of this document.

In the event that this land is purchased with the intent of developing the land with either commercial, residential or light industrial uses, then it is the policy of the City of Sisters that any comprehensive plan and/or zoning amendment that affects the future development of the properties must meet specific criteria in order for the City to be able to support a potential plan amendment for the property. These criteria are as follows:

1. The amendment shall be based on a 20-year land need analysis for both employment and housing needs, including for affordable housing. The analysis shall include an updated buildable lands inventory for employment and housing needs as part of the 20-year land need analysis. The analysis shall be consistent with statewide planning Goal 9 (Economic Development) and Goal 10 (Housing).

2. The amendment shall demonstrate consistency and integration with the city's ~~2008-09~~ 2018 update of its Transportation System Plan, as well as the state's Transportation Planning Rule as found in OAR 660-012.

3. The amendment shall demonstrate that it has maximized urban efficiency consistent with city and state planning requirements~~,~~ and quality in urban design~~, and complies with the city's Western Theme design standards~~.

4. The amendment shall include a development plan for the South Barclay Parcel which integrates proposed land uses, transportation and building layout and design in a manner that meets the overall community needs. The development plan shall provide detailed commitments to design context, energy efficiency and public and private financing of public improvements.

5. The amendment shall demonstrate consistency and integration with the 2011 City of Sisters Parks Master Plan which recommends between 5 and 47 acres to be dedicated for a future community or regional park.

The 2011 City of Sisters Parks Master Plan identifies service area needs within the City. To serve the needs of a diverse population, it is important that a parks system contain parks of different types and sizes distributed throughout the community. It is also important that residents have convenient access to a developed public park within their neighborhood (defined as a ¼ mile or less walking distance). Map 3-2 of the 2011 City of Sisters Parks Master Plan illustrates park service areas. Service areas of 1-mile for community parks, ½ mile for neighborhood parks, and ¼ mile for mini parks are used as a measurement to analyze how well Sisters residents are served by their parks system. Although a number of parks exist throughout Sisters, the service area analysis in the 2011 Parks Master Plan indicates that sections of the City are currently underserved or not served at all by developed parks.

The 2011 City of Sisters Parks Master Plan identifies that the central core of Sisters is well serviced by parks, with Barclay Park, Creekside Park, and Cliff Clemens Park all contributing in this area. The north-central portion of Sisters (north of Black Butte Avenue) is entirely serviced by Cliff Clemens Park and the south-central portion of Sisters (south of St. Helens Avenue) is entirely serviced by Creekside Park. Although these parks are geographically located in appropriate locations to serve these areas, both parks currently contain minimal amenities and do not provide the full range of features typically found in a neighborhood park. Outside of the central core, three general areas of Sisters are underserved by park facilities:

- Northeast – east of Cowboy Street and north of Whychus Creek;
- South – south of St. Helens Avenue and north of the southern City limits; and
- West – west of Pine Street and east of Sisters High School.

The service area analysis also indicates that the southwest portion of Sisters, south of Highway 242 and west of Pine Street, is underserved. However, this area benefits from private facilities in the Pine Meadow subdivision. The underserved areas described above consist predominately of single-family residential properties or undeveloped properties zoned for residential use. The service area analysis supports land acquisition and parkland development in the northeast, south, and west portions of Sisters, with the stated goal of establishing park facilities that serve residents and residential areas within ¼ mile. By promoting parks that are within walking distance, and within underserved areas, the City of Sisters can better serve its residents.

In addition, Sisters does not have an adopted Level of Service (LOS) standard. The basic function of the LOS is to ensure quality of service delivery and equity. It is a needs-driven, facility based, and land measured formula; expressed as the ratio of developed parkland per 1,000 residents. The City's current LOS is 3.47 acres of parkland per 1,000 residents. This is based on the estimated 2010 population of 1,935 residents. Compared to other communities of similar size, Sisters' LOS is slightly lower than average. As Sister's population increases, it will be necessary to develop additional parkland in order to maintain or increase the current LOS. In order to better serve the residents of Sisters, the 2011 Parks Master Plan recommends adopting a LOS standard of 5.0 acres per 1,000 residents.

The City of Sisters anticipates needing new land for wastewater treatment facilities above their current holdings. The City currently owns 160 acres designated for use as a wastewater treatment facility. The City will require additional land, possibly as much as 80 acres adjacent to the current site, for future treatment capacity. As additional land for facilities is required, land will be annexed into the City and UGB consistent with State and local UGB expansion policies, requirements, and laws.

A UGB expansion of 13.8 acres of Public Facility land for the wastewater treatment facility occurred in 2005 during the Comprehensive Plan update. This expansion is for the area adjacent to the shop at the wastewater treatment facility and may be used for equipment storage and a public works headquarters. This expansion is discussed in

greater detail in the UGB Findings Document, incorporated herein by reference and available from the Planning Department.

A UGB expansion of 4 acres of future Public Facility land for the Sisters – Camp Sherman Fire District occurred in 2009. This expansion affected land located immediately east of S. Locust Street leading to the city's sewage percolation ponds. This expansion is discussed in greater detail in the UGB Findings Document (2008), incorporated herein by reference and available from the Planning Department.

Flood Plain Lands (FP District)
The FP District and 100-year flood plain are not expected to change in the planning period. If improved maps of the 100-year flood plain are made available by FEMA or local survey efforts, the City will make the appropriate changes in the boundaries of this district.

Residential Lands (R and R-MFD Districts)
As found in the 2010 Sisters Housing Plan, given anticipated population growth, the existing supply of residential land by district, number of platted and planned units in subdivisions, and current density ranges, a surplus of 'R' zoned residential land to meet the 20-year demand is predicted in the planning period. This surplus was evidenced after supplies of vacant residential land were developed, as existing platted subdivisions were developed, and as infill occurred, which increased the average density in the 'R' District to nearly 9 units per acre between 2005 and 2009. As a consequence, there is not a demand for additional 'R' zoned land through the planning period. However, there are insufficient R-MFD lands to meet anticipated needs during the planning period, as described in Chapter 10 of the Comprehensive Plan. As a consequence of Sisters' tourist and service-based economy, and economic forecasts which indicate slow job growth into the future, there is a need for additional multi-family units, units targeted specifically at workforce and lower-income populations. Additionally, there is a need for housing for special needs and elderly populations, due to Sisters' higher-than-average median age. In 2005, the City included a UGB expansion of 30 acres and designated it as 'R' land, in order meet the demand for 'R' zoned land that was anticipated at the time. In 2010, the City reevaluated this demand, and found this land was better-suited as R-MFD, in order to meet the demand for multi-family, low-income and workforce housing, and housing targeted specifically at senior populations.

Commercial and Light Industrial Lands (DC, HC, LI Districts)
Given anticipated population growth, the existing supply of economic lands by district and anticipated employment by sector there are approximately 37 net buildable acres of vacant DC and HC designated lands inside the Sisters UGB. Adding approximately 12 net buildable acres of re-developable and 40 net buildable acres of developable acreage of partially developed lands, a total of 89 net buildable acres of buildable DC and HC lands are inside the Sisters UGB. Since the projected future demand is 28 net buildable acres, there is a surplus of commercial land of approximately 61 acres. Even without considering the re-development of partially developed lands, there is sufficient vacant and re-developable land in the existing UGB to accommodate demand for commercial

lands within the next 20 years. For more information see Appendix B, *Technical Report, City of Sisters Commercial and Industrial Land Needs Analysis*.

