City of Milton Freewater

Special Transportation Area Plan and Transportation System Plan Update

> Submitted to: City of Milton-Freewater ODOT

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Acknowledgements

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The contents of this document do not necessarily reflect views or policies of the State of Oregon.

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Introduction

The intent of this project is to provide a STA Plan and TSP Update in cooperation with local businesses that maintains the through movement on Highway 11, while also making downtown more accessible and safe for local citizens. Planning was conducted for pedestrian and bicycle improvements to reduce local traffic on the highway and enhance local opportunities for walking and biking. In addition, development of zoning and development code amendments has been coordinated for consistency with the TSP to assure the transportation system is adequate to serve the future transportation needs.

This project evaluated effective development of compact commercial centers that are pedestrian-friendly, mixed-use, and balance local/through traffic needs. Ordinance revisions have been written to compliment the STA Plan and TSP Update, including a new downtown zone description.

The focus of this project is to guide the management of existing transportation facilities in the downtown and the design and implementation of future facilities for the next 20 years. This report identifies specific right of way improvements and prioritizes transportation projects for inclusion in the City's Capital Improvement Program.

Existing Conditions

The City has a population of 6,560 and is located on State Highway 11. The City is located 8 miles south of the Oregon/Washington border. The City has two established downtowns, reflecting the historical towns of Milton and Freewater. Milton is on the south side of the City and Freewater to the north. Outside downtown, commercial development extends along the Highway 11 corridor. The City's TSP was completed and adopted in 1999.

The area has had recent and growth and is projected for more. It is important to address access, circulation, and traffic problems now before they get even more difficult, and potentially expensive to solve. Main Street is currently four lanes, two lanes in each direction, with no center turn lane. There are no traffic signals or stop signs on Main Street within the study area.

Summary of Process

A Management Team was established to serve as the technical liaison to help guide the project and provide direction on technical and policy issues. A Technical Advisory Committee was also established to review work projects and at the conclusion of the project, make a recommendation.

This project started with a stakeholders' walking tour of the downtown "Main Street" commercial area to assess community needs and interests, identify local changes that have occurred to the downtown commercial area since the TSP was written, and identify alternatives for the STA Plan and TSP Update. Feedback was received from the stakeholders as to what their vision for Downtown Milton-Freewater included.

The design team then analyzed plans, policies, and data related to the commercial area conditions to identify project issues and opportunities. Items researched included the capacity of streets, sidewalks, parking and other spaces and how each of these is currently being used. Bike/pedestrian mobility, safety and access in relationship to neighborhoods, historic features, schools, recreation/parks, library, and other potential activity centers were also evaluated.

Underutilized and vacant parcel redevelopment opportunities on Main Street were also identified, including downtown alleyways and side streets. Existing and potential land use (planning and urban design) concerns, environmental issues, and conflicts with other modes were also identified as part of this study.

A Youth workshop was conducted to gather input from high school-aged youth on how they would like to see downtown develop. They were an engaging group that provided thoughtful and insightful ideas for improving downtown, both aesthetically and through land use improvements.

The public was then invited to Open House #1, where a presentation was given on walkable communities, focusing on street design, pedestrian crossings, and bike facilities. The presentation also included economic and community-building reasons to design for walkability. The workshop provided images of plaza/pocket parks, public art and other streetscape possibilities to help people communicate what their vision for downtown was.

After the Open House, redevelopment options were prepared illustrating various ways to develop Main Street based on the feedback received at the first public open house. These options included potential street, pedestrian and bicycle access design configurations, including circulation and crossing needs to downtown; different hardscape and landscape improvements; streetscape elements including street trees, bicycle racks, benches, illumination; and buffering/screening options.

A second Open House was conducted to present redevelopment options for downtown. A discussion was held at the Open House regarding land uses, types, densities, styles, analysis of costs, traffic operations, impact to codes and policies, and public infrastructure.

After the Preferred Redevelopment Option was established, existing and potential land use (planning design) concerns were then discussed in further detail. The code was then updated to reflect the changes necessary to support the plan.

The plan, as well as zoning and development code updates, was presented to the Planning Commission and City Council in Work Sessions for discussion and feedback. The proposed STA Plan and TSP Update, along with the code amendments, was then presented and adopted at a Joint Planning Commission/City Council Hearing.

Preferred Redevelopment Option

The Preferred Redevelopment Option combines converting Main Street to a three-lane facility through the Downtown District while keeping the remaining corridor four lanes and improving it with traffic calming features.

Traffic Signals

The City will need a strong advocate to get a pedestrian activated crossing signal placed in the Main Street corridor. ODOT may or may not approve a pedestrian activated crossing signal due to traffic volumes that currently do not reach the threshold for requiring one.

A full traffic signal will be hard to justify to ODOT. The community would likely need to close side streets to drive up traffic volumes enough to warrant a signal. For example, if a signal was placed at the intersection of 9th and Main, 8th and 10th streets would need to be closed. Initially it seems unlikely that ODOT would approve a full signal based on existing traffic volumes.

If the City decides to pay for and install an un-warranted traffic or crossing signal, it is possible they would be required to be responsible for any liabilities (i.e. a pedestrian gets hit in the crosswalk) that may occur.

As part of this project, a full report discussing traffic operations and analysis in detail has been prepared by Kittelson & Associates, Inc. and has been included in the appendix of this report.

Parking

It is essential to provide on-street parking in front of businesses in the Downtown and Civic Districts. The higher density of commercial establishments in the area contributes to the high parking demand. For most downtowns, the parking demand is highest during the mid-day period or just after lunchtime in the early afternoon. Public off-street

parking is available in the study area and is provided in four off-street parking lots in the corridor. These four lots provide approximately 130 parking spots for public use.

In addition, several private retail/commercial businesses in the study area have dedicated parking spaces for customers and employees. The majority of these lots are found at the north end of the corridor and supply approximately 180 business off-street parking spaces. In the future, if parking demand increases dramatically, it is possible that the private business parking spaces could be integrated into the public supply as part of an overall parking management plan for downtown.

As part of their analysis, Kittelson & Associates, Inc. included a Parking Inventory and Utilization Map (Figure 5) as part of their report.

Access

According to the 1999 OHP, if a section of statewide highway is designated as Special Transportation Area (STA), as planned for ORE 11 through Milton-Freewater, "direct street connections and shared on-street parking are encouraged" and "local auto, pedestrian, bicycle, and transit movement to the area are generally given more importance than the through movement of traffic." In case of public roadway spacing, the existing city block or the city block spacing as identified in the local comprehensive plan is an accepted norm. For private driveways, minimum driveway spacing of 175 feet, measured from center to center on the same side of the roadway is allowed.

A majority of the existing accesses do not meet the ODOT access spacing standard for an STA. Nonetheless, due to the Iow traffic volume in the area, and historically low number of crashes, the existing accesses are anticipated to operate safely and acceptably. Any future development in the corridor should be encouraged to meet the spacing standard and ensure that proposed driveways operate safely.

Safety and Traffic Issues

<u>Traffic Speed</u> – The speed at which vehicles, including large trucks, traveled through downtown was a primary concern during the planning process. Currently, vehicles travel above the speed limit through the corridor, partly because it "feels" faster due to the width of the right-of-way. Traffic calming measures have been introduced to "narrow" the visual distance between the curbs, including street trees, bump outs and a median. Introducing these traffic calming design elements will result in lowered speeds as people are become more aware of their surroundings.

<u>Pedestrian Crossings</u> – Pedestrians crossing a busy street without a signal for assistance was another primary concern voiced by citizens. The traffic calming design elements

discussed above will help reduce the speed of traffic. That, combined with well marked and enhanced crosswalks, will help pedestrians feel safer by making cars more aware of them. Bump outs and medians will also give pedestrians a safe refuge while waiting for a break in traffic.

Large Vehicle Access To Businesses In Downtown — Truck circulation to/from and within Downtown will be a consideration as detailed design begins. Considerations will include turning radii to and from businesses on ORE 11 and turning radii at intersections within the STA. The ODOT Highway Design Manual provides guidance on the standards for these features. The goal of the STA is to develop main street type access in downtown. This includes limiting the number of direct driveways onto and off-of ORE 11 and designing low speed turns at intersections. The design will not preclude large vehicles circulating within downtown. At corners, large vehicles may have to travel into the opposing lane on the minor street to complete the turn, or special design exceptions can be achieved with ODOT. Large vehicle direct access onto individual properties will become more constrained as downtown redevelops with STA compatible land uses; however designs can be developed to maintain access to specific properties.

<u>Travel Lane Widths</u> — Under the proposed plan, there is ample space within the current right-of-way to maintain 12-foot travel lanes within the STA. A 12-foot travel lane is consistent with ORE 11 lane widths outside the STA. Therefore large vehicles accommodated on ORE 11 outside of Downtown will also be accommodated through Downtown. In the event that overload or oversize vehicles are traveling through Milton-Freewater standard ODOT requirements would have to be fulfilled.

Loading Zones – Loading zones within the STA will also be identified as part of the detailed design. The location and number of the loading zones will be dependent on the distribution of businesses, and parking demand. The loading zone spaces can be permanent loading zone spaces, or they can be regular parking spaces during peak parking periods, and loading zone spaces during off-periods. As Downtown becomes more popular, it may be necessary to limit loading to specific off-peak hours (e.g. early in the morning).

Bicycle Facilities

There are currently no striped bicycle lanes through the study area. At the first Public Open House residents voiced strongly that they did not think it was appropriate to have striped bike lanes on Main Street. However, there are a few people in support of having bike lanes, striped or un-striped, as part of Main Street.

The existing Right-Of-Way does not have enough room to accommodate the existing four lanes of traffic, parking on both sides of the street and a striped bike lane the entire length of the corridor. Residents were unwilling to give up parking in order to provide bicycle lanes.

The proposed three lane configuration has enough room to accommodate travel lanes, parking on both sides of the street and marked bicycle lanes. However, residents again voiced at the first Public Open House that they did not want bike lanes on Main Street. In all cases they would prefer that bike routes be designated on parallel streets to Main Street, such as Columbia Street and Mill Street.

At the second Open House citizens again voted against incorporating striped bike lanes on Main Street. In addition to safety concerns due to possible conflicts with large trucks, the preferred option incorporates four lanes of traffic which does not allow enough room to also have bike lanes.

However, due to funding sources that may be tied to providing bicycle facilities, it was decided to allow bike facilities on the three lane configuration with alternate bike routes along Mill and Columbia (parallel to Main St.) along the four lane section.

Transit

Milton-Freewater recently started bus service again that provides local connection throughout Milton-Freewater as well as connections to Walla Walla. Proposed improvements should accommodate bus facilities and plan for future expansion of the transit system

Potential Development Projects

The Opera House has great potential for becoming a landmark for the downtown area of Milton-Freewater. There are several other buildings listed on the Historic Register in the area and a historic "focus" could be developed as a point of interest for visitors. The historic focus could help draw tourism spending which would in turn support commercial as well as arts, entertainment and recreation and accommodations and food service. The City should develop programs to assist owners and operators of these shops to upgrade their facilities through coordinated efforts which area sensitive to the historic and architectural values.

Streetscape improvements will need to be coordinated with State Historic Preservation Office prior to and during the engineering phase of the projects. Improvements, depending on the nature of the changes, which do not fit with the historical character or history of Milton-Freewater may impact decisions to be able to create a Historic District in the future. Proposed changes should be as unobtrusive as possible. Additional

information regarding SHPO coordination, including contact information, has been included in the appendix section of this report.

During the second Open House citizens responded favorably to allowing the residential areas in the Gateway Zones adjacent to Main Street to operate home-based businesses. In order for the downtown area to draw more business, flexibility should be given to the corridor to allow businesses to develop while still retaining the unique residential setting.

In addition, lots for potential redevelopment have been identified. Some of the lots are vacant and are ready for redevelopment while other lots are more appropriate for future redevelopment opportunities after their current land use changes.

Downtown District for Freewater

It is recommended that Freewater adopts a similar ordinance to Milton, addressing similar issues while making them specific to their area. Coordination between the two areas, especially due to their close proximity to each other, is encouraged. The local comprehensive plan recognizes the importance of redeveloping the two downtowns. The plan states that "a pressing commercial need is for redevelopment and upgrading of the two old downtowns. Major revitalization has taken place in the south and north districts. These efforts have helped to bring new businesses and shoppers to the areas. It is vital that other store owners and operators continue the trend started by these projects so that everyone can benefit from increased shopping activity in the community. The city has provided technical help to shopkeepers and the Chamber of Commerce to initiate and assist these efforts. This will remain a high priority."

Redevelopment of Alleyways

Currently, the alleyways in the project area are in various stages of improvement. Some of the alleyways are unimproved while others are paved. The City has a standard alleyway cross section and it is encouraged that as lots adjacent to alleys develop or redevelop the alleyways are brought up to City standards where possible.

For this study, the focus was placed on re-vitalizing Main Street to become a more vibrant and integral part of town. As improvements happen over time, it will be appropriate to look at how the alleyways can play a more integral role. As re-development occurs on Main Street it will affect the use of the alleyways. Some alleyways may be appropriately developed to accommodate vehicle circulation and access while others may be better suited for pedestrian connections. However, until the new use is determined it is difficult to make specific recommendations for the alleyways. It is strongly recommended that the focus remain on Main Street until such a time that it's appropriate to dedicate resources to the alleyways.

Currently the alleyways are utilitarian in nature and primarily serve vehicle access. They serve a secondary circulation system and could potentially be further developed to accommodate loading and unloading activities in certain blocks for businesses on Main Street, which would free up parking in front of the buildings. In the future, some of the alleyways could also provide pedestrian connections if they don't conflict with vehicle circulation.

However, it is also important for encouraging redevelopment opportunities that the City accommodate alley access to landlocked parcels where possible. This may help spur redevelopment opportunities where access issues had previously been a concern.

Creation of Greenspace and Pocket Parks

The creation of public spaces through pocket parks and greenways is encouraged as a way to enhance the downtown area and promote pedestrian activity. Potential "greenspace" areas have been identified on the plan. In addition, "pockets" of greenspace should be encouraged as new development moves in or existing buildings are replaced, as small spaces for tables and benches will help enhance the downtown core. In addition, greenspace can be used to encourage pedestrian links between main street and adjacent streets and alleys.

Impact to Codes and Policies

Three new zoning districts were created to assist in creating a pedestrian-oriented, mixed use downtown that preserves and enhances the historic buildings and existing residences. The development and design standards contained in the Downtown Business (DB), Main Street Residential (MSR), and Civic Overlay (CO) districts zoning are intended to assist with the revitalization of the downtown area. Buildings, streets and public spaces are required to be oriented toward the pedestrian, while not excluding the automobile, to support mixed use developments and provide a pedestrian-friendly character of the area. South and North Main Streets shall be the business and mixed-use centers of the community. South Main serves the additional role of being the civic center of the community.

The Main Street Residential (MSR) district is intended to preserve the residential feel of the district while allowing small-scale businesses that are compatible with the existing residential uses. The Main Street Residential (MSR) district shall support a mix of residential and small scale business. Land uses within the Main Street Residential (MSR) district shall be compatible in size and design with the residential character of the area. Small-scale businesses in the MSR district should be encouraged to locate in former residences.

The Downtown Business (DB) district is the place for people to gather and promote commercial activity. Improved pedestrian access and streetscape through the downtown will improve the district's image. Elements of design and appropriate mixed use development will enhance this goal. Mixed use developments should be permitted and encouraged in the Downtown Business (DB) District.

The Civic Overlay (CO) district contains special uses to emphasize the City's desire to concentrate civic facilities in the heart of the downtown. This section lists those uses allowable in the Civic Overlay (CO) district. The development standards in the Downtown Business (DB) district shall apply to all development in the Civic Overlay (CO) district.

Adopted ordinances, as well as a map showing zoning code changes, are included in the appendix of this report.

Economic Analysis

Currently, the Milton-Freewater economy revolves primarily around the regional agricultural-base which includes productive orchards, irrigated row crops and dry land wheat, pea and bean production. Related spin-off industries include food handling, processing, packaging, and shipping. Milton-Freewater's access to Interstate Highway 84, US Route 395, rail and water terminals enables regional agricultural goods to be efficiently shipped nationally, and exported to many countries around the world.

For downtown Milton-Freewater, the most favorable retail growth potential appears to be within the miscellaneous retail, and food and beverages categories. However, some general merchandise will also be supported by increased retail sales. The other/miscellaneous category could possibly include a modest-sized lodging facility and/or an additional independent bed-and-breakfast, which could potentially be added to support regional visitation trends.

Tourism and visitation spending plays an important role in supporting commercial development in Umatilla County and is accredited for supporting 1,720 jobs. The fastest growing segments that were supported by tourism spending over the 1991-2003 time period included "arts, entertainment and recreation" and "accommodations and food service".

The demand for office space in downtown Milton Freewater depends on growth in employment in the competitive market region and changes in household formations and work location preferences. As households get older, demand for professional services, such as medical, legal and financial services tends to rise. Other factors, such as availability and price of land/buildings, telecommunications and internet access also play into location decisions.

In the short-term (years 1-5), this commercial demand in downtown Milton Freewater could likely be accommodated in existing vacant or underutilized downtown buildings. In the longer-term, it is likely that some of the commercial office growth would require new buildings on vacant or redevelopment parcels.

The future outlook for office job growth and land needs are forecasted to show an improvement over the next 10 years. Steady growth in county wide tourism spending as well as moderate growth in local buying power holds promising potential for existing and new commercial, retail and lodging establishments.

A full Economic Analysis has been included in the appendix of this report.

Funding Information

As part of the funding information for this report, research was done for the following site furnishings: benches, litter receptacles, bike racks and drinking fountains. Product manufactures, contact information, and prices (not including installation) have been included in the Funding Memorandum included in the appendix of this report. The City currently has light fixtures and tree grates that have been used on previous projects. For a sense of continuity throughout the corridor it is recommended that the same product models and manufacturer are used on future improvements.

The City currently has an Urban Renewal District and has successfully provided programs in the past to assist business owners with making improvements. The mission of the Milton-Freewater Urban Renewal Agency is to eliminate blight and depreciating property values in the Area and in the process, attract private investments that will improve property values, create jobs well matched to the labor force and create opportunities for business expansion and development.

Two primary goals that have remained consistent throughout the life span of the URA are the elimination of blight and the creation of jobs. Money to help accomplish these goals is created through this agency via tax increment financing. The Milton-Freewater Urban Renewal will continue to be a very positive and viable tool in revitalizing the community.

The city also previously used a business improvement grant program that ran for three years, with up to \$2000 being reimbursed to the property owner for storefront improvements. The program worked with 75% being paid by the Urban Renewal Agency and 25% being paid by the property owner.

This program was recently revised to focus on the new frog branding effort recently started by the City. The program has now created a frog art reimbursement program for business owners paying \$125 for a carved wooden statue with a value of \$500.