By early 2020, the amount of available LI-designated lands inside the Sisters UGB has significantly decreased. All of the light industrial parcels in Sisters (50.69 acres/89 lots) are being utilized (nearly 100% occupancy for the entire zone), with only 9 lots (6.75 acres) listed as vacant (still utilized, but not developed). Development within the North Sisters Business Park zone has increased significantly and the occupancy rate is 100%. Current vacancy rates regionally are also lower than historic rates. Based on recent summaries by Economic Development for Central Oregon (EDCO), "Sisters has not had enough available light industrial inventory to take advantage of opportunities." EDCO further reports that the majority of light industrial lot needs in the area are currently less than one acre, but some flexibility in sizing is desired to accommodate an opportunity for a larger project.

~~"There are approximately 35.68 net buildable acres of vacant LI designated lands inside the Sisters UGB. Adding 3 net buildable acres of re-developable and 17 acres of developable acreage of partially developed lands, a total of 55.68 acres of buildable light industrial (LI) lands are available inside the Sisters UGB. There is a projected demand for 34 net buildable acres of industrial land inside the Sisters UGB by the year 2025. A surplus of 21.68 acres of net buildable industrial land is predicted based on anticipated supply and demand of industrial lands until the year 2025. There is a sufficient supply of vacant acreage alone to satisfy anticipated demand, without considering re-developable and partially developed lots. For more information see Appendix B."~~

Airport (A District)
In 2012, the citizens of the Sisters voted to annex the Sisters Eagle Airport, 34.3 acres, by popular vote during the November 2012 general election, by approximately 85%.
The Sisters Eagle Airport was then annexed into the City of Sisters on March 15, 2014.

Annexing the Sisters Eagle Airport and rezoning it to Airport District (A) provides an orderly and efficient transition from rural to urban land use. Annexing the Sisters Eagle Airport is an efficient accommodation of land needs because it will allow the community to use an existing resource that has been developed historically adjacent to the City and is approved by the Oregon Department of Aviation (ODA).

There are no other available locations to develop an airport within the UGB. It is more efficient to use an already developed airport rather than develop a redundant airport to meet the community's needs.

Urban Area Reserve (UAR District)
The City has adopted and mapped the Urban Area Reserve (UAR) Sub-District which contains a minimum lot size of 2.5 acres to preserve land for future development at urban densities. There are a total of 51.54 acres of UAR inside the current UGB. Of this, 30 acres are intended as a holding zone for future residential development re-zoning to residential uses. As part of the UGB Site Evaluation process, the UAR properties were examined for use as residential properties since the UAR is a holding zone for residential uses. City staff

estimates that 8.8 gross acres of R-MFSD can be obtained from the re-zoning and re-development of these properties. 30 acres of UAR-zoned land was removed from the inventory in 2010 when McKenzie Meadow Village annexed into the city limits and was subsequently re-zoned from UAR 10 to R-MFD, PF and OS.

The Needs Assessment and Site Selection findings are found separately from this Comprehensive Plan in the 2008 burden of proof statement incorporated herein by reference, and available from the Planning Department.

23 acres of UAR inside the City Limits/UGB are owned by the U.S. Forest Service and are intended as a holding zone for the future development of a business park or a light industrial area. While this parcel is zoned UAR, a holding zone for residential development, it is intended as a holding zone for light industrial/business park uses. If this parcel is rezoned it would be for light industrial/business park uses or for a relocated Forest Service Ranger Station. In 2019, the Forest Service sold the property north of Barclay to a private developer, obviating the possibility of the use of the property for a relocated Forest Service Ranger Station.

The remaining 13.8 acres of UAR land are owned by the City (described earlier herein) as possible future use for equipment storage and a Public Works warehouse / maintenance building.

Urban Growth Management

Any proposal to annex new areas to the City must demonstrate that sufficient public facilities (including water, sewerage and transportation) are available or will be installed in conjunction with any land development. In Sisters, the annexation must also be approved by a majority of voters in an election. New policies included in the section below also guide urban growth consistent with State of Oregon laws.

State of Oregon laws require sufficient supplies of buildable lands inside the UGB to accommodate anticipated demand, provide choices in the marketplace, and livability. Some factors influencing the need for land include population growth, required development densities, economic development goals, land needs of public institutions, and market forces. Some specific ways to accommodate the 20-year need for residential land include expanding the UGB, re-zoning UAR lands to urban zoning designations, increasing residential densities, and converting non-residential lands to residential use.

UGB Expansion

The City of Sisters completed a modest Urban Growth Boundary expansion during the 2005 Comprehensive Plan update process to implement its amended Sisters Urban Area Comprehensive Plan policies and tasks. This expansion and its compliance with applicable state and local requirements is presented in greater detail in a UGB Expansion Findings document, incorporated herein by reference. The Urban Growth Boundary (UGB) expansion occurred for number of purposes, including:

1. accommodating anticipated 20-year demand for residential uses such as single-family housing
2. adding additional land for Public Facility uses, specifically a new City Public Works Department headquarters building (office, maintenance, and storage facility) adjacent to the existing City of Sisters wastewater treatment facility,
3. bringing a small existing developed urban use on an Exclusive Farm Use parcel adjacent and outside the City of Sisters (City) UGB inside the UGB,
4. bringing a small Exclusive Farm Use parcel entirely surrounded by the City UGB into the UGB.

The 2005 Plan update brought a total of approximately 53 acres of land into the City of

EXHIBIT F: PUBLIC NOTICE & COMMENTS

Public Notice & Comments: Notice of the proposed Comprehensive Plan Map, Comprehensive Plan Text, & Zoning Map Amendment, was posted in accordance with SDC 4.1.500.B. Staff received one comment from Caprielle Foote Lewis, Economic Development of Central Oregon, as of September 3, 2020 related to file numbers CP 20-03/ZM 20-02.

Public comments that are received after the completion of this staff report will be part of the public record and added to the project file.

EDCO MOVE START GROW

September 3, 2020

Dear City of Sisters Planning Commission:

FILE NUMBER(S): CP 20-03, ZM 20-02

I sincerely apologize that I am unable to attend the September 10th Planning Commission meeting and discussion regarding the future development of the middle parcel of the current USFS property. I am on vacation next week with limited connectivity.

I do encourage your consideration of Approval for the Comprehensive Plan Map and Zoning Map Amendment to re-designate and rezone this property.

Your approval will address what I (and the Sisters Country Economic Development Board) hear as one of our top employers' concerns, workforce housing. In addition, it will increase employment land inventory within the City limits creating new opportunities for entrepreneurism.

North Sisters Business Park (Sun Ranch and Three Sisters) has been developing quickly these past few years with several new projects slated to begin this year and next. Despite the current economic challenges, there is high demand for both live/work and light industrial inventory in Sisters.

I am happy to address any questions upon my return. Thank you for your dedication and service.

Best regards,

Capi

Caprielle A Lewis, *Sisters Area Director*

Economic Development for Central Oregon

520 E. Cascade
Sisters, OR 97759

541.977.5683
www.edcoinfo.com

EXHIBIT G: AGENCY REVIEW COMMENTS

Notices were sent to City Departments and other affected agencies for comment. The following Department and Agency comments were received:

PUBLIC WORKS (PAUL BERTAGNA)/ENGINEERING (ERIK HUFFMAN & JOE BESSMAN):

See attached.

ODOT (DON MOREHOUSE)

See attached.

SISTERS/CAMP SHERMAN FIRE DISTRICT (DOUG GREEN):

No comments.

CENTRAL OREGON ELECTRIC COOPERATIVE (PARNELI PERKINS):

CEC has no concerns.

HIGH COUNTRY DISPOSAL (ABIE BURKUS):

No Comments.

SISTERS AIRPORT (DAVE CAMPBELL)

No comments.

520 E. Cascade Ave.
P.O. Box 39
Sisters, OR 97759

(541) 323-5212
Fax: (541)549-0561
www.sisters.or.us

CITY OF SISTERS

Public Works Department

TO: Paul Bertagna, Director of Public Works

FROM: Erik Huffman, City Engineer

DATE: July 27, 2020

SUBJECT: CP 20-03, ZC 20-02 The Woodlands Engineering Review

Zone Change: 201 N Pine Street

Streets Review:

Separate review document to be submitted to address transportation impacts.

Water Review:

Water Infrastructure

Existing Conditions
10" water main exists along the west boundary of the property, within an easement to be granted in coordination with USFS.
Variable size water main exists along the east boundary of the property in Pine Street (8"-12" variable)
No water main exists in Barclay Drive along the property boundary.
The south boundary has no water main, however an existing 10" main exists across the USFS property south of the boundary.

Proposed Improvements
None

Additional Requirements:
No water mains or other infrastructure are identified in the Water Capital Facilities Plan on the subject property. Development of the property will require looping of water mains in general and will require all water mains for the development to be extended to and through the subject property. All water infrastructure shall be constructed per City of Sisters Standards and Specifications.

Water Right Mitigation

Existing Conditions
The subject property has 127.4 EDUs of allocated water use per the master plan.

Proposed Improvements
The developer has proposed a water mitigation fee for the anticipated EDU increase on the property. The water mitigation fee is based on typical City calculations for water mitigation. The calculated water right acreage is 16.37 acres at $6,800 per acre, a calculated total of $111,316.

Additional Requirements:
Water mitigation fees for 16.37 acres of water rights shall be required as part of development. Fee amount shall be based on current water right acre cost. The first 127 EDU's of development on the subject property do not require water mitigation fee. Developer shall provide information at building permit application indicating whether building permit is within the first 127 EDU's. All EDU's following the 127th EDU shall require a water mitigation fee.

Sewer Review:

Sewer Infrastructure

Existing Conditions
A portion of the subject property flows toward the City's 15" trunk line along the west and south boundaries of the property. The majority of the site flows toward the City's Wastewater Pump Station #2.

Proposed Improvements
324.5 EDU's are proposed for the subject property.

Additional Requirements
Pump Station #2 is nearing capacity and the additional flows identified in the application will require wetwell and emergency backup generator upgrades. A fee of $72,972.97 is required to mitigate the impacts to Pump Station #2. This fee is due prior to recording of any plat or approval of any building permit on the subject property.

For any phase of development which is planned to exceed a total overall property development of 127 EDU's, infrastructure improvements for that phase shall include the re-direction of the existing force main from Pump Station #2. The force main shall be reconstructed so that its outfall in Barclay Drive is abandoned and the outfall is at the City's 15" trunk line.

The City's Wastewater Facilities Plan includes development of a new Westside Pump Station which is to be located adjacent to the subject property. The additional flows identified in the application, those flows above the anticipated in current zoning, will require that the Westside Pump Station be designed for larger flows than originally anticipated. A fee of $286,733.12 is required to mitigate the impacts to the Westside Pump Station. The fee shall be due at the time of final plat of any phase of development in which 127 EDU's for the overall property is anticipated to be exceeded.

From:	Joe Bessman
To:	Nicole Mardell; Paul Bertagna; Erik Huffman PE PLS CWRE LEED AP (ehuffman@beconeng.com); Garrett Chrostek
Subject:	Forest Service Rezone Review
Date:	Friday, July 24, 2020 2:40:26 PM
Attachments:	1237review2.pdf

Good afternoon,

Enclosed is my review of the Forest Service property. They have +78 PM trips (compared to Kevin Spencer's 201) and I am calculating a $38,785 pro-rata payment. This is different than their number of about $24,000. Note too that this is only a comparative analysis for the rezone that assesses the difference in trips, and unlike the Spencer site this is not a comparison with "0"; this means that we will need separate entitlements review based on their site plan as well.

Let me know if you have any questions on this!

Thanks,
Joe

Joe Bessman, PE
Principal, Owner

Transight Consulting, LLC
Bend, Oregon
office: (458) 202-5565
cell: (503) 997-4473
email: joe@transightconsulting.com
web: https://transightconsulting.net/

TRANSIGHT CONSULTING, LLC
Transportation Engineering and Planning Services

Date:	July 24, 2020
To:	Melissa Webb, PE, Lancaster Mobley Engineering
Cc:	Paul Bertagna and Nicole Mardell, City of Sisters Erik Huffman, PE, City Engineer
From:	Joe Bessman, PE
Project Reference No.:	1237
Project Name:	Sisters Woodlands TPR Review

This memorandum follows the prior June 30, 2020 comments on the Sisters Woodlands project based on the revised traffic study dated July 13, 2020 from Lancaster Mobley. The proposed project is rezoning a portion of the Forest Service project from Public Facilities, Urban Area Reserve, and Open Space to North Sisters Business Park, Downtown Commercial, Multifamily Residential, and Open Space. The application is for a rezone only with no concurrent site plan application.

For a rezone analysis, the requirements within the Transportation Planning Rule section on Plan and Land Use Regulation Amendments (OAR 660-12-0060) provides the applicable review criteria. Essentially, the applicant is required to provide a comparative analysis of the potential impacts of the current zoning and those of the proposed zoning to identify how long-range infrastructure plans are impacted.

The subject property has already been contemplated for higher intensity development within the adopted Transportation System Plan (TSP). This plan followed a Transportation Growth Management (TGM) grant from ODOT that explored various mixed-use concepts for the property. With this prior work, the Transportation System Plan was very specific about the future redevelopment potential of the overall Forest Service lands. The subject application includes approximately 78 percent of these overall lands, and so assumed 78% of the previously allocated trips. Even without this prior planning, the portion of the property zoned for *Public Facilities* could develop with fairly intense uses (library, DMV, or school use) resulting in fairly intense development scenarios. By a similar approach, the proposed inclusion of North Sisters Business Park to 4.93 acres could potentially include more intense uses such as medical offices, restaurants, pubs, or a coffee shops.