The City should consider the following options to enhance or modify the existing downtown urban renewal district:

- 1. Re-establish the store front improvement program and consider making it available for residential frontage improvements The vision for South Main Street and implementing zoning describe a pedestrian-friendly, economically vital, and nicely landscaped streetscape and front yard area along South Main. Providing financial assistance to achieve these objectives will help both investors and city interests move toward the vision. The plan and implementing zoning apply to both Downtown Business properties (that have storefronts) and Main Street Residential properties that have a residential character but may have small businesses in them. Extending frontage improvement incentives to the residential properties will help tie the entire area together with an improved look that is consistent with the plan.
- 2. Ensure the "life" of the district is consistent with the timing for public improvements Many other Oregon communities that have improved their Main Streets have seen private investment that follows. One improvement leverages the other. Milton Freewater should make sure the downtown Urban Renewal district is active during and beyond the period where the streetscape improvements are finished, so that the City can capture the increment from the private investment that may follow.
- 3. Ensure that key "catalyst" properties are fully within the district boundaries The current boundaries should be reviewed to ensure that the most likely redevelopment sites (consistent with the new zoning) are fully within the renewal district boundaries.

Another option to consider is working with the State Economic and Community Development Department and ODOT to form a Community Solutions Team to focus on ways to improve downtown Milton. In other areas of the state the Community Solutions Team has been successful in implementing infrastructure improvements to further community redevelopment. For more information, Mike Burton, Manager of the State Economic and Community Development Department, can be reached at 503-986-0129.

The Funding Memorandum included in the appendix describes in detail several programs available to help fund future improvements.

Project Prioritization and Descriptions

The improvements to Main Street have been broken out into three projects and prioritized as high, medium, and low importance projects. Identifying separate phases and breaking the project out into manageable pieces will allow the City to start making improvements, plan for future and identify funding sources. Descriptions of the projects are provided in the following paragraphs.

The high priory project is the South Gateway between SE 14th and SE 12th. This project was chosen as a high priority because it is easy to break out, relatively inexpensive to construct, and will help make a visual impact and generate excitement that more improvements will be made. This project creates a gateway element to announce the edge of the downtown area and to help reduce vehicle speeds. The intersection of SE 14th will need additional engineering and design work to determine how best to accommodate turning movement onto and off of Main Street. The intersection will likely include a landscape median that could be tied in visually with the adjacent park.

Improvements throughout the two blocks also include sidewalk improvements, street trees in planter strips, and bulb outs at the intersection of SE 12th. On street parking will remain along the two blocks. The designs of these proposed improvements, as well as future phases, are shown on drawings included in this report.

A transition median starting at SE 12th is also shown in the high priority project area, but would not be constructed until the second phase. The transition median facilitates the transition from four travel lanes down to two travel lanes and a median, which will not happen until the next phase.

The medium priority project is the Downtown District between SE 12th and SE 8th. This project is the "heart" of the corridor and will have a large impact on improving the visual aspect of the street, creating more pedestrian friendly spaces, and providing traffic calming effects.

Improvements throughout the four blocks change the lane configurations from four lanes down to two with a center median and turn lane. On street parking is provided as well as marked bike lanes in both directions. Bulb outs are provided at each intersection as well as sidewalk improvements, street trees in tree grates, and crosswalk improvements.

The transition medians, one at SE 12th and the other at SE 8th, will also need to be constructed during this phase. The transition medians will facilitates the transition from four travel lanes into two travel lanes and a median. These medians are not intended to be landscaped but will use striping to designate their boundaries.

The center medians are to be planted with street trees, low shrubs and groundcover. A listing of recommended plants for the corridor has been included in the appendix of this report. Prior to installation, the medians will need to be further coordinated with the community and businesses.

The low priority project is the Civic District and Main Street Residential area between SE 8th and SE 3rd. This area can be expanded from the Downtown District on a "block by block" basis as redevelopment occurs and/or funding becomes available.

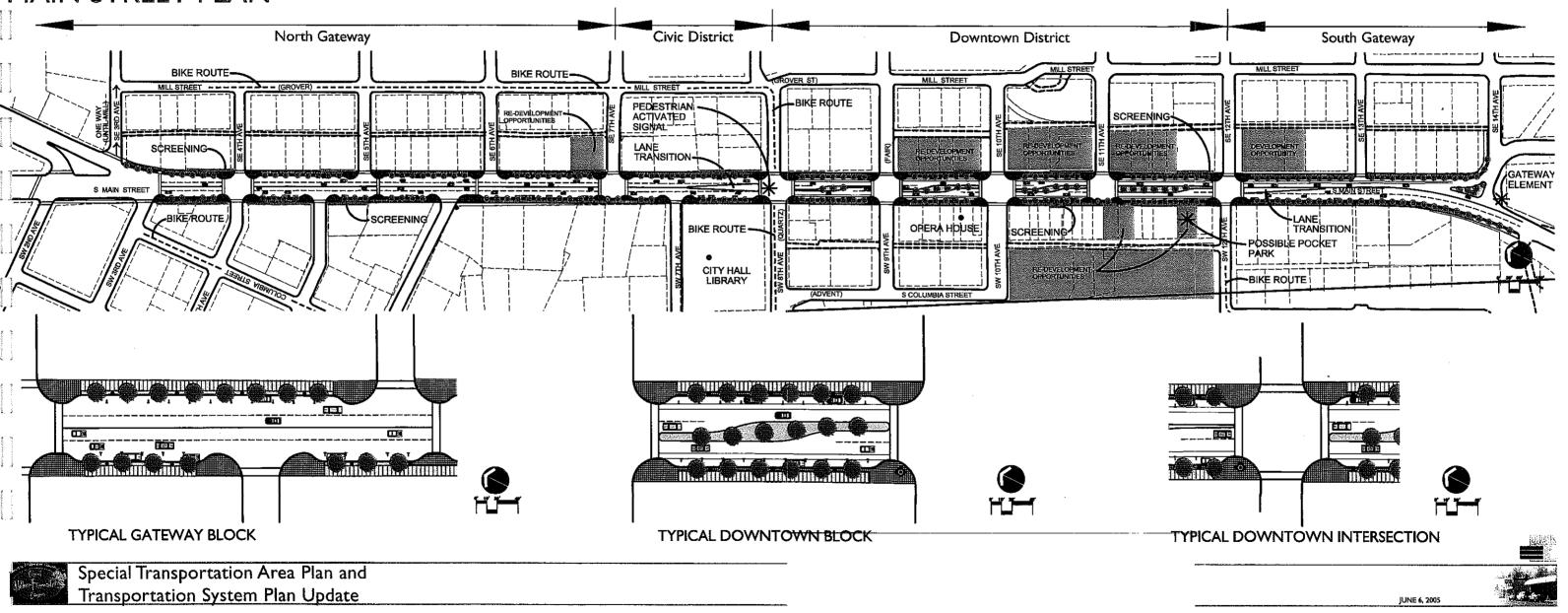
Improvements throughout this area include sidewalk improvements, street trees in planter strips, and bulb outs at the intersections. On street parking will remain along the corridor as well. As part of this planning study, the community expressed concern of the intersection of Main Street and 3rd and would like this area to be further studied during the engineering phase.

The three projects have been further broken down in the next section, including a preliminary cost estimates for the improvements.

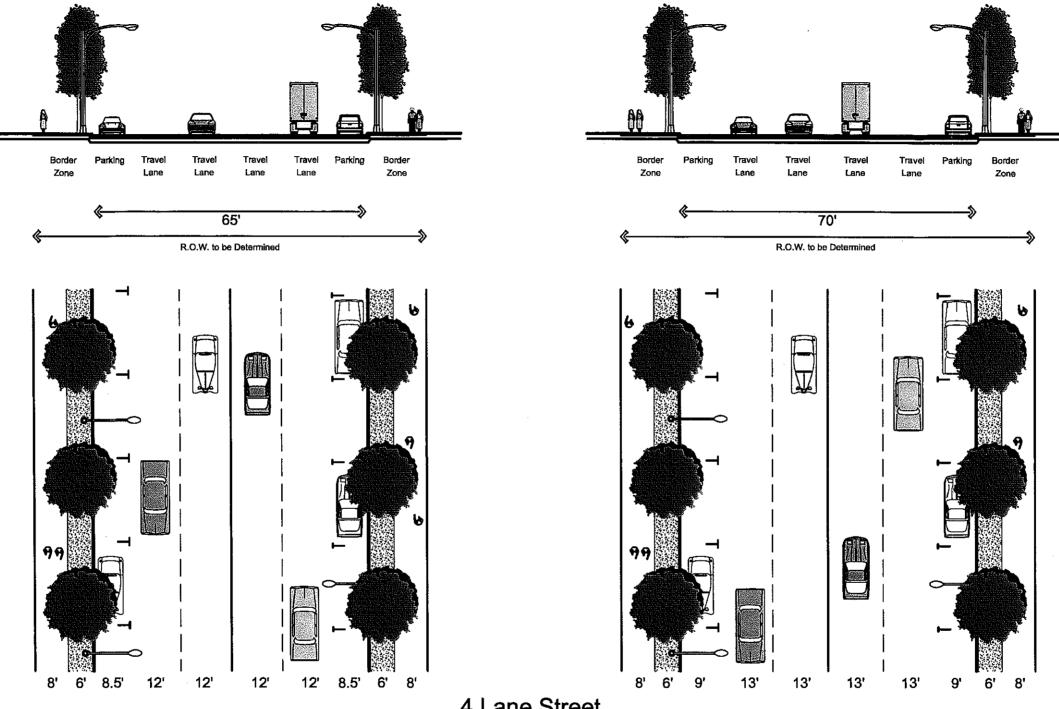
Cost Estimates (Capital Improvements Plan)

Cost estimates have been included for the improvement area. The estimates have been broken out into three projects and identified as high, medium, and low priority. The high priory project is the South Gateway between SE 14th and SE 12th, the medium priority project is the Downtown District between SE 12th and SE 8th, and the low priority project is the Civic District and Main Street Residential area between SE 8th and SE 3rd. These projects and cost estimates are updated to be included in the City's Capital Improvement Plan.

MAIN STREET PLAN



STREET SECTION OPTIONS



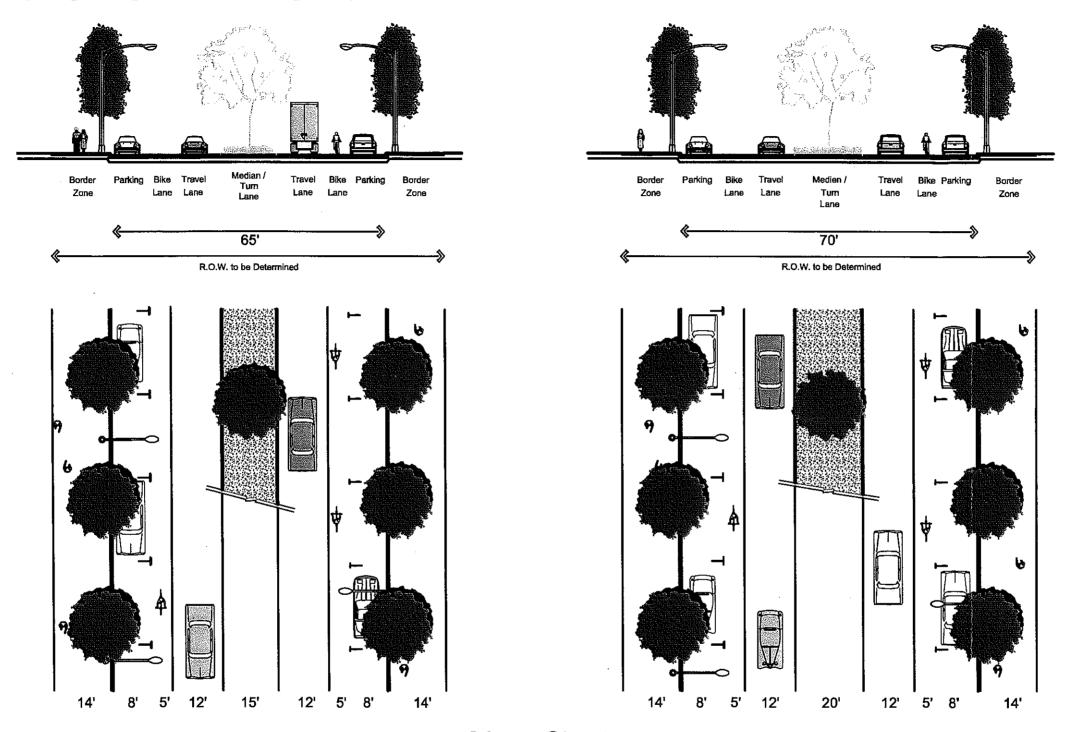
4 Lane Street
No Turn Lane or Median
Parking on Both Sides
No Bike Lanes







STREET SECTION OPTIONS



2 Lane Street
Center Turn Lane with Optional Median
Parking on Both Sides
With Bike Lanes



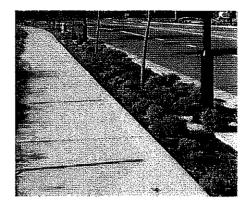




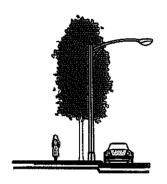
STREET BORDER SECTION OPTIONS







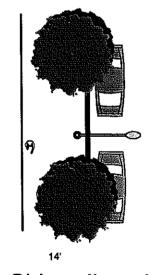


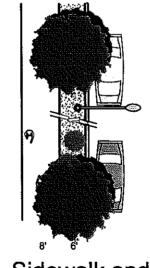


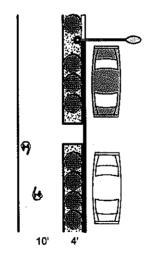


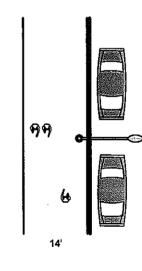












Sidewalk and
Tree Grates
STRONG PREFERENCE

Sidewalk and 6' Planter Strip

STRONG PREFERENCE

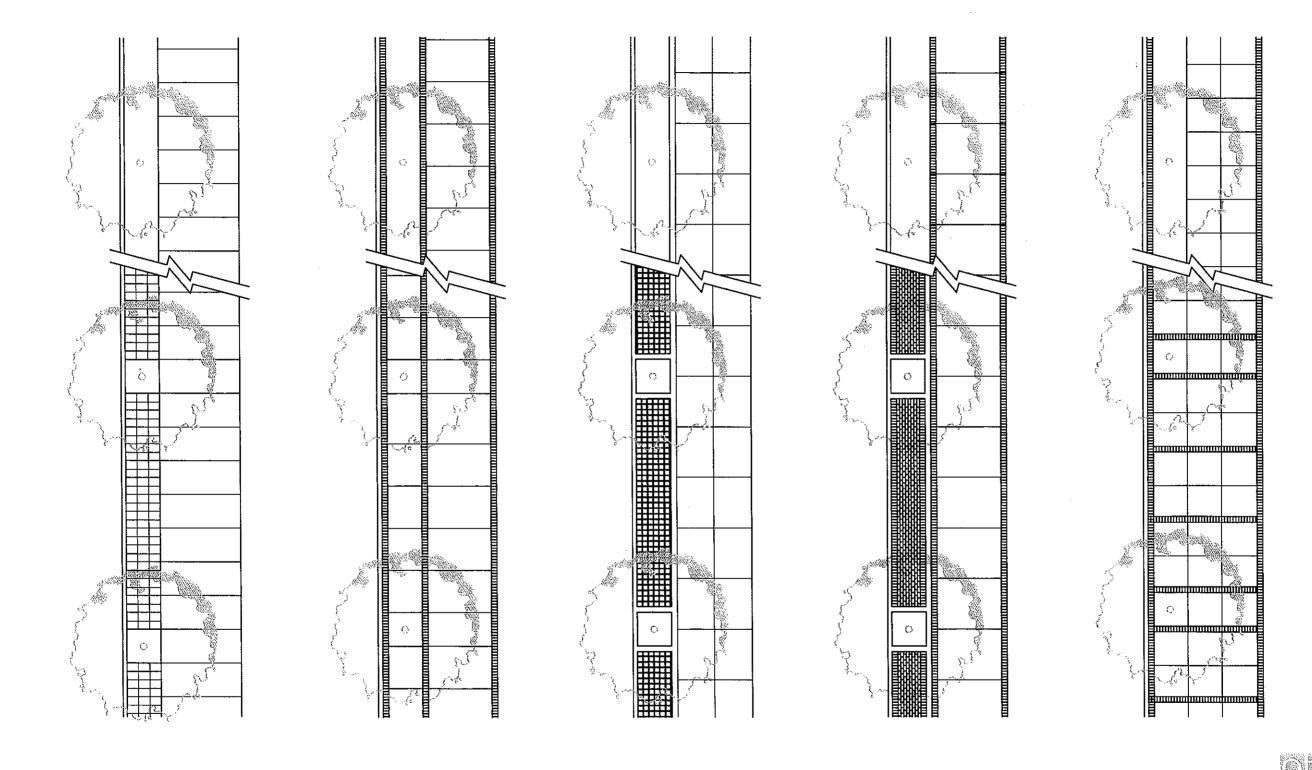
Sidewalk and 4' Planter Strip

Sidewalk Only





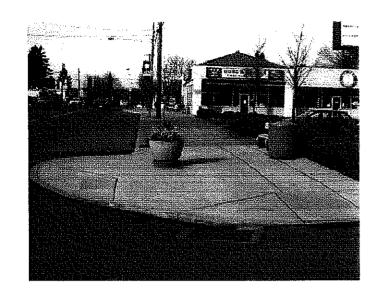
SIDEWALK PATTERN OPTIONS

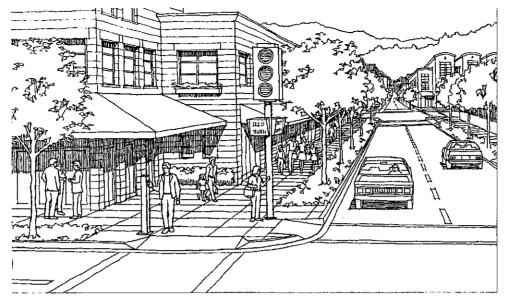


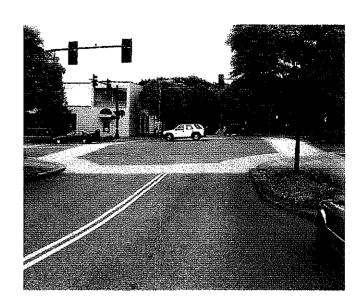


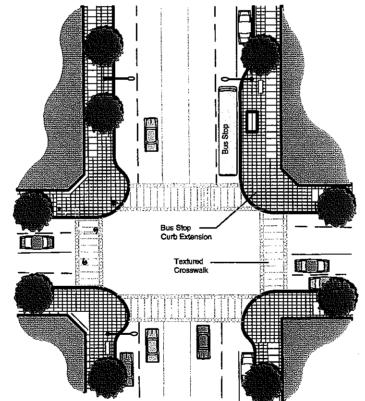


CROSSING OPTIONS









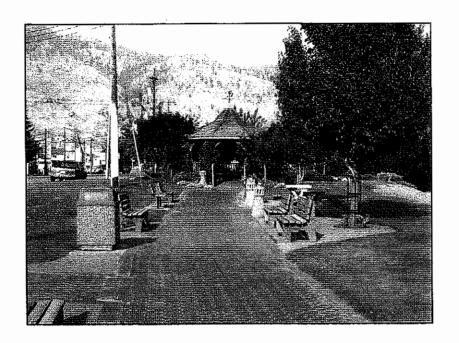
Curb Extension with
Parking on Both Sides
and Bus Stop
STRONG PREFERENCE