Overall, the applicant's comparative analysis of the existing zoning (based on the specific TSP assumptions) and the proposed zoning shows a *reasonable* worst-case scenario that could produce an approximately +78 weekday p.m. peak hour trip increase on the transportation system. While not binding with this rezone application, the applicant's contemplated uses for the property show a reduced impact of only +43 weekday p.m. peak hour trips.

The applicant's traffic study reviewed operations at six critical intersections that form key connections with the alternate route or the US 20 corridor. Of these, the analysis shows long-term impacts at the following intersections:

- US 20/Pine
- US 20/Locust

Mitigation proposed by the applicant is consistent with the adjacent rezone application, which is provision of payments toward improvements that will benefit the implementation of the Alternate Route. It is requested by the applicant that the City and ODOT make findings that the pro-rata payment toward these transportation improvements will outweigh the impacts of the project. The City and ODOT have this flexibility within the TPR, as well as the ability to consider the benefit of added traded sector jobs within the industrial lands.

Given the location of the site and the areas impacted, the same methodology that was proposed for the adjacent rezone was applied. This was premised on the following:

The specific improvements that were identified by the City and ODOT include the following:

- Variable Message Signs for eastbound and westbound US 20 traffic (Est. $400,000 with overhead mount, cabinet, and wireless communication system).
- Alternate Route Wayfinding Signage (Est. $10,000 with fabrication/installation)
- Completion of single-lane US 20/Locust roundabout (Assumed funded, $0)
- Completion of Barclay/Locust roundabout (50% costs from SDC, 50% unfunded - $1,250,000)

Total Unfunded Projects: $1,660,000

Estimated Pro-Rata Impact to US 20: 35 / 1,498[1] Through Trips = 2.34%

= $38,785.05

The specific impacts of the rezone will not occur until projects are built, and additional site-specific analysis will also be required to support the mix of actual uses.

Please let me know if you have any questions on this completeness review. I can be reached at (503) 997-4473 or via email at joe@transightconsulting.com.

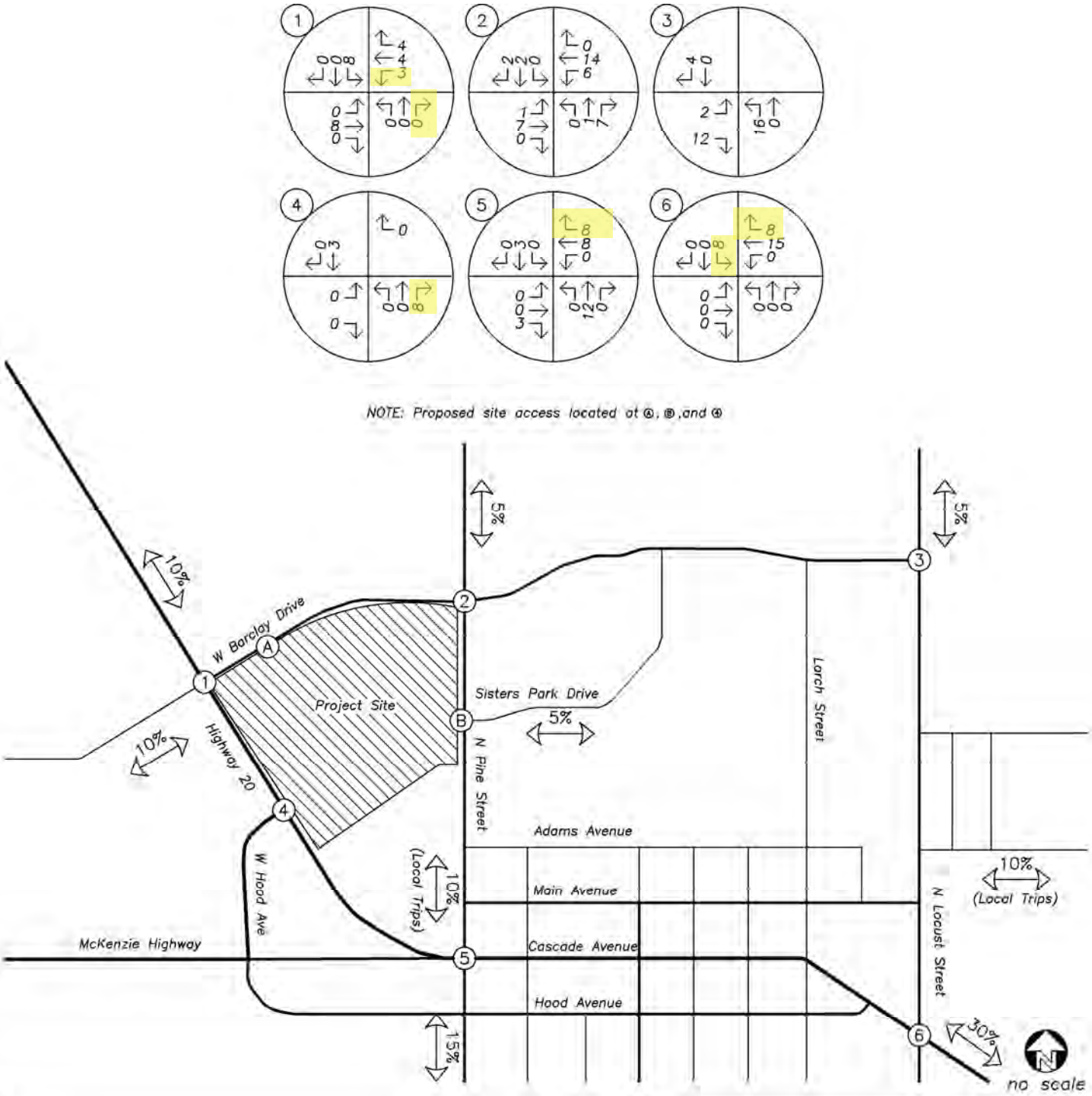
Attachments:

- Weekday PM Peak Hour Trip Impacts

[1] Based on projected 2040 highway through trips at US 20/Pine Street as identified within Figure 6 of the Spencer Rezone TIA (868 eastbound, 630 westbound)

XX% PERCENT OF PRIMARY TRIPS

TRIP GENERATION			
	IN	OUT	TOTAL
PM	78	35	113



lancaster mobley

SITE TRIP DISTRIBUTION & ASSIGNMENT

Proportional Share Mitigation

PM Peak Hour

Figure 7

Sisters Woodlands

7/9/2020

TRANSIGHT CONSULTING, LLC
Transportation Engineering and Planning Services

Date:	June 30, 2020
To:	Todd Mobley, Lancaster Mobley Engineering
Cc:	Paul Bertagna and Nicole Mardell, City of Sisters Erik Huffman, PE, City Engineer
From:	Joe Bessman, PE
Project Reference No.:	1237
Project Name:	Sisters Woodlands TPR Review

This memorandum provides formal review comments on the May 22, 2020 report submitted by Lancaster Mobley Engineering for the Sisters Woodlands Transportation Planning Rule analysis. The proposed application seeks to rezone the northern Forest Service parcel (201 N Pine Street) from Public Facilities, Urban Area Reserve, and Open Space to a combination of North Sisters Business Park, Downtown Commercial, Multifamily Residential, and Open Space. The application does not include a concurrent site plan and so assesses a reasonable "worst case" trip generation scenario, noting that future development plans are likely to be less intense.

The applicable criteria within a zone change analysis is the Transportation Planning Rule (Oregon Administrative Rule 660-12), and specifically section -0060 addressing *Plan and Land Use Regulation Amendments.* Effectively, the Transportation Planning Rule establishes the requirements for agencies to coordinate transportation and land use, develop a safe and efficient multi-modal system, and identify funding mechanisms to ensure that the necessary infrastructure can be provided as required. For a rezone effort the applicant must demonstrate whether the changes to the land use assumptions modify the system needs (create a "significant impact"), and if so, identify appropriate mitigation measures or changes to bring it back into compliance with State requirements. As such, the transportation analysis for a rezone is premised on the assumptions in the adopted Transportation System Plan.

When the 2010 Transportation System Plan was developed by DKS the Forest Service was in the process of reviewing various redevelopment scenarios for their property. As cited on page 112 of the City's adopted Comprehensive Plan:

> *"The USFS owns several properties in Sisters, including a 42.58 acre property designated and zoned Public Facilities, which is commonly referred to as the 'South Barclay Parcel'…"*

The Comprehensive Plan states that in 2010 through a Transportation Growth Management project the City, USFS, DLCD, and ODOT coordinated efforts to review density thresholds and land use types that would not trigger the Transportation Planning Rule. Four separate development scenarios were reviewed with varying mixes of retail, residential, and industrial uses, though it does not appear that a single scenario was adopted.

The 2010 Transportation System Plan was developed and accounts for these properties. The travel demand model prepared as part of this effort assumed that the "South Barclay Parcel" would include 60 retail employees, 25 service employees, and 5 "other" employees. This assumed scenario was projected to generate 312 weekday p.m. peak hour trips. However, while referred to as the "South Barclay Parcel"

this reflects trips from the 42.6 acres that includes the 32.40-acre subject property and the southern 11.22-acre USFS parcel[1], which is planned to retain its current USFS uses (see Figure 1). No changes to this forecasting was provided in the 2018 Transportation System Plan Update, so these land use assumptions remain valid.

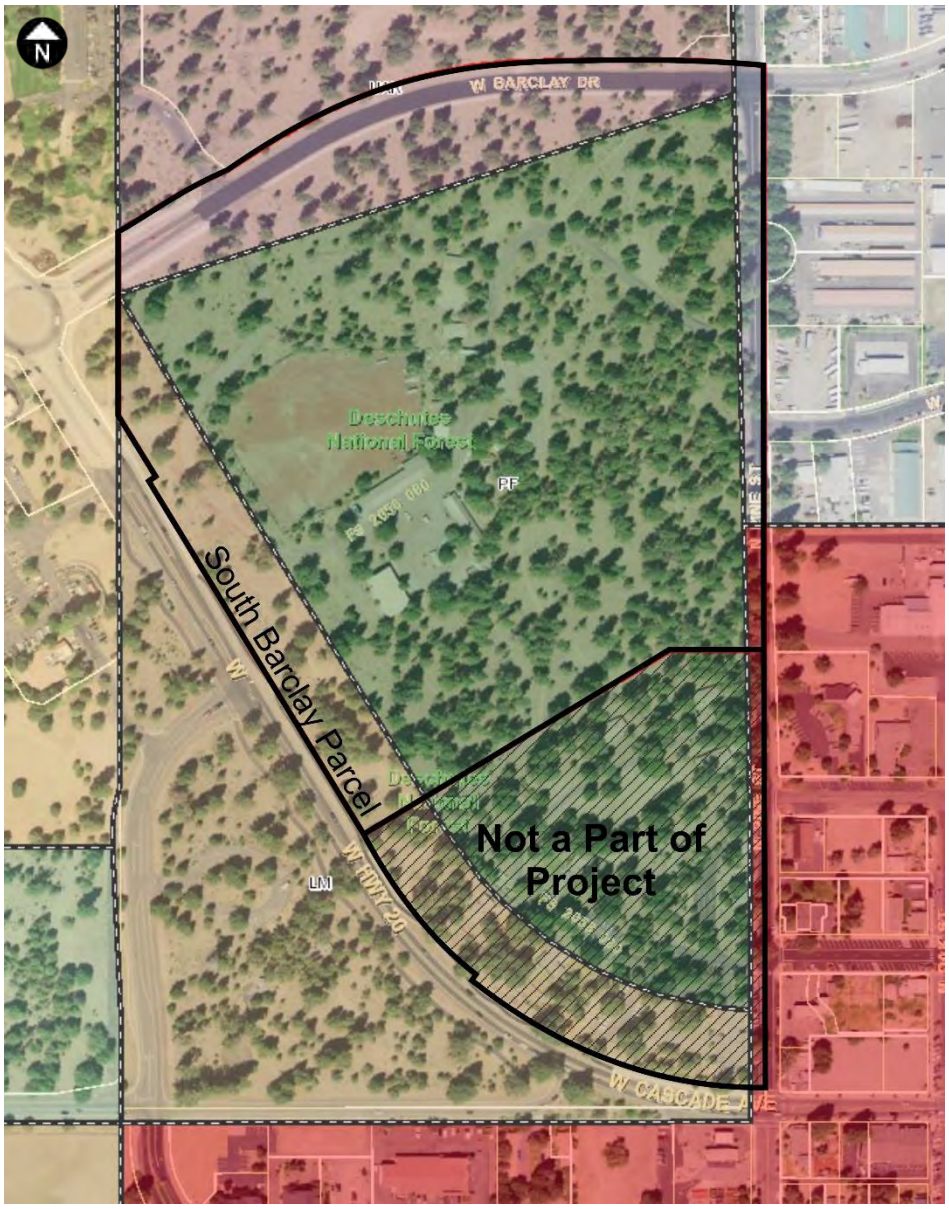


Figure 1. "South Barclay Parcel" and Comprehensive Plan designations – note that the hatched parcel is not included in the rezone and should be omitted from previously assigned trips.

[1] Acreages cited are as reported within DIAL (https://dial.deschutes.org/)

Accordingly, the analysis should be revised to proportionately consider the individual acreage of developable PF lands within each parcel (or alternatively the developable areas of each). Figure 1 illustrates the two parcels and the current Comprehensive Plan boundaries. As shown, a direct comparison of acreage would include the non-buildable right-of-way along Barclay Road and Pine Street. Considering only the PF zoned lands the subject property is approximately 78% of the "South Barclay Parcel" and so would only have been assigned 243 of the 312 weekday p.m. peak hour trips. This would then increase the impact of the rezone from the +44 weekday p.m. peak hour trips that were assessed to instead review +113 weekday p.m. peak hour trips.