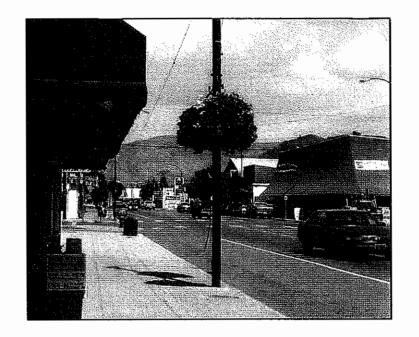


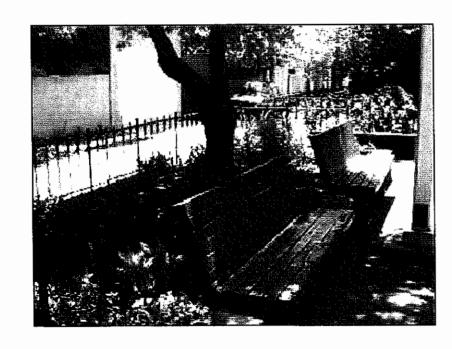


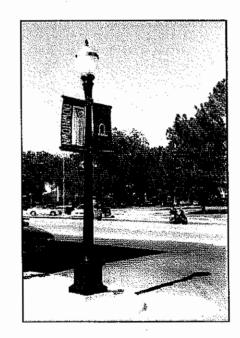


STREET FURNISHINGS AND PUBLIC ART: STRONG PREFERENCE









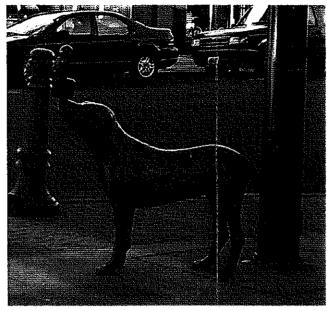




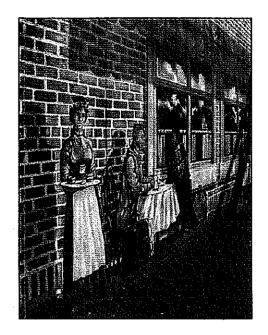


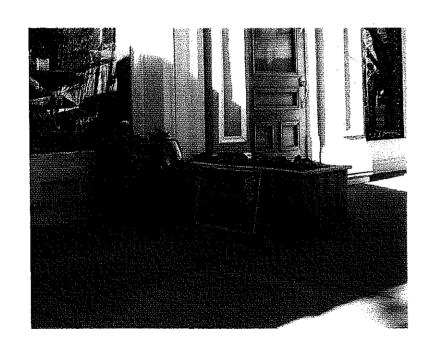
STREET FURNISHINGS AND PUBLIC ART: SECONDARY PREFERENCE













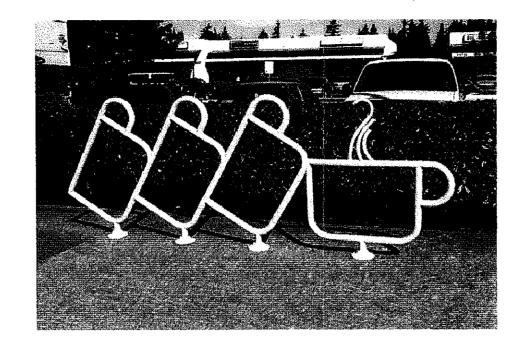




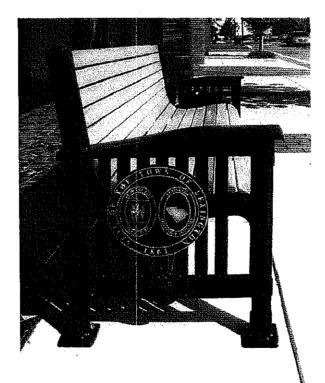


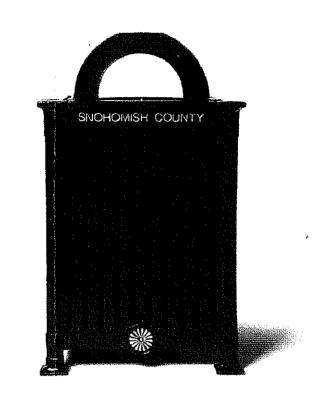
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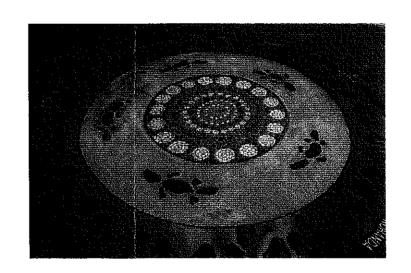








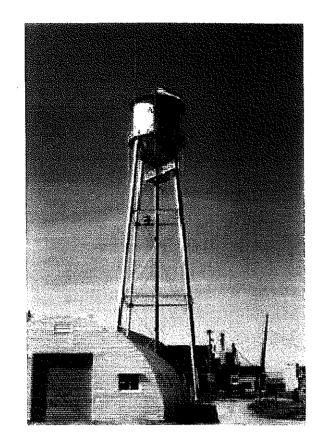




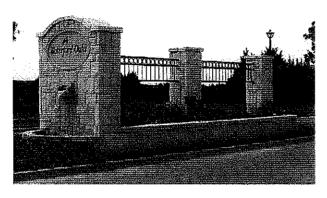


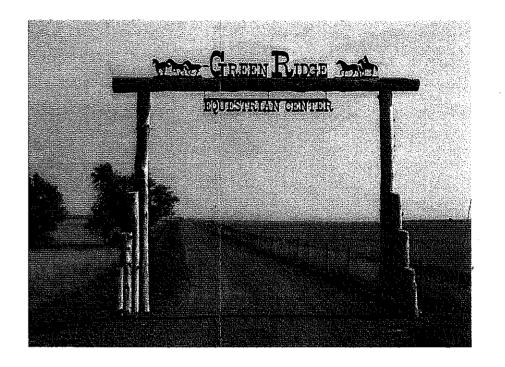


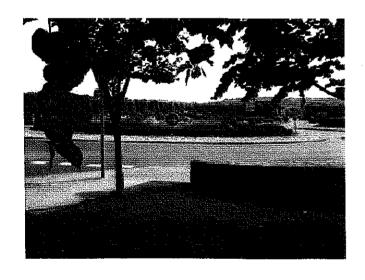
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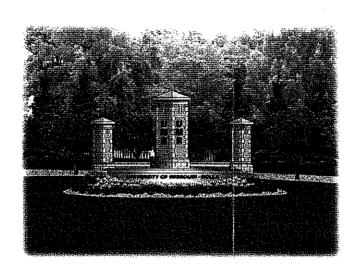


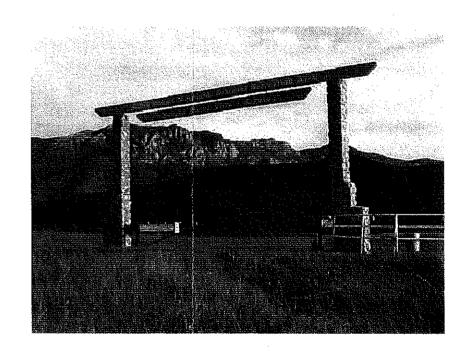








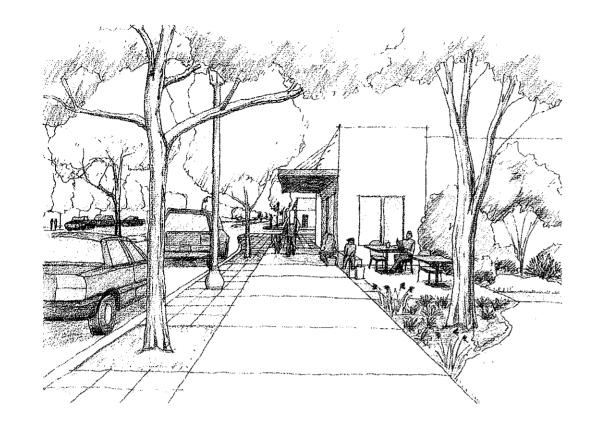


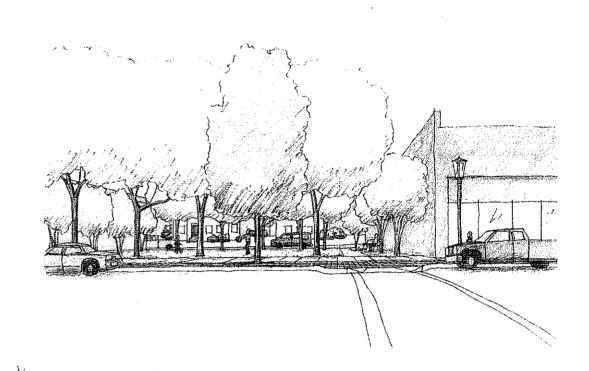






STREET IMPROVEMENT PERSPECTIVES







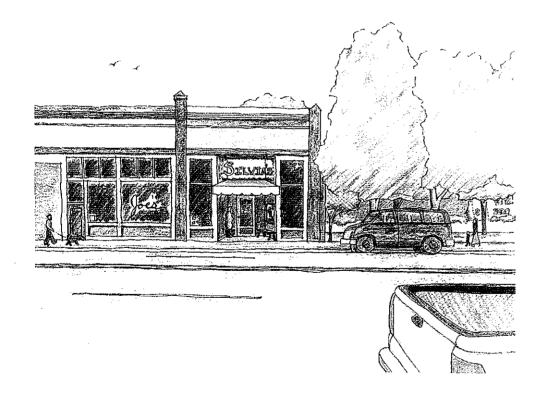




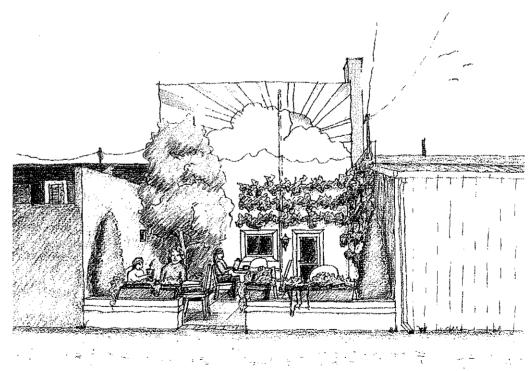


BUILDING FACADE AND ALLEYWAY IMPROVEMENT PERSPECTIVES











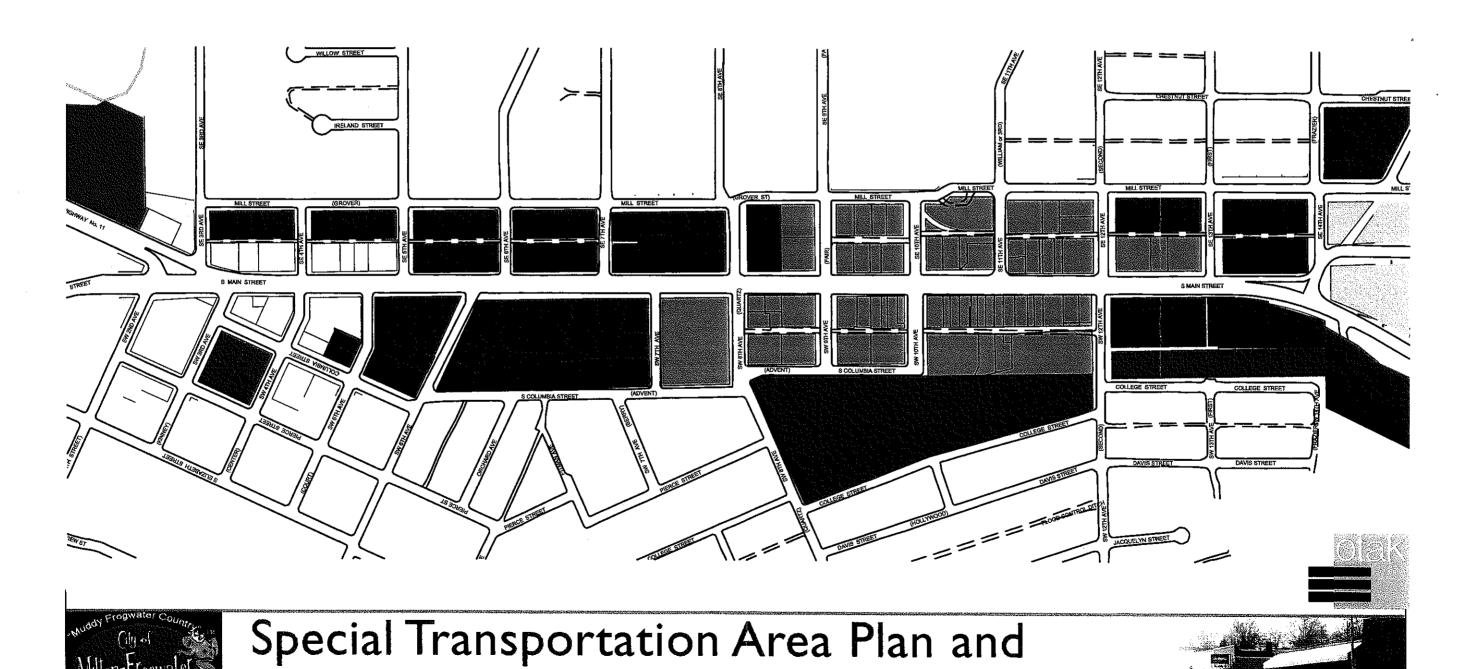


PROPOSED ZONING

R-2 C-1 CV CIVIC OVERLAY DISTRICT

R-3 C-2 DB DOWNTOWN BUSINESS

I-M MSR MAIN STREET RESIDENTIAL



Transportation System Plan Update

TECHNICAL MEMORANDUM

Milton Freewater STA and TSP Update Traffic Analysis

Date:

June 2, 2005

Project #: 6743

To:

Kay Van Sickle, OTAK

From:

Elizabeth Wemple, P.E., Sagar Onta, P.E.

cc:

Cheryl Jarvis-Smith, ODOT

INTRODUCTION

As a sub-consultant to OTAK, Kittelson & Associates, Inc. (KAI) conducted the traffic operations analysis for the update of the City of Milton-Freewater Transportation System Plan (TSP) to reflect the development of the City's Special Transportation Area (STA). The STA has been adopted by the Oregon Transportation Commission and extends from SE 14th Avenue at the south end of downtown to SW 2nd Avenue at the north end of downtown on ORE 11. The goals of the STA are to increase the vibrancy of Downtown Milton-Freewater, reduce vehicle travel speeds and encourage non-auto modes of transportation.

To assist the project team, KAI conducted an inventory of transportation related infrastructure and an analysis of existing transportation conditions. This analysis served as a foundation for developing and analyzing alternative transportation system improvements. KAI has also conducted an analysis of future year conditions in order to assess the impact of possible modifications to ORE 11 through downtown Milton-Freewater.

RECOMMENDATIONS

Based on the findings of the traffic operations analysis, it will be possible to convert ORE 11 to a three-lane facility from the vicinity of SW 8th Avenue to the vicinity of SW 14th Avenue. Under existing a.m. and p.m. peak hour conditions, if this configuration were implemented all study intersections would meet the ODOT volume-to-capacity ratio standard for Special Transportation Areas. By the forecast year of 2025 a.m. and p.m. peak hour conditions, all study intersections will continue to meet ODOT volume-to-capacity ratio standard.

EXISTING CONDITIONS

Transportation Facilities

As shown in Figure 1, the study area includes ORE 11 (i.e. S Main Street) from SW/SE 14th Avenue to SW/SE 2nd Avenue, Mill Street from SE 3rd Avenue to SE 14th Avenue, and Columbia Street from SW 10th Avenue to SE 3rd Avenue. Figure 2 shows intersection control within the study area. There are no bike lanes within the project study area.

Table 1 shows the functional classification and cross-sectional characteristics of the roadways within study area roadways. The classifications reported are those from the 1999 TSP (David Evans & Associates, Inc. 1999) and the 1999 Oregon Highway Plan (OHP).

| | | Table 1 Existing Hoadway Characteristics | | | | | | | |
|---|-------------------|--|-------------------|------------------|-----------------|---------------|---------------|--------------------------|--|
| Roadway | Juris- diction | Classification | Cross- Section | Roadway Width | Posted Speed | Bike Lanes | Side- walk | On- Street Parking | |
| OR 11 - S Main Street | ODOT | Statewide Highway - ODOT | 4 Lanes | 65' – 70' | 25 mph | No | Yes | Yes | |
| | | Arterial - City | 4 Lanes | 65' – 70' | 25 mph | No | Yes | Yes | |
| SE 14 th - 15 th Ave | City | Collector - City | 2 Lanes | 35' – 40' | 25 mph | No | Yes | Yes | |
| SE 9 th Avenue | City | Collector - City | 2 Lanes | 40' | 25 mph | No | Yes | Yes | |
| Columbia Street | City | Local Street - City | 3 Lanes | 32' – 36' | 25 mph | No | Yės | Yes | |
| Mill Street | City | Local Street City | 2 Lanes | 30, | 25 mph | No | Yes | Yes | |
| Other Streets | City | Local Street - City | 2 Lanes | 30' - 40' | 25 mph | No | Yes | Yes | |

Table 1 Existing Roadway Characteristics

Vehicle Operations

The Oregon Department of Transportation (ODOT) collected intersection turning movement counts (14-hour data) in November 2004, December 2004 and January 2005. The raw traffic volumes were balanced across the project study intersections to better reflect anticipated gains and/or losses in traffic as traffic flows from one end of Downtown to the other.

Per ODOT standards, this memo presents the analysis of "30th highest hour traffic volumes". On an annual basis, hourly traffic counts will vary by month of the year, and week and day of the month. ODOT has historical data and seasonal factors for the majority of the roads throughout the state to convert a traffic count to its equivalent 30th highest hour volume. Appendix A contains the raw, seasonally adjusted traffic counts and balancing analysis information.

Figures 3 and 4 show the seasonally adjusted peak hour traffic volumes and resulting level of service for the weekday a.m. and p.m. peak hours, respectively. The level of service analysis was conducted according to 2000 Highway Capacity Manual procedures. The analysis was conducted based on a saturation flow rate of 1,800 vehicles per hour, as required by ODOT. ORE 11 within the study area is classified as a Statewide Highway in the 1999 OHP and as a STA according to the OTC. Accordingly, the volume to capacity ratio standard of a minor street approach to an

unsignalized intersection is equivalent to a district highway/local street standard of 0.95. At signalized intersections the volume to capacity ratio requirement for statewide highways within an STA is 0.90. Appendix B includes the existing conditions level of service analysis calculation sheets.

As shown in Figures 3 and 4, under the existing four-lane cross-section of ORE 11 from SW 14th Avenue to SW 2nd Avenue, all of the study intersection operate acceptably during both the weekday a.m. and p.m. peak hour periods. None of the study intersections were found to operate at high volume to capacity ratios.

Parking Supply and Demand

On-Street Parking

On-street parking supply by type, utilization, and block face was inventoried on Thursday, November 11, 2004, between 11:00 a.m. and 1:00 p.m. Figure 5 shows a summary of the parking supply inventory. In addition, this figure shows the utilization of these parking spaces on this typical weekday. Marked parallel parking spaces were observed between SW 8th Avenue and SW 12th Avenue. All other parking spaces are not marked, but available for parking.