Please let me know if you have any questions on this completeness review. I can be reached at (503) 997-4473 or via email at joe@transightconsulting.com.

TRANSIGHT CONSULTING, LLC
Transportation Engineering and Planning Services

Date:	June 30, 2020
To:	Todd Mobley, Lancaster Mobley Engineering
Cc:	Paul Bertagna and Nicole Mardell, City of Sisters Erik Huffman, PE, City Engineer
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Project Reference No.:	1237
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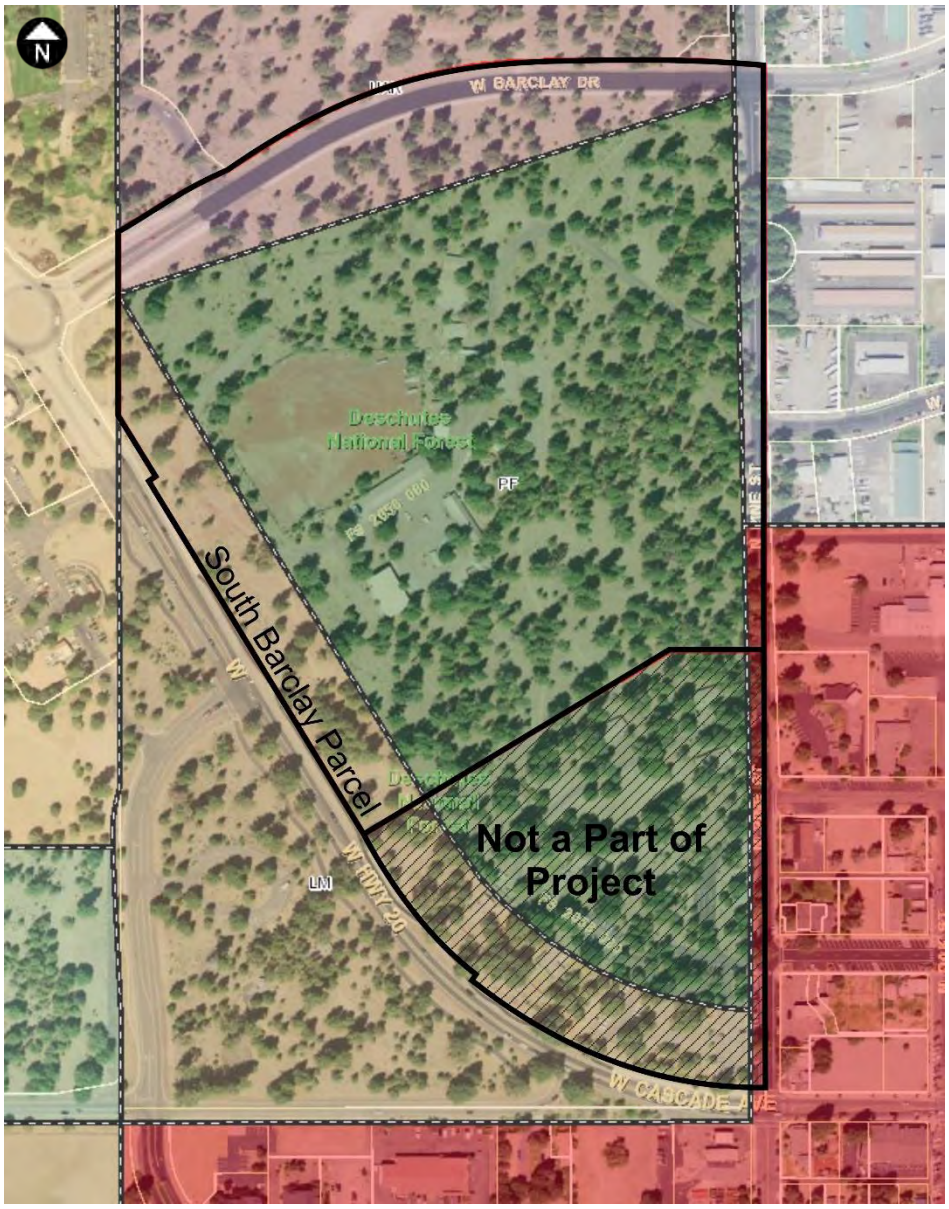

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[1] Acreages cited are as reported within DIAL (https://dial.deschutes.org/)

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Please let me know if you have any questions on this completeness review. I can be reached at (503) 997-4473 or via email at joe@transightconsulting.com.

From:	MOREHOUSE Donald
To:	Nicole Mardell
Cc:	BARRETT Mark S; AMITON David; SMITH Aaron K; SCHOLTES James M
Subject:	RE: Request for Agency Comments (CP 20-03, ZC 20-02)
Date:	Thursday, July 2, 2020 1:02:54 PM
Attachments:	SistersWoodlandsResponseMOREHOUSE.docx.pdf

Hi Nicole,

I have attached our response to CP 20-03, ZC 20-02 (Sisters Woodlands Rezone/Re-designation) to this email. Let me know if you have any further questions and have a great 4th of July Weekend!

Don Morehouse
Senior Transportation Planner
ODOT Region 4
Desk: (541) 388-6046
Personal Cell: (805) 458-3320
Work Cell: (541) 233-6558
Donald.Morehouse@odot.state.or.us

***I will be working from home for the week of June 29-July 3:*

- *Monday - Thursday (7:30AM-5:00PM)*
- *Friday - (7:30AM-11:30AM)*

Oregon

Kate Brown, Governor

Oregon Department of Transportation
Region 4 Headquarters
63055 N. Highway 97
Bend, OR 97703
(541) 388-6180
FAX (541 388-6231

DATE: 7/2/20

NICOLE MARDELL, PRINCIPAL PLANNER
CITY OF SISTERS COMMUNITY DEVELOPMENT
520 EAST CASCADE
PO BOX 39
SISTERS, OR 97759

Project Name: Sisters Woodlands Rezone/Re-designation	**Applicant:** PX2 Investments, LLC
Jurisdiction: City of Sisters	**Jurisdiction Case #:** CP 20-03, ZC 20-02
Site Address: 201 N. Pine Street.	**Legal Description:** 151005D000 **Tax Lot(s):** 200
State Highway: US 20	**Milepost:** Roughly 100.1

ODOT Response

Thank you for sending agency notice of a request for approval of a Comprehensive Plan/Map Amendment and Zone Change to alter the designation of a 35.8 acre property from Urban Area Reserve (UAR), Open Space (OS), and Public Facilities (PF) to Multi-Family Residential (MFR), Downtown Commercial (DC), North Sisters Business Park (NSBP), and Open Space (OS). ODOT has the following comments pertaining to the Sisters Woodlands Transportation Impact Study (TIS) dated May 22, 2020:

- Trip Generation – The TIS uses existing trips from the model run in 2010 (to support the TSP). The TIS should compare the existing ITE Trip rates, based on existing land use potential, draw a comparison to that versus what was pulled from the model. This could impact the remaining analysis, but it's likely the ITE trip for existing is higher than what was in the model so it may just be a check-point for proceeding as is.

- Trip Generation – A trip cap (+10% of TIS Trip Generation?) may be appropriate to verify impacts are mitigated based on this site plan and future site plan that actually gets developed.

- Mitigation – It should be noted that a TIS will be needed when the actual site develops and additional mitigations may be necessary. Also, how does the development proposed to mitigate the impacts at US 20/Pine Street?

You may contact me at 541-388-6046 if you have any further questions or require additional information on our response to this proposal.

Thank you,

Don Morehouse

Don Morehouse
Senior Transportation Planner, Development Review

Please send any further project related correspondence to:

ODOT Region 4 Planning
Development Review
63055 N. Highway 97, Bldg M
Bend, OR 97703

Donald.Morehouse@odot.state.or.us

Development Review Planner: Don Morehouse	541.388.6046
Region 4 Traffic Manager: Mark Barrett	541.388.6120
District Contact: Aaron Smith	541.388.6054

From: Perkins, Parneli
To: Nicole Mardell
Subject: RE: Request for Agency Comments (CP 20-03, ZC 20-02)
Date: Friday, June 5, 2020 8:28:48 AM
Attachments: image001.png

CEC Has no Concerns
Thank you

Parneli Perkins • **Central Electric Cooperative, Inc.** • Lands Specialist
Office: 541.312.7747 | Fax: 541.923.3549 | pperkins@cec.coop
2098 NW 6th St., PO Box 846, Redmond OR 97756 www.cec.coop

This e-mail message contains information that may be confidential. Use by parties other than the intended recipient is unauthorized and prohibited.

From: Nicole Mardell <nmardell@ci.sisters.or.us>
Sent: Friday, June 5, 2020 8:00 AM
To: Paul Bertagna <pbertagna@ci.sisters.or.us>; Erik Huffman <ehuffman@beconeng.com>; 'Joe Bessman' <Joe@transightconsulting.com>; Perkins, Parneli <pperkins@cec.coop>; 'Burkus, Albert' <ABurkus@republicservices.com>; 'Doug Green' <dgreen@sistersfire.com>; 'Peter Gutowsky' <Peter.Gutowsky@deschutes.org>; 'MOREHOUSE Donald' <Donald.MOREHOUSE@odot.state.or.us>
Cc: 'Garrett Chrostek' <Chrostek@bljlawyers.com>; 'ian.reid2@usda.gov' <ian.reid2@usda.gov>
Subject: Request for Agency Comments (CP 20-03, ZC 20-02)

WARNING: This email is not from a CEC email address.
Please do not click links or open attachments unless you requested them and know the content is safe.

Good morning,

We have received an application for a Comprehensive Plan/Map Amendment and Zone Change. The attached pdfs include the application form, existing and proposed Comprehensive Plan and Zoning Maps, and water and sewer analysis. The application materials are large in file size and will be posted to Accela later today. Please send your comments and recommended conditions of approval to me (nmardell@ci.sisters.or.us) by Wednesday, July 1, 2020.

File #s: CP 20-03, ZC 20-02
Applicant: Paul Schneider, PX2 Investments LLC
Owner: US Forest Service
Site Location: 201 N Pine Street, Sisters OR 97759
Tax Map and Lot: 151005D000200
Request: The applicant is requesting approval of a Comprehensive Plan Text and Map amendment and a Zoning Map amendment to alter the designation of a 35.8 acre property from Urban Area Reserve (UAR), Open Space (OS), and Public Facilities (PF) to Multi-Family Residential (MFR), Downtown Commercial (DC), North Sisters Business Park (NSBP), and Open Space (OS).

EXHIBIT H: STAFF RECOMMENDED CONDITIONS OF APPROVAL

Based on the submitted plans and foregoing findings, Staff recommends that the Planning Commission recommend that the City Council approve the land use applications in files CP 20-03/ZM 20-02 subject to the following conditions of approval. **All conditions shall be met prior to master plan application,** unless otherwise stated within each condition of approval. References to the subject property refer to the property subject to this CP 20-03/ZM 20-02. All payment amounts are in 2020 dollars. Amounts will be adjusted for inflation on January 1 of each calendar year proportionate to the yearly change in the Consumer Price Index for All Urban Consumers for the West Region, as published by the U.S. Bureau of Labor Statistics or similar inflation index.

Planning

1. Prior to dividing the property or obtaining site plan approval, the applicant shall submit a master plan application for the entirety of the subject property.
2. Prior to Master Plan approval, the applicant shall submit preliminary plans for the use of the 3.85-acre Open Space area to the City for review.
3. Within 30 days after the approval becomes final, Applicant will record a conditions of approval agreement against the subject property in form satisfactory to City to place future owners on record notice of these conditions of this approval.

Public Works & Engineering

Transportation

4. A payment of $38,785.05 shall be paid by Applicant as its proportionate share of improvements along US 20 and the parallel Alternate Route to support east-west mobility needs along the US 20 corridor.
5. Additional traffic analysis will be required for subsequent land use applications as prescribed in the Sisters Development Code, which may require additional mitigation.
6. Transportation System Development Charges still apply to this property and will be assessed at the time of site plan application and/or building permit.

Water

7. Development of the property will require looping of water mains in general and will require all water mains to be extended to and through the subject property. All water infrastructure shall be constructed per City of Sisters Public Works Standards and Specifications.
8. The first 127 EDUs of development on the subject property do not require water mitigation fee. Developer shall provide information as part of each building permit application indicating the aggregate number of EDUs developed on the subject property. Each EDU following the 127th EDU shall require a water mitigation fee of $565.05 per EDU.
9. A stamped engineering memo must be included as part of each site plan application indicating the number of EDUs proposed, total EDUs for all development on the subject property to date, and confirmation of required system pressure at peak demand for the development subject to site plan approval. If required system pressures cannot be met, mitigation satisfactory to the City shall be required prior to the issuance of any building permits in furtherance of the proposed site plan.
10. Water System Development Charges still apply to this property and will be assessed at the time of site plan application and/or building permit.

Sewer

11. Prior to recording the initial land division plat or issuance of the initial building permit, whichever occurs first, a fee of $72,972.97 is required to mitigate the impacts to Pump Station #2 including wet well and emergency backup generator upgrades.

12. Development resulting in excess of 127 EDUs in the aggregate will require infrastructure improvements that re-direct the existing force main from Pump Station #2 to the City's trunk line. In the event of a phased subdivision application, improvements are required at the time of final plat for the phase that exceeds 127 EDUs.
13. Any development on the subject property in excess of 127 EDUs in the aggregate will require a fee of $280,768 to mitigate the impacts to the Westside Pump Station.
14. A stamped engineering memo must be included as part of each site plan application indicating the number of EDUs proposed, total EDUs for all development on the subject property to date, and peak flow for the proposed development subject to site plan review. If peak flows exceed maximum operating conditions as determined by AWWA guidelines, applicant shall be required to provide mitigation satisfactory to the City prior to any building permits in furtherance of the proposed site plan.
15. Sewer System Development Charges still apply to this property and will be assessed at the time of site plan application and/or building permit.