For most Downtowns, parking demand is the highest during this mid-day period or just after lunchtime in the early afternoon. During the data collection period the highest parking demand was observed between SW 10th Avenue and SW 12th Avenue on ORE 11. The higher density of commercial establishments in the area contributes to the high parking demand. Otherwise onstreet parking in downtown Milton-Freewater was well under capacity.

Off-Street Parking

Off-street parking data were collected on Friday, March 4, 2005, between 11:00 a.m. and 1:00 p.m. Figure 5 also shows the location of off-street public surface parking areas available in the study corridor. There are four off-street parking lots in the corridor. The northern most lot is located on the west side of ORE 11 between SW 5th Avenue and SE 5th Avenue, adjacent to an existing church. The lot is able to accommodate approximately 20 parking. The second off-street parking lot is located on the northeast quadrant of SE 7th Avenue/ORE 11 intersection and is able to accommodate approximately 10 parking spaces. The third public surface parking is located behind the City Hall and the Library between SW 7th Avenue and SW 8th Avenue, and is able to accommodate approximately 40 parking spaces. The old industrial mill site between SE 10th Avenue and SE 11th Avenue on SE Mill Street is the fourth off-street surface parking lot that can accommodate approximately 60 parking spaces. All the off-street parking spaces were well under utilized when the data was collected except the lot behind the City Hall, which was approximately 50% full.

The data collection effort also revealed several private retail/commercial businesses in the study area with dedicated parking spaces for the customer and employees. The majority of these lots are on the north end of the corridor, from SW 2nd Avenue to SW 6th Avenue, and a few others in the rest of town. A total of approximately 180 off-street business parking spaces are available in the study area. Of those, 130 off-street business parking spaces are located between SW 2nd

Avenue and SW 6th Avenue, 45 spaces are located between SE 7th Avenue and SE 8th Avenue and approximately 5 off-street business parking spaces are located from SE 8th Avenue to SE 14th Avenue. In the future, if parking demand increased dramatically, it is possible that the private business parking spaces could be integrated into the publicly available supply as part of an overall parking management plan for downtown Milton-Freewater.

Access

ODOT has access management policies to preserve mobility on State facilities. According to the 1999 Oregon Highway Plan, Oregon 11 through Downtown Milton-Freewater is classified as a statewide highway facility. Therefore according to ODOT access management policies there can be public access points (streets) every 550 feet. Private accesses points are discouraged.

According to the 1999 OHP, if a section of statewide highway is designated as Special Transportation Area (STA), as adopted for ORE 11 between SW 14th and SW 2nd, "direct street connections and shared on-street parking are encouraged" and "local auto, pedestrian, bicycle and transit movements to the area are generally given more importance than the through movement of traffic". In case of public roadway spacing, the existing city block or the city block spacing as identified in the local comprehensive plan is an accepted norm. For private driveways, minimum driveway spacing of 175 feet, measured from center to center on the same side of the roadway, is allowed.

Figure 6 shows the location of the existing accesses and their spacing in Downtown Milton-Freewater. As shown in the figure, majority of the existing accesses do not meet the ODOT access spacing standard for a STA. Nonetheless, due to the low traffic volume in the area, and historically low number of crashes, the existing accesses are anticipated to operate safely and acceptably.

As re-development within the STA occurs, the City of Milton-Freewater should plan to manage access points (i.e. consolidate and/or eliminate access points) to ORE 11 so that the ODOT STA access spacing standard is achieved. Optional access management strategies that could be considered with property redevelopment include:

- Eliminating multiple access points to one property;
- Implementing one shared access point to two or more properties;
- Modifying zoning requirements to avoid the need for on-site parking or circulation;
- Consolidating multiple properties to single lots for simplified access requirements; or
- Providing development benefits to property owners who eliminate their access point to ORE 11

Transit

There is no bus service in Downtown Milton-Freewater or service connecting Milton-Freewater and Walla Walla, Washington. One taxi service is available providing door-to-door transportation on request. Greyhound has recently discontinued its service in the area. There is one transit shelter on Ore 11 between SW 8th Avenue and SW 9th Avenue in Downtown Milton-Freewater, which is not in use.

Pedestrian and Bicycle Facilities

There are sidewalks on almost all streets in the study area except on the east side of Columbia Street from SW 6th Avenue to SW 7th Avenue. On SE 6th Avenue, partial sidewalk is present from S Main Street to the east end of the road.

Milton-Freewater staff indicated that most pedestrians cross ORE 11 at SW 8th, 9th, 10th and 12th Avenues in the downtown. The primary pedestrian generators in the downtown include: the library at SW 8th, Central Middle School on SW 2nd, and Grove Elementary School on SE 15th Avenue, and several churches along ORE 11 and in close proximity to the study area.

It is likely that the residents around Columbia Heights use the school crossing on SW 12th Avenue to travel to and from Grove Elementary School

There are no striped bicycle lanes in Downtown Milton-Freewater.

Pedestrian and bicycle facilities should be integrated into Downtown design concepts to encourage people to walk or bike to the many possible activity areas (e.g. library, City Hall, Church, schools, parks, etc.) in Downtown.

Crash Conditions

The crash history of ORE 11 from SW 14th Avenue to SW 2nd Avenue was reviewed in an effort to identify potential intersection safety issues. Crash records were obtained from the Oregon Department of Transportation's Transportation Data Section for the five-year period from January 1, 1999 through December 31, 2003. Table 2 summarizes details of the crash history at the project study intersections.

Overall, between 1999 and 2003 there were 18 reported crashes on the corridor. The majority of crashes occurred at the intersections of ORE 11/SW 2nd Avenue (four crashes in the five-year period), ORE 11/SW 4th (four crashes in the five-year period) Avenue and ORE 11/SW 12th Avenue (three crashes in the five-year period). There were no fatal crashes identified in the ODOT data set. The crashes are evenly distributed between those causing injury and those causing only property damage. Based on the review of the crash data, no reoccurring crash patterns were observed in the data and no safety concerns were identified for the study area. In addition, the crash rates for each intersection (crashes per million entering vehicles) are also shown in Table 2. These intersection crash rates are relatively low, and reveal no apparent problems

For segments, ODOT maintains statewide data documenting crash rates per million vehicle miles by segment type. This data shows that for rural non-freeways the 2003 statewide average crash rate was 1.40 crashes per million vehicle miles. ORE 11 from SW 14th Avenue to SW 2nd Avenue is approximately 1.04 miles long; average daily traffic along this segment is approximately 11,000 vehicles per day. Given that there were 18 crashes between 1999 and 2003, the calculated crash rate is 0.86 crashes per million vehicle miles. This is below the statewide average and again does not reveal any high crash locations. Appendix C includes the crash data provided by ODOT.

| Table 2 | Summan | of Intersection | Crashes | (1999-2003) |
|----------|---------|-------------------|----------|-------------|
| i abie 2 | Summary | y or intersection | Clasiles | (1999-2000) |

| Intersection | Total | Collision Type | | | Severity | | | Peak-hour Volume | Crash Rate ³ | |
|--------------------------------|-------|----------------|---------|-------|----------|------------------|--------|---------------------|----------------------------|------|
| | | Rear End | Turning | Angle | Other | PDO ² | Injury | Fatality | | , |
| ORE 11/SW 14th Ave | 1 | 1 | | *** | | 1 | | | 1,090 | 0.05 |
| ORE 11/SW 13th Ave | 0 | | | | | | | | 1,175 | 0.00 |
| ORE 11/SW 12 th Ave | 3 | 1 | 2 | | · | - 2 | 1 | | 1,235 | 0.13 |
| ORE 11/SW 11th Ave | 1 | | 1 | | | 1 | | | 1,235 | 0.04 |
| ORE 11/SW 10 th Ave | 1 | 1 | | | | 1 | | | 1,250 | 0.04 |
| ORE 11/SW 7th Ave | 1 | | 1 | | | | 1 | | 1,220 | 0.04 |
| ORE 11/SW 5 th Ave | 2 | 1 | | 1. | | 1 | 1 | | 1,300 | 0.08 |
| ORE 11/SW 4 th Ave | 4 | 2 | 2 | | | 1 | 3 | | 1,305 | 0.17 |
| ORE 11/SW 3rd Ave | 1 | | 1 | | | | 1 | | 1,325 | 0.04 |
| ORE 11/SW 2 nd Ave | 4 | 2 . | 1 | | 1 | 2 | 2 | | 1,600 | 0.14 |
| Total | 18 | 8 | 8 | .1 | 1 | 9 | 9 | 0 | | |

Other collision types include a collision with an animal, fixed object, mechanical failure, and other single-vehicle non-collisions.

FUTURE CONDITIONS - NO CHANGE TO THE TRANSPORTATION SYSTEM

Traffic Volumes

The 2004 traffic volumes were forecast to 2025 conditions assuming a 1.6-percent per year growth factor. The factor was developed based on the review of the data obtained from the ODOT's permanent Automatic Traffic Recorder, Milton 30-021, located on ORE 11, 0.9 miles south of the Oregon-Washington state line (MP 34.46), ODOT Traffic Volume Tables, and the Milton-Freewater Transportation System Plan (TSP). This growth rate was compared to the traffic volumes and growth rates used in the 1999 TSP and the traffic volumes that were recently obtained by ODOT for this project. ODOT Transportation Planning Analysis Unit (TPAU) Staff have reviewed and approved this growth factor.

Vehicle Operations

Assuming no improvements to the existing transportation system in Downtown Milton-Freewater, forecast year 2025 traffic operations are shown in Figures 7 and 8 for weekday a.m. and p.m. peak hour periods, respectively. As shown in the figures, all of the intersections meet ODOT STA volume-to-capacity ratio standards. See Appendix D.

² PDO represents "property damage only."

³ Crashes per million entering vehicles.

FUTURE CONDITIONS - OPTIONAL MODIFICATIONS TO ORE 11 THROUGH DOWNTOWN MILTON-FREEWATER

Recognizing that a goal of this project is to develop a transportation system that supports a "main-street" concept for downtown, three optional modifications to ORE 11 were identified:

- Convert ORE 11 to a three-lane facility;
- Maintain ORE 11 as a four-lane facility and provide curb extensions or median island at key intersections; or
- Change the alignment of ORE 11 at SW 14th and SW 2nd Avenues.

The following sections describe the alternatives and results of the transportation operation analysis. The options were considered separately, though potentially all could be integrated into the future plan.

As requested by ODOT, the results of the traffic operations analysis have been compared to standards outlined in the Oregon Highway Design Manual (HDM). ORE 11 in this area is classified as a Statewide Highway, and as a result of this project is becoming a Special Transportation Area. As outlined in Table 10-1 of the HDM, the volume to capacity ratio standard is at or less then 0.90 for the mainline. Further, according to Action 1F.1 bullet two of the Oregon Highway Plan, the stop-controlled approaches to the roadway must operate according to the District/Local Interest Road classification. Again, according to Table 10-1 of the Highway Design Manual, the stop-controlled approaches to the study intersections must operate at or less then a volume to capacity ratio of 0.95

Three-Lane Roadway Alternative

Two of the primary goals of the project are to reduce vehicular speeds and encourage non-motorized transportation in Downtown Milton-Freewater. Subject to many considerations, converting ORE 11 to a three-lane facility would provide more public space for pedestrian, bicycle and aesthetic use, and could slow travel speeds through downtown. Currently, ORE 11 is 65 feet wide in the study area. If the roadway were converted to a three-lane cross-section with two 12-foot travel lanes and one 14-foot center left-turn lane, approximately 27 feet would be available to accommodate 8-foot on-street parking and 5-foot bike lanes on both sides of the street.

The following documents the results of the traffic operations analysis assuming that ORE 11 from SW 14th to SW 2nd Avenue was converted to a three-lane facility. This analysis was conducted as a hypothetical situation in order to test the operational impacts of the conversion.

2004 Vehicle Operations as Three-Lane Roadway

Figures 9 and 10 show the near-term operational characteristics of the study intersection under a three-lane scenario. As shown in the figures, in the near term all the intersection would continue to operate under capacity during both the weekday a.m. and p.m. peak hour periods. See Appendix E.

2025 Vehicle Operations as Three-Lane Roadway

Figures 11 and 12 show the forecast year 2025 a.m. and p.m. peak hour traffic operations assuming ORE 11 through downtown Milton-Freewater were converted to a three-lane facility. As shown in the figures:

- During the weekday a.m. peak hour:
 - o All intersections are forecast to operate according to ODOT HDM standards except the intersection of ORE 11/SW 14th Avenue. This intersection is forecast to operate with an a.m. peak hour v/c ratio of 0.95 just meeting the ODOT standard for volume to capacity ratios within an STA. The three-lane alternative will include providing a separate left and right-turn lane at the westbound approach to the intersection. This will minimize vehicle queuing and delay at the intersection.
- During the weekday p.m. peak hour:
 - O All intersections are forecast to operate acceptably except the intersections of SW 8th Avenue and SW 7th Avenue at ORE 11. The eastbound left turn movements will operate at-capacity during the weekday p.m. peak hour. Traffic signal warrants are not met at these locations, and with alternate routes available it is anticipated that motorists will divert to other intersections along ORE 11 to avoid delay. Modifying the alternative to allow two-stage gap acceptance would mitigate this condition.

These results reflect a conservative analysis that includes a relatively low peak hour factor based on existing conditions; seasonally adjusted volumes that are higher than currently observed peak hours, and conservatively balanced traffic volumes. Therefore it is likely that the intersections will operate better than reported here. Further with the downtown grid system, drivers will have options to use alternate routes to avoid delay if desired. Given this it is likely that if in the future drivers experience delay during peak hours, it will be for short periods of time. There will not likely be capacity issues causing excessive queuing. See Appendix F.

Advantages and Disadvantages

Advantages

A three-lane section through Downtown Milton-Freewater would:

- Reduce the travel speed in the area due to lower total pavement width;
- Enhance the safety of the roadway due to lower operational speed;
- Provide a more attractive cycling environment due to lower operational speed; and
- Provide additional public space for wider sidewalks and streetscape features.

Disadvantages

Potential disadvantages of converting to ORE 11 to a three-lane roadway include:

- Due to the reduction in speed, there is a potential for the traffic on ORE 11 to divert to parallel roadways in the area.
- There may be increases in traffic noise in the vicinity of the transition to the three-lane facility as motorists apply their brakes.

Curb Extensions and Median Islands Alternative

An alternative to changing ORE 11 from four lanes to three lanes would be maintaining the corridor cross-section and providing traffic calming features throughout the corridor. These features would decrease the crossing distance for pedestrians and provide visual cues for motorists to travel at slower speeds.

The most common method is to provide curb extensions to shadow on street parking. Alternatively, the travel lanes can be transitioned such that a median refuge island is created in the middle of the roadway for the pedestrians to use when crossing the roadway.

Vehicle Operations

Implementing traffic calming features would not impact vehicle capacity and therefore the system would operate as forecast in the 2025 no-build condition.

Advantages and Disadvantages

Advantages

The advantages of curb extensions are:

- Enhance pedestrian environment
- Provide additional sidewalk space
- Inexpensive to implement
- Negligible impact on vehicular traffic operation

The advantages of median islands are:

- Provide refuge for pedestrian while crossing the roadway
- Relatively inexpensive to implement
- Negligible impact on vehicular traffic operation

Disadvantages

The disadvantages of curb extensions are:

- Will show less speed reduction benefits than changing the cross-section from a four-lane to three-lane road.
- Slight decrease in total parking supply.

The disadvantages of median islands are:

- Design of the roadway transition would be critical for good operation, and to ensure that vehicles do not drive over the median islands.
- Sidewalk space will not increase to enhance pedestrian environment.

Geometric Considerations Alternatives

The focus of this project has been on re-vitalizing the downtown core of Milton-Freewater – Ore 11 from SE 12th Avenue to SE 6th Avenue. As success is achieved, the City should consider possible additional gateway projects to further enhance the vibrancy of Downtown Milton-Freewater. For future reference, optional concepts are described below. Further detailed analysis of these concepts would be required prior to implementation.

ORE 11/SW 14th Avenue Intersection

The intersection of ORE 11/SW 14th Avenue serves as a gateway to Downtown Milton-Freewater. There is a relatively steep downgrade as ORE 11 approaches this intersection from the south. Just south of the intersection, the posted speed limit changes from 45 miles per hour to 25 miles per hour – although the roadway cross-section does not support this travel speed.

Modifying the intersection of SW 14th Avenue/ORE 11 to include either a roundabout, subject to right of way availability, or by re-aligning the horizontal curve to slow travel speeds are optional methods for reducing travel speeds in this area. Either option could serve as a gateway project for the community.

ORE 11/SW 2nd Avenue Intersection

This intersection also serves as a gateway to Downtown Milton-Freewater. The high skew and multiple streets coming together at this location require complex lane striping and signal phasing. As Milton-Freewater grows, possible modifications at this intersection should be considered to simplify traffic operations. Possible improvements include a modern roundabout, subject to right of way availability, or possible closure of streets and realignment of ORE 11.

RECOMMENDED PLAN

The recommended plan includes consolidating the number and types of land use zones within the STA. As an outcome, there will be more clarity and consistency in the types of development that will occur within the STA, and therefore the City will be more readily able to achieve their goal of a vibrant downtown. Further, the development allowed by the new zoning is of a density and nature consistent with current plans for growth in Downtown; therefore the annual growth factor of 1.6 percent per year that has been applied to the existing traffic volumes yields traffic volumes consistent with the proposed changes in zoning.

Figure 13 shows a schematic of the recommended future lane configurations on ORE 11 from SE 14th Avenue to SW 2nd Avenue. As shown ORE 11 would be converted to a three-lane facility from approximately SE 14th Avenue to SE 8th Avenue. North of SE 8th Avenue ORE 11 would remain a four-lane facility.

2004 Traffic Operations

Figures 14 and 15 show the forecast existing conditions a.m. and p.m. peak hour operating conditions under this plan. As shown all of the intersections will operate according to ODOT HDM standards for a STA. See Appendix G.

Figures 16 and 17 depict the forecast 2025 a.m. and p.m. peak hour traffic operating conditions assuming implementation of the recommended plan. In the future, with this plan implemented, it is forecast that all intersections will operate according to HDM standards. The intersection of SW 8th Avenue/ORE 11 has been modeled assuming ORE 11 is designed allowing for two-stage gap acceptance. See Appendix H.

Parking Conditions

The recommended plan maintains most on-street parking on ORE 11. Some parking spaces will be eliminated with construction of curb extensions. Currently there is ample parking in the study area. At this time, the City should not plan any change in parking management. As redevelopment occurs, City Staff should monitor on- and off-street parking utilization in Downtown to ensure that parking management policies are not required.

In the event that on-street parking utilization increases and exceeds 85-percent, parking management policies should be established to provide additional supply. While a detailed parking supply, demand and utilization analysis will be required if this occurs, possible parking management strategies include:

- Initiating and enforcing different parking duration limits in different areas of Downtown;
- Installing parking meters;
- Initiating neighborhood parking permit programs;
- Working with property owners to make private parking available to the public;
- Developing a city owned at-grade parking area.