----------*End of Conditions*----------

PLANNING COMMISSION
Agenda Item Summary

Meeting Date: September 10, 2020 **Staff:** N. Mardell & C. Misley

Type: Discussion **Dept:** CDD & CMO

Subject: Discussion of Comprehensive Plan Update and Committee Structure

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Action Requested: Direction to move forward with solicitation of applications for comprehensive plan committees and create draft resolutions to create those committees.

Summary Points:

The update to the City's Comprehensive Plan is officially underway. A lot of background work is currently getting going by the consultants, Angelo Planning Group (APG), and City staff. Additionally, APG is prepping a public engagement plan to layout out a strategy and roadmap for a robust public engagement process as a foundation for this project. An integral part of this strategy is utilizing committees to inform and manage the process and overall project. In order to stay on our timeline, we have been discussing the structure of these committees and should proceed with initiating recruitment and creation.

Preliminary discussions occurred last month between Andrea Blum, City Councilor, Jeff Seymour, Planning Commission (PC) Chair, Cris Converse, PC Vice-Chair, Nicole Mardell, Principal Planner, Kerry Prosser, City Recorder, APG, and Cory Misley to brainstorm approaches to public engagement and committee structures. We have prepared what we believe to be a balance between effectiveness and efficiency getting both deep and broad community input while streamlining the management of the committees and project.

The draft structure includes two committees: Stakeholder and Community Advisory. The Community Advisory Committee (CAC) *represents a wide variety of community interests and forms broader policies to be considered by the Stakeholder Committee, Planning Commission, and ultimately City Council. They represent the on-the-ground community interest.* The Stakeholder Committee (SC) is comprised of agency partners to provide technical expertise and City Council/PC members to provide elected representation and *its function is intended to oversee the process, provide feedback on work done by the Community Advisory Committee, and support the draft goals/policies prior to the public hearing process.*

Tentatively, we would open recruitment and acceptance of applications for the CAC the middle of September through October 9th. At the same time, we would be discussing with existing City Committee members their interest in participating, and extending invitations to partner agencies for the SC. We would conduct the interview process in the middle of October and be prepared to appoint to the Committees at the City Council meeting either October 28th or November 4th. There is tentatively scheduled a joint City Council/PC meeting on Thursday, October 15th to further discuss and shape the public engagement planning for the Comprehensive Plan update.

Attachments: Draft Committee Structure for the Comprehensive Plan Update

CITY OF SISTERS 2020-2021 COMPREHENSIVE PLAN UPDATE
COMMITTEE ROSTER

Note: CDD Staff and Consultant Team will staff meetings and prepare materials for review

STAKEHOLDER ADVISORY COMMITTEE *Purpose: The Stakeholder Committee oversees the Comprehensive Plan process. They provide feedback on work done by the Community Advisory Committee and ultimately acknowledge support of the draft goals/policies prior to the public hearing process. Agency partners provide technical expertise. The City Council/PC members provide elected official perspective.*			
NAME	**AFFILIATION**	**EMAIL**	**PHONE**
1. TBD	City Council		
2. TBD	City Council		
3. Jeff Seymour	Planning Commission Chair		
4. Cris Converse	Planning Commission Vice Chair		
5. Cory Misley	City Manager		
6. Roger Johnson	Fire District		
7. Curtiss Scholll	School District		
8. Jennifer Holland	SPRD		
9. Nick Lelack	Deschutes County		
10. Paul Bertagna	City of Sisters		
11. Judy Trego	Chamber		
12. Scott Edelman	DLCD		
13. Caprielle Foote -Lewis	EDCO		

COMMUNITY ADVISORY COMMITTEE Application process - max 3 members outside of City Limits *Purpose: The Community Advisory Committee represents a wide variety of community interests and works with City staff and consultants to craft policies to be considered by the Stakeholder Committee, Planning Commission, and ultimately City Council. They represent the on the ground community interest.*			
NAME	**AFFILIATION**	**EMAIL**	**PHONE**
1. TBD	Planning Commission		
2. TBD	At-Large - DEI		
3. TBD	HPAB or at-large		
4. TBD	CPAB or at-large		
5. TBD	SCED or at-large		
6. TBD	UFB or at-large		
7. TBD	At-Large		
8. TBD	At-Large		
9. TBD	At-Large		
10. TBD	At-Large		
11. TBD	At-Large (if needed)		
12. TBD	At-Large (if needed)		
13. TBD	At-Large (if needed)		

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EX OFFICIO MEMBERS Purpose: Check ins with these key groups routinely, not a part of formal committee.			
NAME	**AFFILIATION**	**EMAIL**	**PHONE**
Karna Gustafson	CO Builder's Association		
Tyler Neese	CO Assoc. of Realtors		
Rory Isbel	CO Landwatch		
Alexis Biddle	1,000 Friends of Oregon		

NOTE PLANNING COMMISSION – STAFF WILL PROVIDE REGULAR UPDATES, ULTIMATELY THE PC WILL BE THE INITIAL HEARING BODY FOR COMP PLAN ADOPTION, FOLLOWED BY CITY COUNCIL.

TENTATIVE MEETING SCHEDULE

COMMUNITY ADVISORY COMMITTEE	
DATE	**MEETING AGENDA**
Late sept	Recruitment Opens
Early oct?	Recruitment Closes, Staff Review, Appointments
Week of 12/4/20	Meeting #1: Intros, Ground Rules, Background and Role, Provide key themes, discussion initial results of EOA
Week of 1/18/20	Meeting #2: Refine draft policies/goals, etc.
Week of 3/x/20	Meeting #3: Refine draft policies/goals, etc.
Week of 4/x/20	Meeting #4: Finalize Recommendations

- **Shoot for 4 meetings of longer duration to be able to dig into the meat of the discussion**
- **Potential for joint meetings between CAC and Stakeholder group at key points?**
- **Potential to split group up into topical sub-groups either during meetings or for "homework" assignments between meetings to address specific policy topics.**
- **Dates all preliminary**

STAKEHOLDER COMMITTEE	
DATE	**MEETING AGENDA**
Week of 12/4/20	Meeting #1: Intros, Kickoff, Ground Rules, Process to date, initial results of EOA
Week of 2/x/20	Meeting #2: Review Initial Policies from CAC
Week of 4/x/20	Meeting #3: Review Refined Policies from CAC
Week of 5/x/20	Meeting #4: Review and Approval Draft Chapters forPC Hearings

- **Review CAC discussions/key themes/recommendations at key points.**
- **Potential for joint meetings between CAC and Stakeholder group at key points (see below for one example)?**
- **Dates all preliminary**
- **Hard to pin down, hope to reduce number of meetings for higher attendance; for example, much of the content for Meeting #1 could be shared by email, with a very brief Meeting #1 or individual phone or email check-ins to ask questions or get feedback on EOA results, etc.; Alternatively, CAC and Stakeholder Meeting #1 could be a joint meeting**

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PC MEETING DATES	
DATE	**MEETING AGENDA**
10/15/20	Joint PC/CC Review of Engagement Plan
Nov/Dec/Jan	Results of Background Document Review/EOA, BLI, etc
June 2021	**Hearing process**

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