Access Management

Under existing conditions, the spacing of access points to and from ORE 11 within the STA largely does not meet ODOT STA access spacing standards. As properties along the corridor redevelop, new properties are developed, or the City implements the recommended plan, the City will need to implement access management programs and policies to ultimately comply with ODOT standards. Possible access management strategies include:

- Eliminating multiple access points to one property;
- Implementing one shared access point to two or more properties;
- Modifying zoning requirements to avoid the need for on-site parking or circulation;

- Consolidating multiple properties to single lots for simplified access requirements; or
- Providing development benefits to property owners who eliminate their access point to ORE 11.

Queuing Conditions

Vehicle queuing conditions for the no-build and recommended alternative were analyzed and are summarized in Table 3. As shown in the table under existing conditions, p.m. peak hour vehicle queuing at the unsignalized intersections is limited to one to three vehicles at all locations. PM Peak hour vehicle queuing is longer at ORE 11/SW 2nd Avenue due to the traffic signal. However the access management at the westbound approach to this intersection allows for the vehicle queuing to occur without any other vehicle conflicts.

If the recommended plan were implemented under existing weekday p.m. peak hour traffic volumes, vehicle queuing at the unsignalized intersections with ORE 11 would change only at the ORE 11/8th Avenue intersection. Even at ORE11/8th Avenue, the queuing increased only from 25 to 50 feet.

Under the forecast 2025 no-build p.m. peak hour conditions, queues will be approximately twice the length of queues under existing conditions. However, queues are limited to no more than four cars for all unsignalized intersections. For ORE 11/SW 2nd Ave, PM Peak hour 95th percentile queues of around 200 feet are projected, and this is within the capacity of existing intersection storage.

With the recommended plan implemented, forecast 2025 p.m. peak hour vehicle queues will increase somewhat over the no-build case, but remain at or under four cars for all unsignalized intersections in the study area. Further, relative to the no-build conditions it is forecast the recommended plan would increase minor-street queuing by at most two vehicles (ORE 11/SW 7th). Because the recommended plan allows for two-stage gap acceptance at ORE 11/SW 8th Avenue, the forecast vehicle queue at this location would decrease relative to the forecast no-build condition. The results of the analysis are included in Appendix I.

Table 3 Vehicle Queuing Conditions

| | 2004 PM, 4 | 1-lanes | 2004 P Recommend | | 2025 PM, 4 | 1-lanes | 2025 PM Recommended Plan | | |
|------------------------|--------------------------------------|------------------------------|--------------------------------------|-----------------|--------------------------------------|-----------------|--------------------------------------|-----------------|--|
| | Critical Minor Street Movement | Queue Length ¹ | Critical Minor Street Movement | Queue Length | Critical Minor Street Movement | Queue Length | Critical Minor Street Movement | Queue Length | |
| ORE 11/SW 14th Ave. | WB RT | 50 | WB Shared | 50 | WB RT | 100 | WB Shared | 100 | |
| ORE 11/SW 12th Ave. | EB Shared | 25 | EB Shared | 25 | ·EB Shared | 50 | EB Shared | 75 | |
| ORE 11/SW 10th Ave. | EB Shared | 25 | EB Shared | 50 ⁻ | EB Shared | 75 | EB Shared | 100 | |
| ORE 11/SW 9th Ave. | WB Shared | 25 | WB Shared | 25 | EB Shared | . 25 | EB Shared | 50 | |
| ORE 11/SW 8th Ave. | EB Shared | 50 | EB Shared | 50 | EB Shared | 1.00 | EB Shared | 50 | |
| ORE 11/SW 7th Ave. | EB Shared | 25 | EB Shared | 25 | EB Shared | 50 | EB Shared | 100 | |
| ORE 11/SW 4th Ave. | WB Shared | 25 | WB Shared | - 25 | EB Shared | 25. | EB Shared | 25 | |
| ORE 11/SW 2nd Ave. | WB Shared | 150 | WBLT | 150 | WB Shared | 200 | WB LT | 200 | |

Queue lengths shown are in feet, and represent the 95th percentile length. 25 feet equals one car length,

Highway Segment Designations and Objectives (1999 Oregon Highway Plan, 2004 amended Policy 1B)

As Milton-Freewater proceeds with implementing the STA on ORE 11 between SW 14th and SW 2nd, the following material from the 1999 Oregon Highway Plan, 2004 amended Policy 1B should serve as a guide:

A Special Transportation Area (STA) is a designated district of compact development located on a state highway within an urban growth boundary in which the need for appropriate local access outweighs the considerations of highway mobility except on designated Freight Highways where through highway mobility has greater importance.

While traffic moves through an STA and automobiles may play an important role in accessing an STA, convenience of movement within an STA is focused upon pedestrian, bicycle and transit modes. STAs look like traditional "Main Streets" and are generally located on both sides of a state highway. The primary objective of an STA is to provide access to and circulation amongst community activities, businesses and residences and to accommodate pedestrian, bicycle and transit movement along and across the highway. Direct street connections and shared onstreet parking are encouraged. Local auto, pedestrian, bicycle and transit

movements to the area are generally as important as the through movement of traffic. Traffic speeds are slow, generally 25 miles per hour or less.

Location. STAs can be located within urban growth boundaries on District, Regional and Statewide Highways but not on Interstates or Expressways. An existing central business or commercial district in an unincorporated community as defined by OAR 660-022-0010(10) that meets the definition of an STA may also be classified as an STA. Larger communities may have more than one STA.

While STAs may include some properties that are currently developed for auto-dependent uses (e.g., drive thru restaurants, gas stations, car washes), areas where the predominant land use pattern is auto-dependent uses are generally not appropriate for STA designation. STAs that include properties developed for auto-dependent uses should include planning and zoning that provides for redevelopment of the properties over time to uses consistent with STA implementation.

Planning and Development Guidance for STAs. STAs should be planned and developed to reflect the following kinds of characteristics:

- Buildings spaced close together and located adjacent to the street with little or no setback;
- Sidewalks with ample width located adjacent to the highway and the buildings;
- People who arrive by car or transit find it convenient to walk from place to place within the area;
- On-street parking, structured parking, or shared, general purpose parking lots which are located behind or to the side of buildings;
- Streets designed with a pedestrian orientation for the ease of crossing by pedestrians;
- Public road connections that correspond to the existing city block; private driveways directly accessing the highway are discouraged;
- Adjacent land uses that provide for compact, mixed-use development with buildings oriented to the street;
- A well-developed parallel and interconnected street network to facilitate local automobile, bicycle, transit and pedestrian circulation except where topography severely constrains the potential for street connections;
- Speeds that typically do not exceed 25 miles per hour;
- Plans and provisions for infill and redevelopment;

 Provision for well-developed transit stops including van/bus stops, bicycle and pedestrian facilities, and including street amenities that support these modes.

The Oregon Highway Plan recognizes that a significant amount of coordination and collaboration will occur between ODOT and Milton-Freewater in order to implement and achieve the goals of the STA.

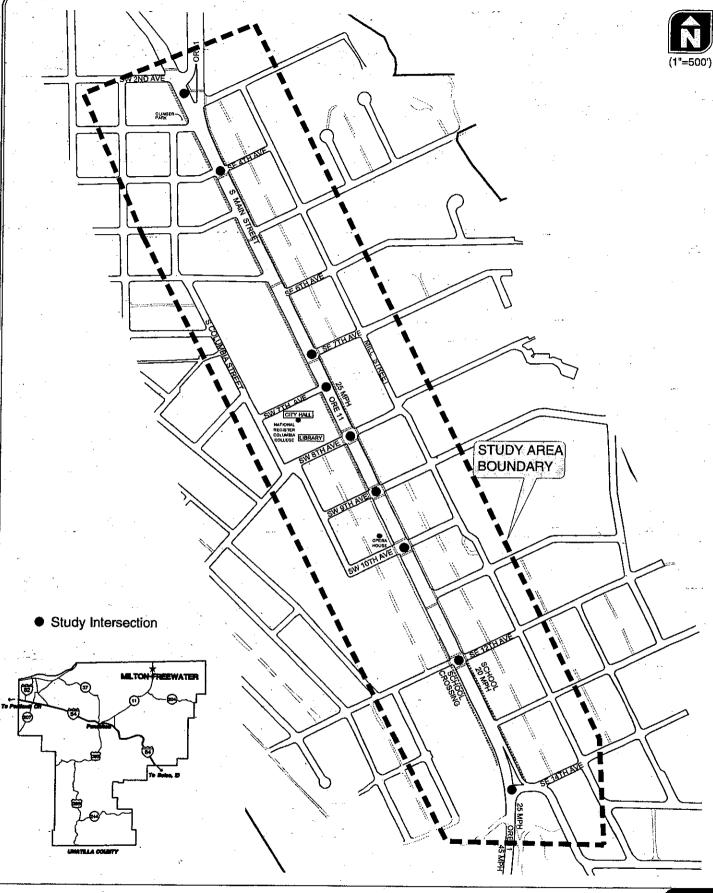
General Circulation

As the recommended plan is further refined, and detailed design/engineering begins, the following list of items should be considered as part of this process:

- o Large Vehicle Access To Businesses In Downtown Truck circulation to/from and within Downtown will be a consideration as detailed design begins. Considerations will include turning radii to and from businesses on ORE 11 and turning radii at intersections within the STA. The ODOT Highway Design Manual provides guidance on the standards for these features. The goal of the STA is to develop main street type access in downtown. This includes limiting the number of direct driveways onto and off-of ORE 11 and designing low speed turns at intersections. The design will not preclude large vehicles circulating within downtown. At corners, large vehicles may have to travel into the opposing lane on the minor street to complete the turn, or special design exceptions can be achieved with ODOT. Large vehicle direct access onto individual properties will become more constrained as downtown redevelops with STA compatible land uses; however designs can be developed to maintain access to specific properties.
- o <u>Travel Lane Widths</u> Under the proposed plan, there is ample space within the current right-of-way to maintain 12-foot travel lanes within the STA. A 12-foot travel lane is consistent with ORE 11 lane widths outside the STA. Therefore large vehicles accommodated on ORE 11 outside of Downtown will also be accommodated through Downtown. In the event that overload or oversize vehicles are traveling through Milton-Freewater standard ODOT requirements would have to be fulfilled.
- O Loading Zones Loading zones within the STA will also be identified as part of the detailed design. The location and number of the loading zones will be dependent on the distribution of businesses, and parking demand. The loading zone spaces can be permanent loading zone spaces, or they can be regular parking spaces during peak parking periods, and loading zone spaces during off-periods. As Downtown becomes more popular, it may be necessary to limit loading to specific off-peak hours (e.g. early in the morning).

Note this is an incomplete list of items that will be considered as part of the detailed design process. It has been presented in regards to specific questions raised as part of the project.

We trust that this report adequately addresses the transportation related questions for updating the City's Transportation System Plan and adopting the Special Transportation Area for ORE 11 from SW 14th to SW 2nd Avenue in Milton-Freewater. Should there be any additional questions, please contact us at 503-228-5230.

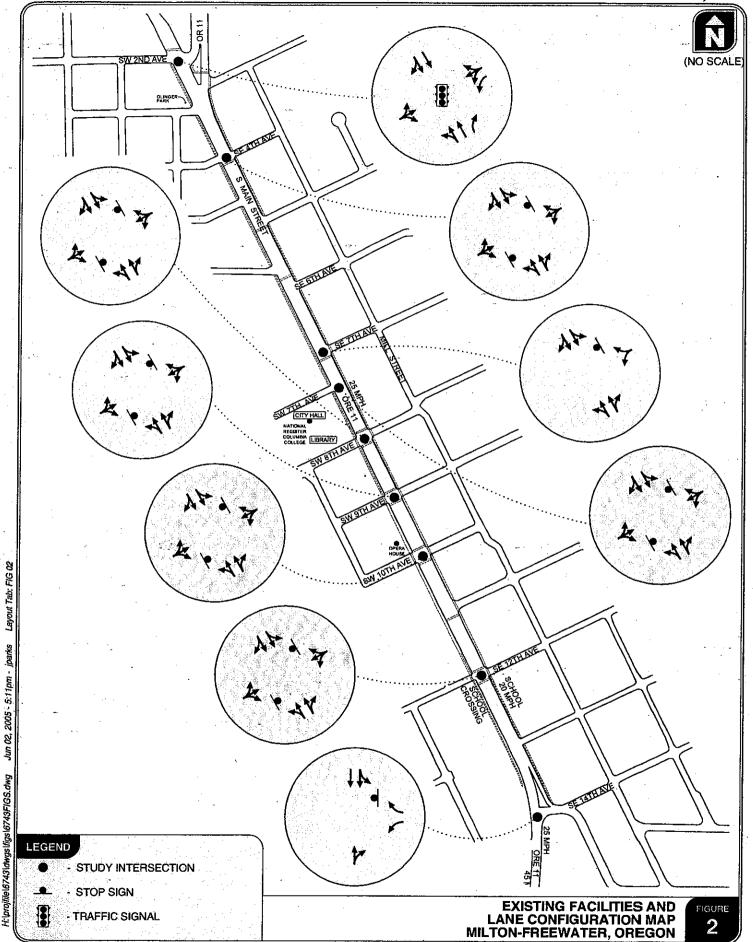


KITTELSON & ASSOCIATES, INC. TRANSPORTATION PLANNING / TRAFFIC ENGINEERING

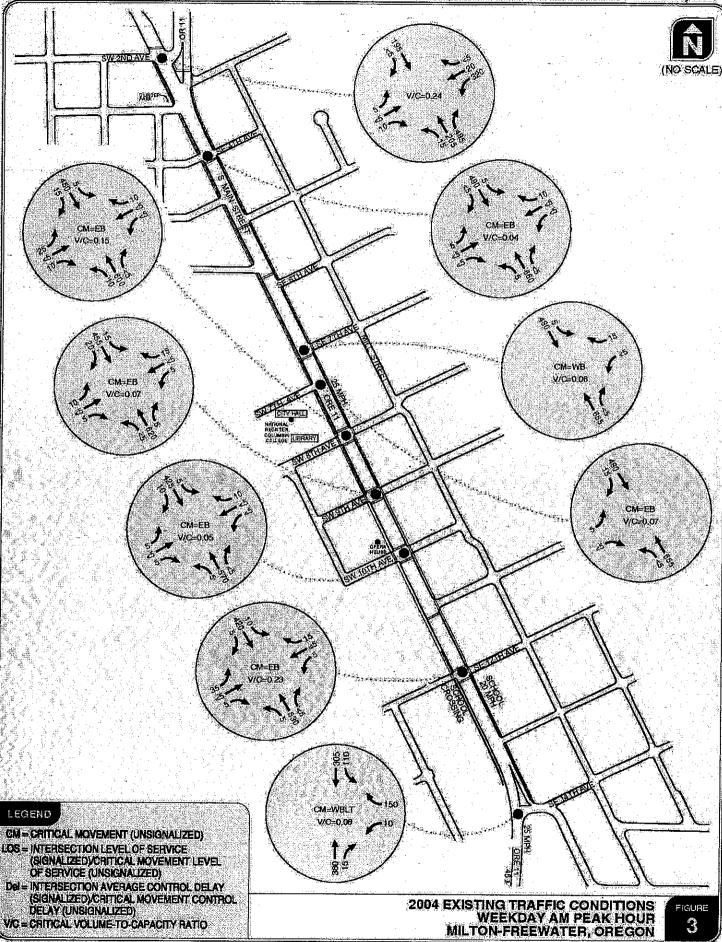
FIGURE

SITE VICINITY MAP

DOWNTOWN MILTON-FREEWATER, OREGON







KITTELSON & ASSOCIATES, INC.

VIC = CRITICAL VOLUME-TO-CAPACITY RATIO

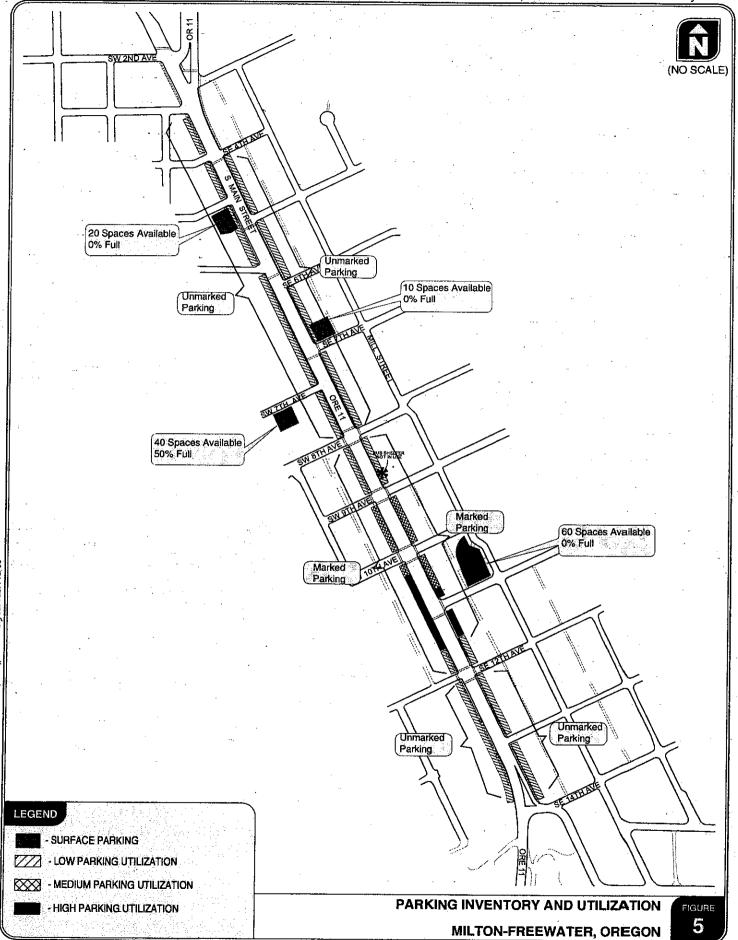
WEEKDAY PM PEAK HOUR

MILTON-FREEWATER, OREGON

1



V/C = CRITICAL VOLUME-TO-CAPACITY RATIO



LEGEND

PUBLIC STREET

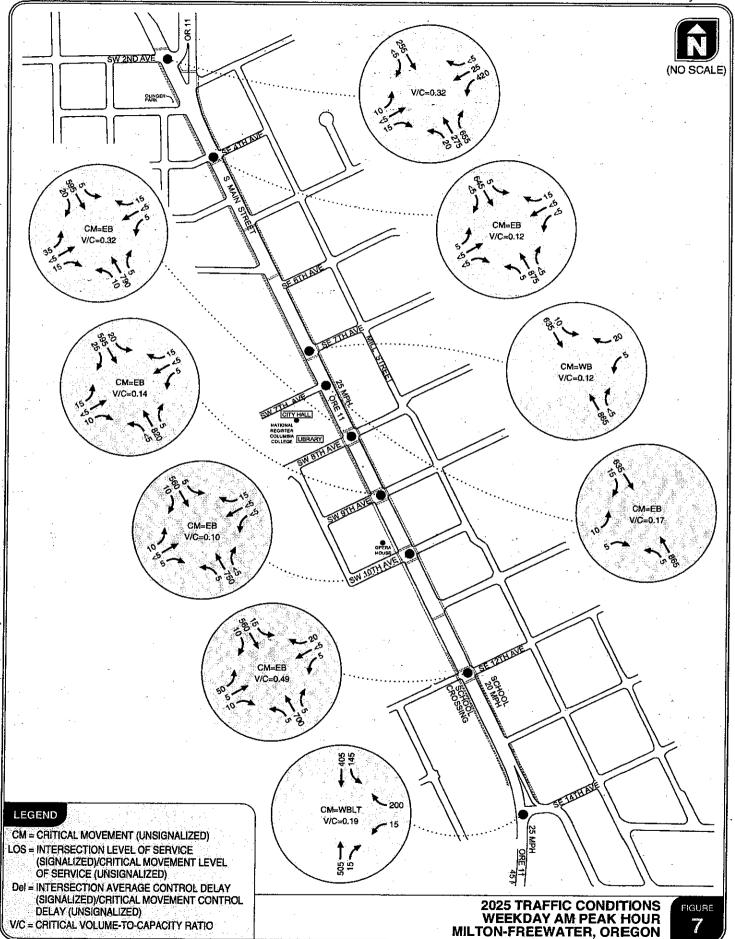
PRIVATE ACCESS DRIVEWAYS

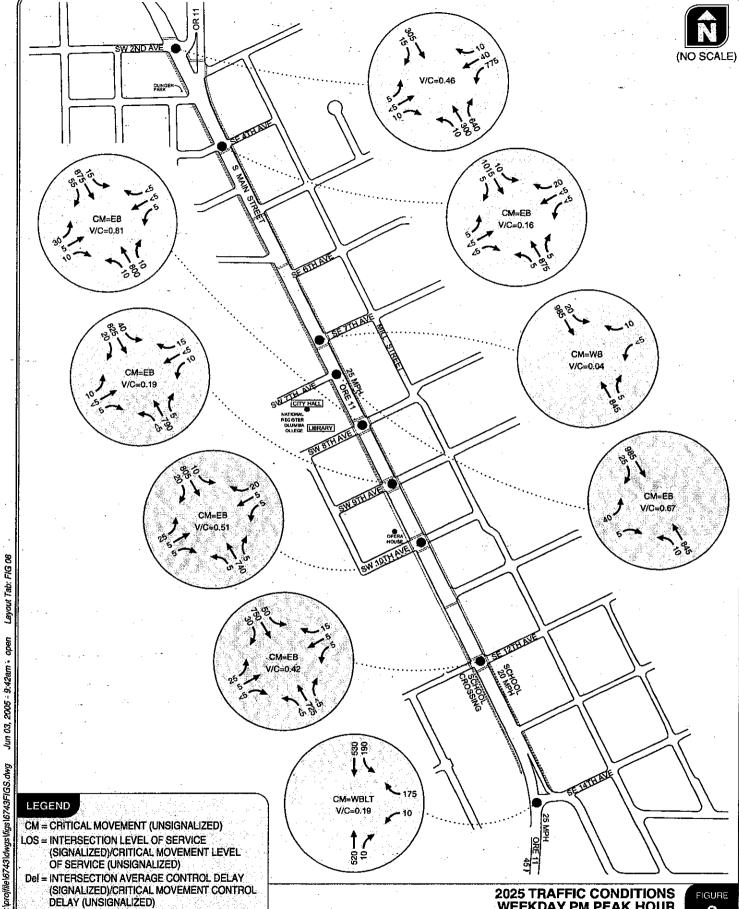
EXISTING ACCESS SPACING

MILTON-FREEWATER, OREGON

FIGURE 6









V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

FIGURE 8

WEEKDAY PM PEAK HOUR

MILTON-FREEWATER, OREGON

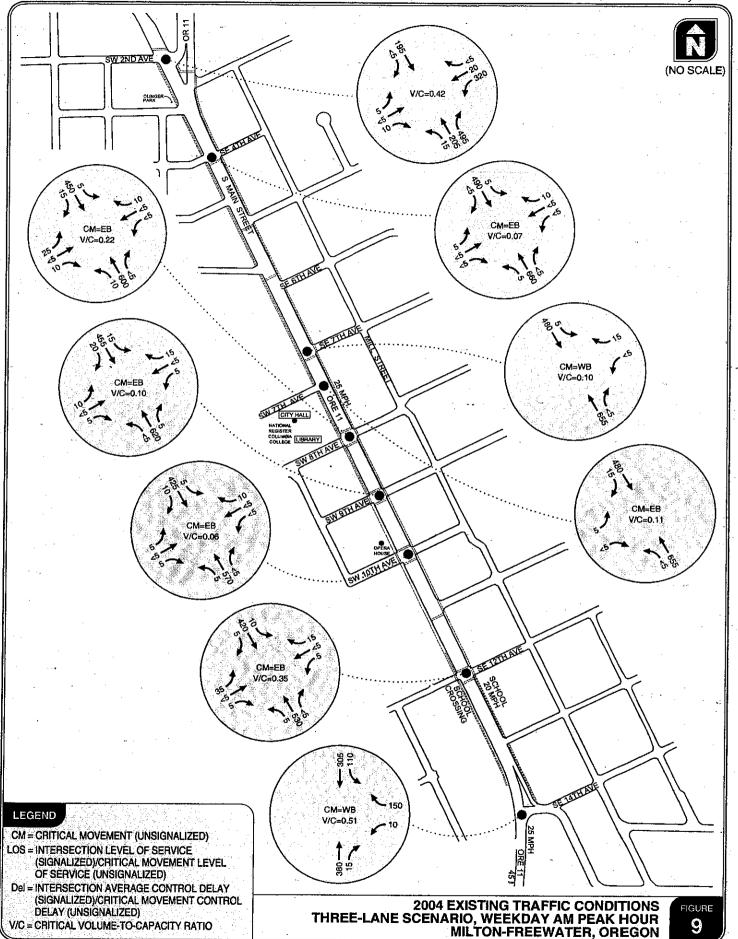


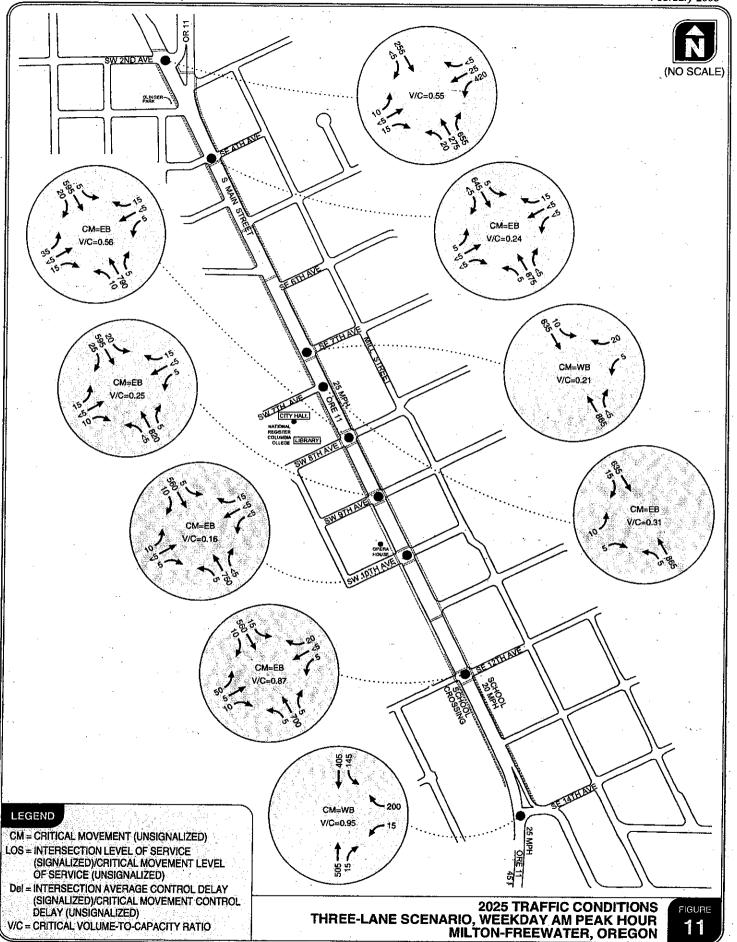


FIGURE 10



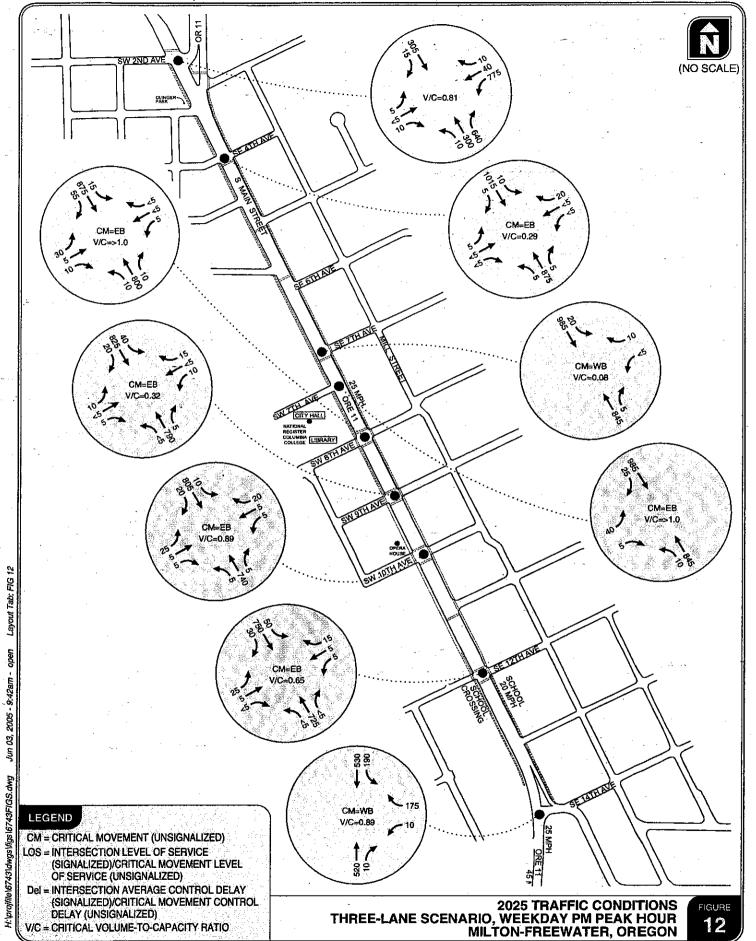
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

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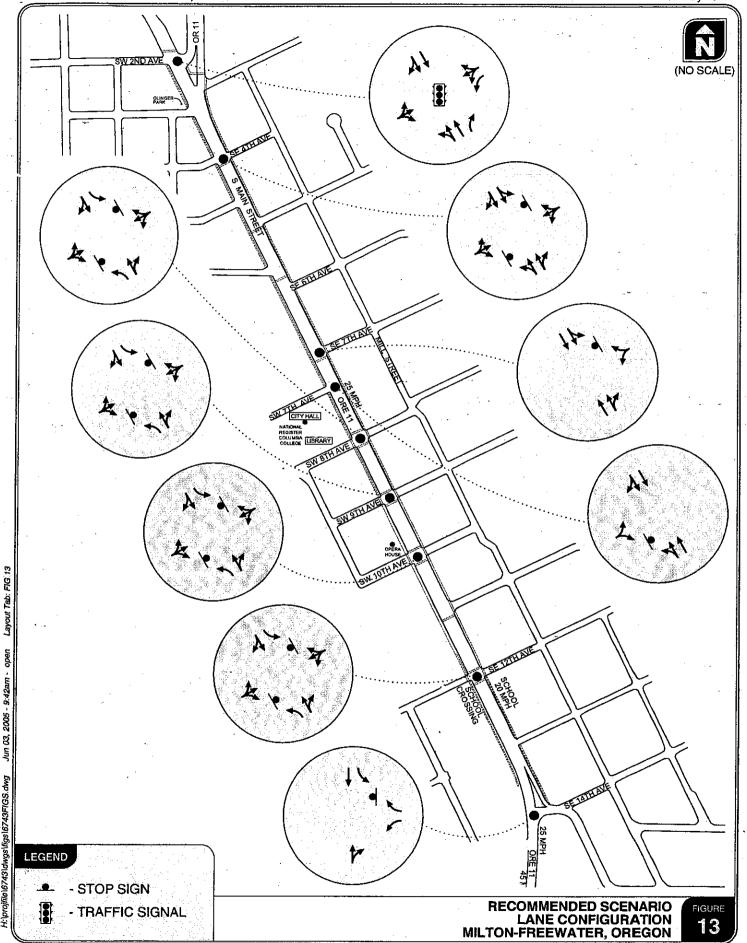


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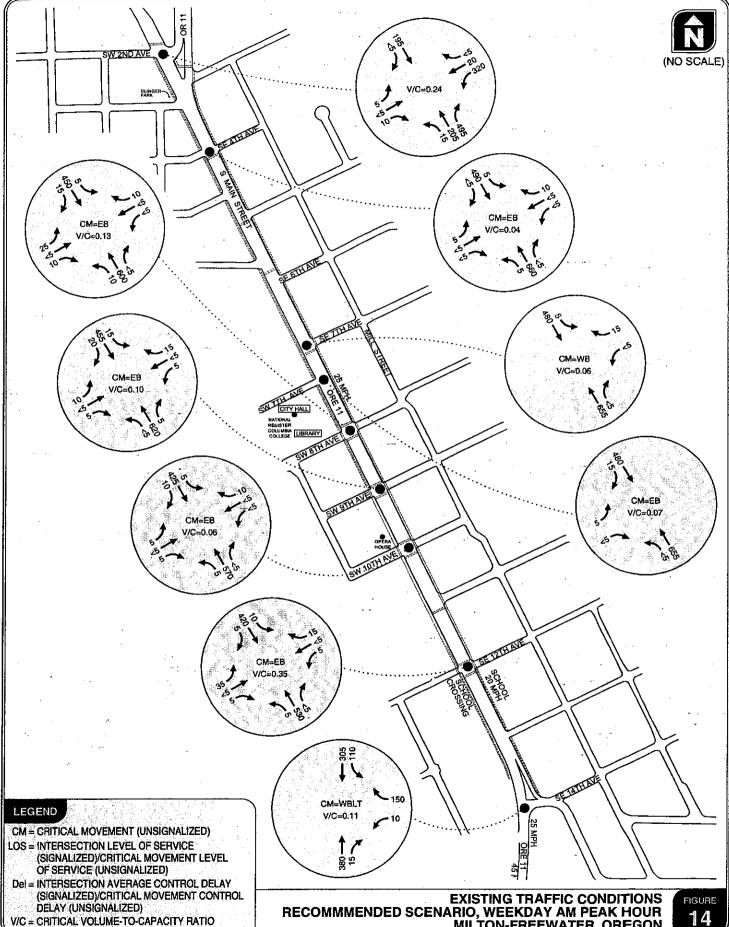
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

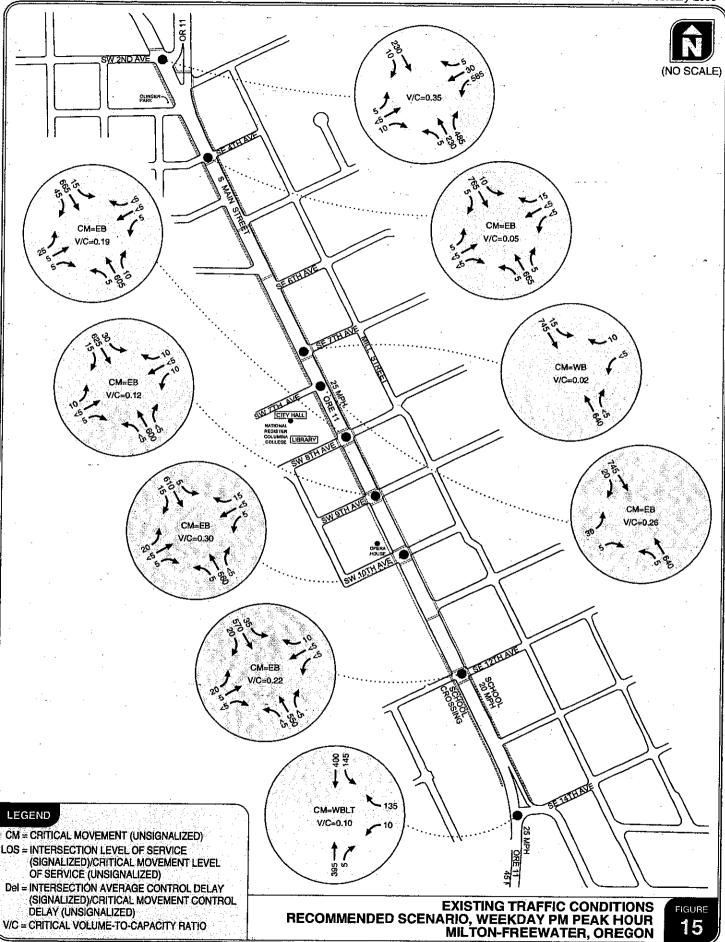




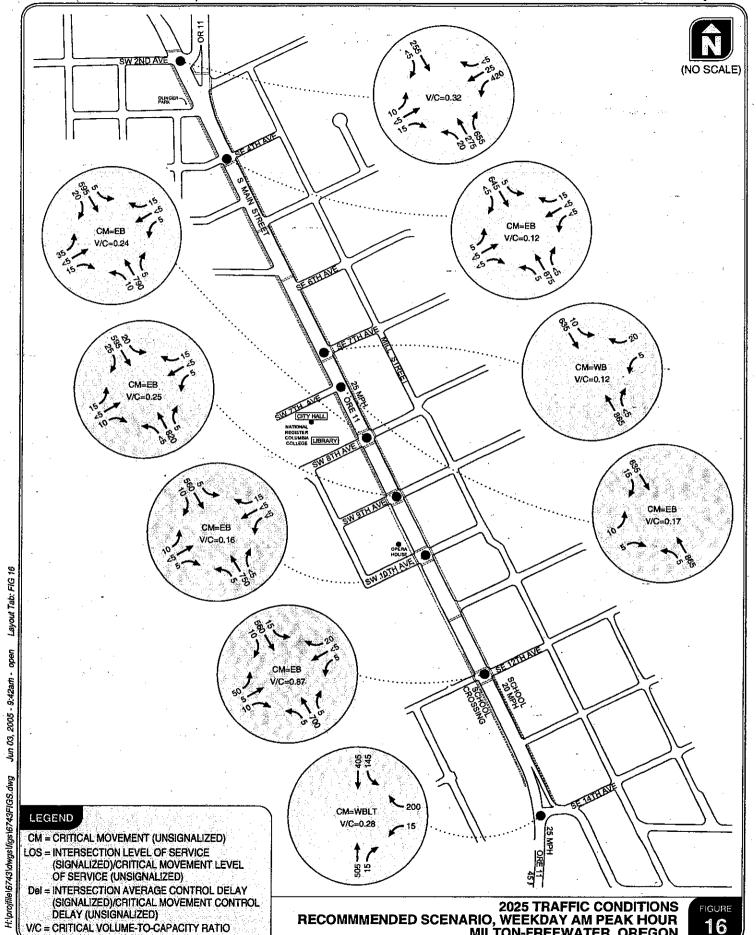
MILTON-FREEWATER, OREGON

14



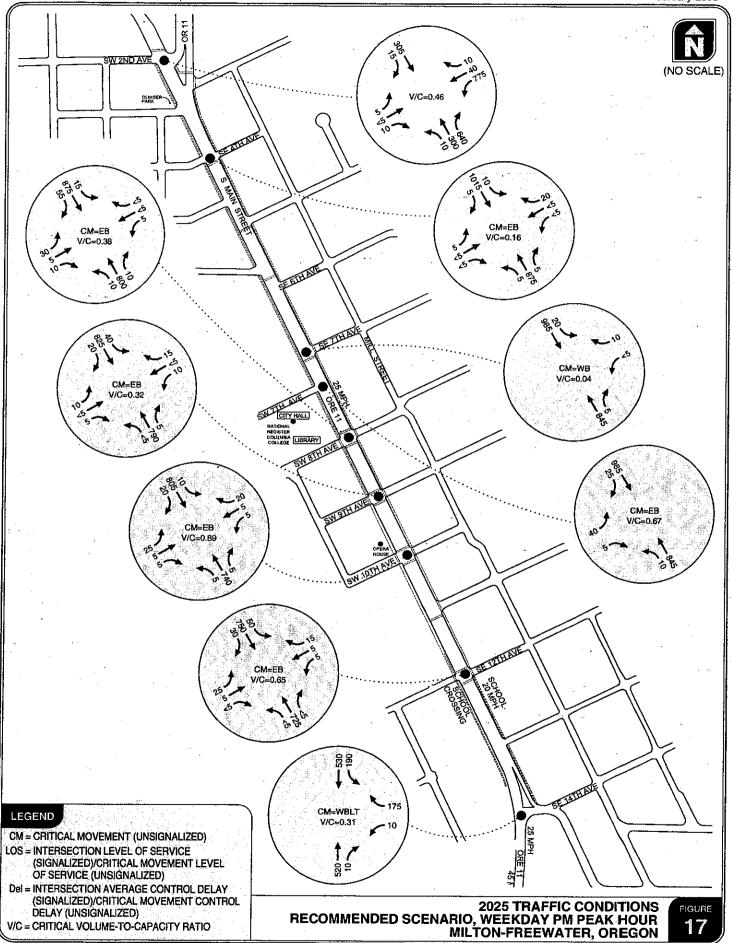


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MILTON-FREEWATER, OREGON





Appendix A

Traffic Count Data

OR11at14th_Reduced.xls

| 7H 67 35 71 63 | LT 28 9 16 | 16 18 23 | WB TH | LT 1 | RT 1 | NB TH 88 | LT | RT | EB TH | LT | Total | Hour Total | PH |
|----------------------------|--|---|---|---|---|--|--|--|---|--|--|---|--|
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| 63 | | 22 | | 3 | 0 | 61 | | | | | 126 | | 4 |
| | ام | | | 4 | 3 | 103 | | | | | 220 | | P. |
| 20 | 9 | 70 | | 1 | . 5 | 165 | | | | | 313 | | |
| 39 | 53 | 41 | | 4 | 5 | 71 | . | | | ' | 213 | | |
| 31 | 25 | 20 | ٠ | 1 | 1 | 46 | · . | | | | | | 1 / |
| 40 | : 23 | 38 | | 2 | .2 | | | | | | | | |
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| 208 | 87 | 152 | | 12 | 13 | 400 | | <u> </u> | | | 872 | | |
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| | | | | 3 | 1 | | İ | | | | 164 | 632 | |
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| | | | | 3 | | 44 | - | | | 1 | 137 | 610 | |
| | | | | 1 | Ō | 41 | | | | | 143 | 589 | |
| | 1 | | | 2 | 0 | 68 | | | | | | | |
| | | | | 3 | 1 | 37 | | | | | 159 | | |
| 45 | 21 | 18 | · | 2 | 4 | 26 | | | | | | | |
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OR8 at S 12th Ave_Reduced.xls

| | | SB | T | | WB | | | NB | Ī | | EB | | | , | |
|---------------|----|-----|-----|-----|------------|----|-----|-----|----|----|-----|-----|-------|------------|------|
| TIME | RT | TH | LT | RT | TH | LT | RT | TH | LT | RT | TH | LT | Total | Hour Total | PHF |
| 07:00-07:15A | 0 | 61 | 1 | 1 | 0 | 1 | 1 | 55 | 0. | 2 | 0 | - 3 | 125 | | 0.86 |
| 07:15-07:30A | 2 | 62 | 2 | 4 | 0 | 1 | 0 | 72 | 1 | 2 | 0 | 5 | 151 | | |
| 07:30-07:45A | 2 | 61 | · 2 | 2 | 0 | 0 | 0 | 85 | 0 | 1 | 0 | 8 | 161 | | |
| 07:45-08:00A | 1 | 66 | 2 | 3 | , 1 | 1 | 1 | 90 | 3 | 1 | 2 | 8 | 179 | | |
| | | | | | | | | | | | | | | | · |
| | | | | | | | | | | | | | | | |
| AM PH Volumes | 5 | 250 | 7 | 10 | 1 | 3 | 2 | 302 | 4 | 6 | 2 | 24 | 616 | | |
| | _ | | | | | | | | | | | | | | |
| 04:00-04:15P | 2 | 68 | 5 | 0 | 1 | 0 | 0 | 70 | 이 | 0 | Ò | 0 | 146 | | 0.73 |
| 04:15-04:30P | 6 | 109 | 4 | 2 | 1 | 1 | , 0 | 80 | 0 | 0 | 2 | 6 | 211 | | |
| 04:30-04:45P | 1 | 63 | 9 | 2 | 0 | 1 | 0 | 45 | 0 | 0 | 0 | 1 | 122 | | |
| 04:45-05:00P | 4 | 60 | 5 | 2 | 0 | 0 | 0 | 61 | 1 | 0 | 1 | 3 | 137 | 1 | |
| 05:00-05:15P | 3 | 78 | 1 | 3 | . 0 | 0 | 0 | 57 | 이 | 0 | 1 | 1 | 144 | | |
| 05:15-05:30P | 1 | 41 | 2 | 0 | 1 | 1 | 0 | 42 | 0 | 0 | . 0 | 2 | 90 | | |
| 05:30-05:45P | 3 | 55 | 1 | . 0 | 0 | 0 | . 0 | 39 | 0 | 1 | 1 | 0 | 100 | | |
| 05:45-06:00P | 6 | 52 | 1 | .0 | 0 | 0 | 0 | 68 | 1 | 2 | 0 | 7 | 137 | : | |
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| PM PH Volumes | 13 | 300 | 23 | 6 | 2 | 2 | 0 | 256 | 1 | 0 | 3 | 10 | 616 | | |

OR11at10th_Reduced.xls

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| TIME | RT | TH | LT | RT | TH | LT | RT | TH | LT | RT | TH | LT | Total | Hour Total | PHE |
| 07:00-07:15A | - 0 | 82 | 1 | 0 | 0 | 0 | 0 | 69 | 2 | 2 | 0 | 0 | 156 | | |
| 07:15-07:30A | 0 | 79 | 1 | 1 | 0 | 0 | 0 | 128 | 2 | 1 | 0 | 0 | 212 | | 0.70 |
| 07:30-07:45A | 3 | 62 | 0 | 3 | 0 | 1 | · 0 | 81 | 1 | 1 | 0 | -1 | 153 | | |
| 07:45-08:00A | 3 | - 96 | . 1 | 4 | 1 | o | 0 | 125 | . 0 | 2 | 0 | 1 | 233 | | <i>:</i> |
| 08:00-08:15A | 1 | 98 | 2 | 2 | 0 | 0 | 1 | 111 | 2 | 3 | Ō | 3 | 223 | | |
| 08:15-08:30A | 0 | 72 | 0 | 0 | 0 | 0 | 0 | 87 | 0 | 1 | Ō | Ō | 160 | | |
| 08:30-08:45A | 0 | 43 | 0 | 0 | 0 | 1 | 0 | 112 | 0 | 0 | 0 | 1 | 157 | | |
| 08:45-09:00A | 0 | 54 | 0 | 1 | 0 | 1 | 0 | 101 | .0 | 0 | 0 | 0 | 157 | | • |
| AM PH Volumes | 7 | 335 | 4 | 10 | 1 | 1 | 1 | 445 | - 5 | 7 | 0 | 5 | 821 | : | · |
| | - 111 | | | | | | | | | | | | | | |
| 04:00-04:15P | 4 | 106 | o | . 0 | 1 | 1 | 2 | 88 | 1 | 0 | 0 | 3 | 206 | 802 | 0.71 |
| 04:15-04:30P | 3 | 95 | 3 | 3 | 0 | · 1 | Ò | 110 | 0 | 2 | Ō | 5 | 222 | 796 | , 0.71 |
| 04:30-04:45P | 5 | 112 | 2 | 2 | 0 | o | Í | 110 | ol | 4 | 1 | 8 | 245 | | |
| 04:45-05:00P | 4 | 116 | 3 | 4 | 0 | 4 | 0 | 84 | 1 | 0 | 0 | 3 | 219 | | |
| 05:00-05:15P | 5 | 125 | 1 | 5 | 2 | 1 | 1 | 94 | 2 | 0 | 0 | 6 | 242 | | |
| 05:15-05:30P | -3 | 171 | 1 | 4 | 0 | ol | 0 | 141 | 2 | 0 | 1 | 0 | 323 | | . • |
| 05:30-05:45P | 0 | 58 | 0 | 0 | 0 | ol | . 0 | 47 | ol | 0 | 0 | 1 | 106 | | |
| 05:45-06:00P | 1 | 53 | 0 | 0 | 1. | ol | 0 | 69 | 0 | 0 | 0 | 3 | 127 | 494 | |
| 06:00-06:15P | 3 | 111 | 0 | 0 | 0 | .0 | 2 | 54 | 4 | 1 | 0 | 2 | 177 | 406 | |
| 06:15-06:30P | . 2 | 102 | 0 | Ö | 0 | .0 | 0 | 71 | 0 | Ô | Ō | 3 | 178 | | |
| 06:30-06:45P | 1 | 88 | 1 | 1 | 0 | 1 | 0 | 71 | 1. | 0 | 0 | 4 | 168 | | |
| 06:45-07:00P | 1 | 47 | 1 | 2 | 0 | 1 | 1 | 56 | o | - 1 | 0 | 1 | 111 | | |
| PM PH Volumes | 17 | 524 | 7 | 15 | 2 | 5 | 2 | 429 | 5 | 4 | 2 | 17 | 1029 | | · |

OR11at9th_RECOUNT_Reduced.xls

| | | SB | | | WB | | | NB | | | EB | | | | |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|------------|-----|
| TIME | RT | TH | LT | RT | ŢH | LT | RT, | TH | LT' | RT | TH | LT | Total | Hour Total | PHI |
| 07:00-07:15A | 2 | 85 | 1 | 2 | 0 | 1 | 0 | 88 | 0 | 1 | 0 | 1 | 181 | 714 | |
| 07:15-07:30A | 1 | 47 | 0 | 2 | 0 | 이 | 1 | 79 | 4 | 0 | 0 | 2 | 136 | | |
| 07:30-07:45A | 5 | 77 | 2 | 2 | 0 | o | 0 | 109 | 0 | 0 | 0 | 4 | 199 | | 0.9 |
| 07:45-08:00A | 5 | 74 | 3 | . 2 | 1 | - 1 | 3 | 103 | 1 | 4 | 0 | 1 | 198 | | -,- |
| 08:00-08:15A | 3 | 64 | 6 | 6 | . 0 | 2 | 0 | 102 | 0 | 2 | 0 | 2 | 187 | | |
| 08:15-08:30A | 1 | 61 | 0 | 0 | 1 0 | .1 | 2 | 71 | . 0 | 0 | 1 | 1 | 138 | | 4 |
| 08:30-08:45A | 2 | 49 | 2 | 0 | 0 | 0 | 0 | 68 | 0 | . 0 | . 0 | 2 | 123 | | |
| 08:45-09:00A | 3 | 63 | 2 | 1 | . 1 | 0 | 0 | 102 | 0 | 0 | 0 | . 3 | 175 | | |
| AM PH Volumes | 14 | 276 | 11 | 10 | 1 | 4 | 5 | 385 | 1 | 6 | . 1 | 8 | 722 | | |
| | | | , | | | | | | | | | | | | |
| 04:00-04:15P | 3 | 104 | 7 | 0 | 0 | . 0 | 1 | 125 | 0 | 2 | 0 | 1 | 243 | 861 | 0.8 |
| 04:15-04:30P | 3 | 94 | 6 | 3 | 0 | 4 | 0 . | 83 | 0 | . 2 | 0 | 3 | 198 | | |
| 04:30-04:45P | 4 | 100 | 5 | 1 | 0 | 2 | 1 | 118 | 0 | 1 | 0 | 0 | 232 | 1 | |
| 04:45-05:00P | 0 | 87 | 4 | 5 | 0 | 2 | 0 | 87 | 0 | . 0 | 0 | 3 | 188 | | |
| 05:00-05:15P | 4 | 104 | 1 | 0 | 0 | ol | 1 | 88 | - 0 | 0 | -0 | 0 | 198 | | |
| 05:15-05:30P | 2 | 124 | 4 | 1 | 0 | 3 | O | 94 | 0 | 1 | Ò | 1 | 230 | | |
| 05:30-05:45P | 2 | 94 | 2 | 3 | 0 | ol | 1 | .71 | 2 | 0 | Ō | 0 | 175 | | |
| 05:45-06:00P | 3 | 83 | 4 | 5 | 0 | ol | 0 | 94 | 0 | 1 | 0 | 1 | 191 | | |
| 06:00-06:15P | 0 | 55 | - 5 | 0 | 0 | - 1 | 0 | 65 | 0 | 0 | 0 | 1 | 127 | 526 | |
| 06:15-06:30P | 0 | 74 | 7 | 5 | 0 | ol | 2 | 83 | 0 | 0 | 0 | 1 | 172 | | |
| 06:30-06:45P | 0 | 53 | 4 | 2 | 0 | o | - 3 | 52 | . 0 | Ō | 0 | 0 | 114 | | |
| 06:45-07:00P | 4 | 55 | 4 | 3 | . 0 | 0 | 0 | 47 | 0 | Ō | Ö | 0 | 113 | | |
| | · · | | · | | | | | | | | | | - | | - |
| PM PH Volumes | 10 | 385 | 22 | 9 | 0 | 8 | 2 | 413 | 0 | 5 | 0 | 7 | 861 | | : |

OR11at8th_Reduced.xls

| | | SB | | | WB | | | NB | | | EB | | | | |
|---------------|----|-----|------------|----|--------|----|-----|-----|-----|-----|-----|----|-------|---------------------------------------|------|
| TIME | RT | TH | <u>L</u> T | RT | TH | LT | RT | TH | LT | RT | TH | LT | Total | Hour Total | PHI |
| 07:00-07:15A | 1 | 74 | 3 | 3 | 0 | 0 | . 0 | 63 | 2 | 2 | 0 | -5 | 153 | 787 | • |
| 07:15-07:30A | 4 | 53 | 0 | 3 | . 0 | 0 | . 0 | 97 | 0 | . 0 | 0 | 77 | 164 | | |
| 07:30-07:45A | 4 | 82 | 1 | 6 | 1 | 2 | 1 | 134 | 2 | 3 | 0 | 12 | 248 | | 0.88 |
| 07:45-08:00A | 2 | 87 | 0 | 2 | 0 | 0 | . 1 | 121 | 3 | 3 | 0 | 3 | 222 | | |
| 08:00-08:15A | 3 | 76 | 1 | 2 | 0 | 0 | 0 | 109 | 1 | . 2 | 0 | 7 | 201 | | 1 - |
| 08:15-08:30A | 3 | 78 | 1 | 1 | 0 | 0 | 0 | 113 | 2 | 3 | 0 | 1 | 202 | | |
| 08:30-08:45A | 2 | 86 | 1 | 2 | 0 | 1 | 0 | 91 | 4 | 0 | 0 | 1 | 188 | | • |
| 08:45-09:00A | 2 | 82 | 3 | ,0 | Ò | 1 | 0 | 115 | 2 | 3 | 1 | 7 | 216 | | |
| AM PH Volumes | 12 | 323 | 3 | 11 | 1 | 2 | 2 | 477 | 8 | 11 | 0 | 23 | 873 | | |
| | | • | | | | | | | : | | | | | · | |
| 04:00-04:15P | 13 | 94 | 1 | ÷0 | 0 | o | 4 | 91 | 2 | 0 | 0 | 2 | 207 | 964 | |
| 04:15-04:30P | 10 | 120 | 2 | 1 | 1 | 1 | 0 | 119 | 0 | 2 | 2 | 9 | 267 | 1003 | 0.81 |
| 04:30-04:45P | 12 | 157 | 5 | 0 | . 0 | 2 | 5 | 124 | 1 | 0 | 0 | 4 | 310 | | |
| 04:45-05:00P | 5 | 83 | 1 | 0 | 0 | 0 | 2 | 81 | 3 | 2 | Ó | 3 | 180 | | |
| 05:00-05:15P | 10 | 133 | 3 | 0 | 0 | 0 | 2 | 90 | 2 | 2 | 1 | 3 | 246 | | |
| 05:15-05:30P | 5 | 102 | 5 | 0 | 0 | 0 | 1 | 71 | 1 | 1 | . 0 | 4 | 190 | | |
| 05:30-05:45P | 6 | 104 | 3 | 2 | 0. | 0 | 0 | 88 | 2 | 1 | Ö | 10 | 216 | | : |
| 05:45-06:00P | 7 | 99 | 1 | 1 | 0 | 0 | 0 | 93 | 5 | 3 | 0 | 7 | 216 | | • |
| 06:00-06:15P | 10 | 99 | 5 | 2 | 0 | ol | 0 | 92 | 3 | 1 ' | 0 | 1l | 213 | | |
| 06:15-06:30P | 6 | 91 | 2 | 5 | 1. | o | Ö | 85 | 1 | o l | 0 | 10 | 201 | | |
| 06:30-06:45P | 6 | 54 | 5 | 1 | .0 | 0 | 0 | 67 | · 1 | 1 | 0 | ol | 135 | | |
| 06:45-07:00P | 5 | 53 | 1 | 0 | 0 0 | 1 | 0 | 65 | . 2 | 1 | 0 | 3 | 131 | | |
| PM PH Volumes | 37 | 493 | 11 | 1 | 1 | 3 | 9 | 414 | 6 | 6 | 3 | 19 | 1003 | · · · · · · · · · · · · · · · · · · · | |

OR11at7th_Reduced.xls

| | | SB | | | WB | I | | NB | | , , | EB | | | | |
|-----------------------|--------------------|-----|----|----|-----|----|-----|------|------------|-----|----------|----------------|-------|------------|----------|
| TIME | RT | TH | LT | RT | TH | LT | RT | TH | LT | RT | TH | LT. | Total | Hour Total | PHI |
| 07:00-07:15A | 3 | 72 | 0 | 2 | ; 0 | 0 | 0 | 91 | 0 | 1 | 0 | 1 | 170 | 785 | 0.6 |
| 07:15-07:30A | 3 | 51 | 1 | 2 | 0 | 0 | 0 | 66 | o | 0 | .0 | 3 | | | |
| 07:30 - 07:45A | . 3 | 76 | 2 | 7 | 2 | 0 | 0 | 100 | 0 | 0 | . 0 | 1 | 191 | | |
| 07:45-08:00A | 1 | 113 | 2 | 1 | 0 | 0 | 1 | 175 | 2 | 1 | 0 | 2 | 298 | | |
| | | ٠ | | | | | | | : | | | | ÷ . | | |
| | | - | | | | | •. | | | • | | | | ì | |
| AM PH Volumes | 10 | 312 | 5 | 12 | 2 | 0 | 1 | 432 | 2 | 2 | 0 | 7 | 785 | | |
| · | | | | | | | | | | | <u> </u> | • | | | |
| 04:00-04:15P | 7 | 137 | 4 | 0 | 0. | o | 0 | 112 | 1 | 3 | 0 | 13 | 277 | 1023 | 0.8 |
| 04:15-04:30P | 4 | 107 | 2 | 1 | 1 | 0 | 2 | 134 | 1 | 0 | 2 | 6 | | | |
| 04:30-04:45P | 3 | 148 | 2 | 2 | 0 | 0 | . 0 | 136 | 1 | Ō. | 1 | 6 | | | |
| 04:45-05:00P | 2 | 105 | 5 | 4 | 10 | ol | 0 | 67 | 3 | Ō | 0 | 1 | 187 | | 1 |
| 05:00-05:15P | 1 | 157 | ol | 5 | 0 | ol | 0 | 108 | ol | Ō | Ō | 2 | 273 | | |
| 05:15-05:30P | 3 | 126 | 2 | 3 | 0 | 0 | 1 | 87 | 2 | 1 | 0 | 1 | 226 | | • |
| 05:30-05:45P | 2 , 5, . | 105 | 6 | 1 | 0 | 0 | 0 | · 71 | 1 | 0 | 0 | 4 | 190 | | |
| 05:45-06:00P | 5 . | 111 | 4 | 3 | 0 | o | 1 | 89 | 이 | 0 | 0 | [*] 3 | 216 | | |
| | | , | | | | | | | <i>.</i> · | | | | | | |
| | | | | | | | | | . | ÷ | | | | | |
| | | | | ٠. | | | | | | • | | | | | |
| PM PH Volumes | 16 | 497 | 13 | 7 | -1 | 0 | 2 | 449 | 6 | 3 | 3 | 26 | 1023 | ļl | <u> </u> |

OR8 at S 4th Ave_Reduced.xls

| | | SB | T | , | WB | | • | NB | T | | EB | | | | |
|----------------|-----|-------|-------|-----|-----|-----|-----|------------|-----|-----|------|-----|-------|------------|---|
| TIME | RT | TH | LT | RT | TH | LT | RT | TH | LT | RT | TH | LT | Total | Hour Total | PHI |
| 07:00-07:15A | 0 | 63 | 1 | 0 | . 1 | 0 | 1 | 69 | · 1 | 1 | 0 | 1 | 138 | | 0.78 |
| 07:15-07:30A | 0 | 76 | 1 | 4 | 0 | 1 | 0 | 114 | 1 | 0 | 0 | 1 | 198 | | |
| 07:30-07:45A | 1 | 87 | 0 | - 1 | 0 | 0 | 0 | 140 | 1 | 0 | 0 | 1 | ∜ 231 | | |
| 07:45-08:00A | 0 | 119 | 2 | . 3 | 0 | 0 | Ö | 145 | 0 | 0 | 0 | 1 | 270 | 1 | |
| | | : | | • | | | | · • | | | | : | • | | |
| | • | | | | | | | - : | | | | | : | | j v |
| AM PH Volumes | 1 | 345 | 4 | 8 | 1 | 1 | 1 | 468 | 3 | 1 | 0 | 4 | 837 | | |
| | | ····· | | | | | • | | | · · | | • | | | |
| 04:00-04:15P | 1 | 156 | 0 | 4 | . 1 | 0 | 0 | 136 | 1 | 0 | Ó | 2 | . 301 | 1169 | 0.87 |
| 04:15-04:30P | 2 | 180 | 3 | 2 | .0 | 0 | 0 | 148 | 2 | 0 | 0 | 0 | 337 | | |
| 04:30-04:45P | 1. | 105 | 3 | 2 | 0 | . 0 | 3 | 89 | - 1 | 1. | 0 | 1 | 206 | | |
| 04:45-05:00P | 0 | - 173 | 1 | 2 | 0 | 0 | 0 | 148 | 이 | 0 | . 0 | - 1 | 325 | | |
| 05:00-05:15P | 3 : | 159 | 2 | 3 | O | 0 | 0 | 118 | o | 0 | 0 | 1 | 286 | | |
| 05:15-05:30P | 1 | 173 | 5 | 1 | 0 | 1 | 0 - | 113 | o | 0 | 0 | o | 294 | | |
| 05:30-05:45P | 2 | 130 | - 2 | 2 | 0 | Ö | 0 | 94 | 0 | 1 | 0 | ol | 231 | | |
| 05:45-06:00P | 0 | 157 | 1 | 1 | 0 | 0 | 5 | 130 | 4 | 0 | 0 | 0 | 298 | | |
| · | | | | | | , | | ` | | | | | | | |
| | | | | | | , | | | | | | | | | * + + + + + + + + + + + + + + + + + + + |
| PM PH Volumes | 4 | 614 | 7 | 10 | 1 | 0 | | 5041 | | · | - Al | | 4400 | | <u>wi</u> |
| in ill volunes | ** | 014 | - (1) | 10 | | U | 3 | 521 | 4 | 1 | 0 | 4 | 1169 | | |

OR11at2nd_RECOUNT_Reduced.xls

| | | SB | | | WB | | | NB | T | | EB | | | | : |
|---------------|-----|------|-----|-----|-----|------|------|-----|-----|-----|-----|----|-------|------------|------|
| TIME | RT | TH | LT | RT | TH | LT | RT | TH | LT | RT | TH | LT | Total | Hour Total | PHF |
| 07:00-07:15A | 0 | 25 | 0 | 0 | 3 | 67 | 38 | 27 | 5 | 0 | 0 | 0 | 165 | 969 | |
| 07:15-07:30A | 0 | 35 | 0 | 1 | . 7 | 57 | 81 | 44 | . 5 | 3 | 0 | 4 | 237 | 1050 | 0.90 |
| 07:30-07:45A | 0 | 41 | 0 | 0 | 4 | 68 | 123 | 40 | 6 | 7 | 0 | 3 | 292 | | |
| 07:45-08:00A | 0 | 51 | 0 | 0 | .7 | 69 | 98 | 47 | 2 | 1 | 0 | 0 | 1 | | |
| 08:00-08:15A | 0. | 32 | · 0 | -0 | 1 | 68 | 105 | 39 | 1 | 0 | 0 | 0 | - | | |
| 08:15-08:30A | 1 | 16 | ol | 0 | 0 | 45 | 46 | 15 | ol | 1 | 0 | 0 | t . | | |
| 08:30-08:45A | 1 | 30 | ol | 0 | 1 | 84 | 117 | 39 | 2 | 3 | Ō | 0 | 277 | | : |
| 08:45-09:00A | . 0 | 23 | 0 | 4 | 3 | 44 | 56 | 20 | 0 | 3 | . 2 | 1 | 156 | | • |
| AM PH Volumes | 0 | 159 | . 0 | 1 | 19 | 262 | 407 | 170 | 14 | 11 | 0 | 7 | 1050 | | |
| | | | : | | | | : | | | | | | | | |
| 04:00-04:15P | 5 | 43 | _ 0 | 1 | 11 | 130 | 105 | 42 | 1 | 0 | 0 | 0 | 338 | 1327 | 0.92 |
| 04:15-04:30P | 1 | 42 | . 0 | 2 | 5 | 126 | 125 | 55 | · 0 | . 3 | 0 | 3 | 362 | | |
| 04:30-04:45P | 5 | 52 | ol | 0 | 10 | 116 | 82 | 46 | 4 | 3 | 0 | 2 | 320 | | |
| 04:45-05:00P | 1 | 52 | 0 | 3 | 5 | 109 | 86 | 44 | 2 | 3 | 2 | 0 | | | . • |
| 05:00-05:15P | 3 | 53 | . 0 | 1 | 12 | 143 | 70 | 23 | 3 | 5 | 0 | 2 | | | |
| 05:15-05:30P | 0 | 35 | 0 | 0 | 10 | 131 | 83 | 29 | 1 | 3 | 0 | 1 | 293 | | |
| 05:30-05:45P | 1 | 41 | 이 | 1 | 6 | 111 | : 77 | 21 | | 2 | 0 | 2 | | | |
| 05:45-06:00P | ` 1 | 62 | 0 | 0 | 8 | 129 | 60 | 34 | 4 | 2 | 0 | 2 | 302 | | |
| 06:00-06:15P | 2 | 30 | 이 | . 1 | 9 | 121 | 72 | 40 | 1 | 5 | 0 | 0 | | 839 | |
| 06:15-06:30P | 2 | 34 | 0 | 2 | 7 | 85 | 50 | 24 | 4 | 4 | 0 | 2 | 214 | | |
| 06:30-06:45P | 4 | . 15 | 이 | 1 | 6 | - 68 | 47 | 15 | 1 | 1 | Ō | 1 | 159 | | |
| 06:45-07:00P | 0 | 29 | 0 | 0 | 5 | 78 | 38 | 27 | 3 | 1 | Ō | 4 | 185 | | |
| PM PH Volumes | 12 | 189 | 0 | 6 | 31 | 481 | 398 | 187 | 7 | 9 | 2 | 5 | 1327 | | · |

Appendix B

Existing Traffic Condition Analysis Worksheets .Page 1-1

Thu Jun 2, 2005 14:39:12

Page 2-1

Kittelson & Associates, Inc. - Project # 6743 Milton-Freewater STA and TSP Update, Milton-Freewater, OR 2004 Existig Traffic Condition, Weeday AM Peak Hour

Scenario Report

Scenario:

ĘΧ

Command: AM Volume: AM

Geometry: Impact Fee: Trip Generation:

Trip Distribution:

Default Impact Fee Default Trip Generation Default Trip Distribution Default Paths

Paths: Routes: Configuration:

Default Routes Default Configuration

Kittelson & Associates, Inc. - Project # 6743 Milton-Freewater STA and TSP Update, Milton-Freewater, OR 2004 Existig Traffic Condition, Weeday AM Peak Hour

Impact Analysis Report Level Of Service

| In | tersection | | Base Del/ V/ | | future Del/ V/ | Change in |
|----|---------------------------------|---|-----------------------|---|-----------------------|--------------|
| # | 1 OR 11/ 14th Ave | | S Veh C 16.9 0.000 | | S Veh C 16.9 0.000 | + 0.000 D/V |
| # | 2 Main Street-OR11/ 12th Ave | С | 24.2 0.000 | С | 24.2 0.000 | + 0.000 D/V |
| # | 3 Main Street - OR 11/ 10th Ave | С | 16.4 0.000 | С | 16.4 0.000 | + 0.000 D/V |
| # | 4 Main Street - OR 11/ 9th Ave | C | 18.2 0.000 | C | 18.2 0.000 | + 0.000 D/V |
| # | 5 Main Street-OR11/ 8th Ave | С | 19.7 0.000 | С | 19.7 0.000 | + 0.000 D/V |
| # | 6 OR 11/7th Ave - Eastbound | С | 24.5 0.000 | С | 24.5 0.000 | + 0.000 D/V |
| # | 7 OR 11/7th Avenue - Westbound | В | 14.0 0.000 | В | 14.0 0.000 | + 0.000 D/V |
| # | 8 OR 11/ 4th Avenue | D | 26.2 0.000 | D | 26.2 0.000 | + 0.000 b/V |
| # | 9 Main Street/OR11/ 2nd Ave | С | 20.4 0.239 | С | 20.4 0.239 | + 0.000 D/V |

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| Signal Warrant | Summary Report | |
|---|----------------|-------------|
| Intersection | Base Met | Future Met |
| | [Del / Vol] | [Del / Vol] |
| # 1 OR 11/ 14th Ave | ??? / ??? | No / No |
| # 2 Main Street-OR11/ 12th Ave | ??? / ??? | No / No |
| # 3 Main Street - OR 11/ 10th Ave | ??? / ??? | No / No |
| # 4 Main Street - OR.11/ 9th Ave | 777 / 777 | No / No |
| # 5 Main Street-OR11/ 8th Ave | 777 / 777 | No / No |
| # 5 Main Street-OR11/8th Ave 6 OR 11/7th Ave - Eastbound # 7 OR 11/7th Avenue - Westbound | ??? / ??? | No / No |
| # 7 OR 11/7th Avenue - Westbound | 777 / 777 | No / No |
| # 8 OR 11/ 4th Avenue | 777 / 777 | No / No |

Kittelson & Associates, Inc. - Project # 6743 Milton-Freewater STA and TSP Update, Milton-Freewater, OR 2004 Existig Traffic Condition, Weeday AM Peak Hour

Peak Hour Oelay Signal Warrant Report Intersection #1 OR 11/ 14th Ave Future Volume Alternative: Peak Hour Warrant NOT Met Approach: North Bound South Bound East Bound Movement: L - T - R L - T - R L - T - R Control: Uncontrolled Uncontrolled Stop Sign Stop Sign 1 0 0 0 1 0 1 1 0 0 Lanes: 0 0 0 1 0 0 0 0 0 Final Vol.: 0 544 19 154 437 0 0 0 0 17 0 217 ApproachDel: XXXXXX XXXXXX XXXXXX 16.9 Approach[westbound] [lanes=2] [control=Stop] Signal Warrant Rule #1: [vehicle-hours=1.1] FAIL - Vehicle-hours less than 5 for two or more lane approach. Signal Warrant Rule #2: [approach volume=234] SUCCEED - Approach volume >= 150 for two or more lane approach. Signal Warrant Rule #3: [approach count=3] [total wolume=1388]

SUCCEED - Total volume greater than or equal to 650 for intersection

with less than four approaches.

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Minor Approach Volume:

Minor Approach Volume Threshold: 313

Kittelson & Associates, Inc. - Project # 6743 Milton-Freewater STA and TSP Update, Milton-Freewater, OR 2004 Existig Traffic Condition, Weeday AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban] intersection #1 OR 11/ 14th Ave **有事我我有我就是我我我想得我还是我的**我我的的的女女,我们的的女女的女士也也也也不是我的的女女女女女女女女女女女女女女女女女女女女女女女女女女女女女 Future Volume Alternative: Peak Hour Warrant NOT Met Approach: North Bound South Bound East Bound West Bound Movement: L - T - R L - T - R L - T - R L - T - R Uncontrolled Stop Sign Stop Sign Control: Stop Sign Stop Sign 0 0 0 1 0 0 1 1 0 0 0 0 0 0 0 1 0 0 0 1 Lanes: 0 544 19 154 437 0 0 0 0 17 0 217 Final Vol.: Major Street Volume: 1154

234

)

Traffix 7.7.1115 (c) 2004 Dowling Assoc. Licensed to KITTELSON, PORTLAND

Signal Warrant Rule #3: [approach count=4] [total volume=1299]

with four or more approaches.

SUCCEED - Total volume greater than or equal to 800 for intersection

2004 Existig Traffic Condition, Weeday AM Peak Hour Peak Hour Delay Signal Warrant Report Intersection #2 Main Street-OR11/ 12th Ave Future Volume Alternative: Peak Hour Warrant NOT Met ------North Bound Approach: South Bound East Bound Movement: L - T - R L - T - R Uncontrolled Uncontrolled Stop Sign Control: Stop Sign 0 1 0 1 0 0 0 1! Ŏ 0 Lanes: 0 1 0; 1 0 0 0 1! 0 0 5 664 13 528 9 Final Vol.: 45 3 8 4 1 19 ApproachDel: XXXXXX XXXXXX 24.2 13.7 Approach[eastbound][lanes=1][control=Stop] Signal Warrant Rule #1: [vehicle-hours=0.4] FAIL - Vehicle-hours less than 4 for one lane approach. Signal Warrant Rule #2: [approach volume=55] FAIL - Appreach volume less than 100 for one lane approach. Signal Warrant Rule #3: [approach count=4] [total volume=1299] SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches. Approach [westbound] [lanes=1] [control=Stop] Signal Warrant Rule #1: [vehicle-hours=0.1] FAIL - Vehicle-hours less than 4 for one lane approach. Signal Warrant Rule #2: [approach volume=24] FAIL - Approach volume less than 100 for one lane approach.

Kittelson & Associates, Inc. - Project # 6743

Milton-Freewater STA and TSP Update, Milton-Freewater, OR

Peak Hour Volume Signal Warrant Report [Urban] Intersection #2 Main Street-OR11/2 12th Ave *************** Approach: Hovement: South Bound East Bound L - T - R L - T - R L - T - R L - T - R Stop Sign Stop Sign Control: Uncontrolled Uncontrolled 0 1 0 1 0 0 1 0 1 0 0 0 1! 0 0 0 0 1 0 0 Lanes: 13 528 9 45 3 8 5 664 3 **#inal Vol.:** 4 1 19 Malor Street Volume: Minor Approach Volume:

Minor Approach Volume Threshold: 216

Kittelson & Associates, Inc. - Project # 6743 Milton-Freewater STA and TSP Update, Milton-Freewater, OR 2004 Existig Traffic Condition, Weeday AM Peak Hour

Peak Hour Delay Signal Warrant Report

************************ Intersection #3 Main Street - OR 11/ 10th Ave North Bound South Bound. East Bound Approach: L - T - R Movement: L - T - R L - T - R L - T - R Stop Sign Uncontrol led Uncontrolled Stop Sign Control: 0 1 0 1 0 5 482 9 0 0 1! 0 0 0 0 1! 0 0 Lanes: 0 1 0 1 0 Final Vol.: 6 647 1 ApproachDel: XXXXXX XXXXXX 16.4 Approach [eastbound] [lanes=1] [control=Stop] Signal Warrant Rule #1: [vehicle-hours#0.1] FAIL - Vehicle-hours less than & for one lane approach. Signal Warrant Rule #2: [approach volume=15]

Approach[westbound] [lanes=1] [control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=15]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4] [total volume=1179]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SUCCEED - Total volume greater than or equal to 800 for intersection

FAIL - Approach volume less than 100 for one lane approach. Signal Warrant Rule #3: [approach count=4][total volume=1179]

with four or more approaches.

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Peak Hour Delay Signal Warrant Report

Intersection #4 Main Street - OR 11/ 9th Ave

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach: North Bound South Bound East Bound West Bound Movement: L - T - R L - T - R L - T - R --,------||--,---|| Uncontrolled Uncontrolled Control: Stop Sign Stop Sign 0 1 0 1 0 Lanes: 0 1 0 1 0 0 0 1! 0 0 0 0 1 0 0 1 681 5 16 497 21 Final Vol.: 12 ApproachDel: 18.2 XXXXXX XXXXXX 14.6

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]

FAIL - Vehicle-hours less than 4 for one lane approach.

Signal Warrant Rule #2: [approach volume=20]
FAIL - Approach volume less than 100 for one lane approach.

Signal Warrant Rule #3: [approach count=4][total volume=1262]
SUCCEED - Total volume greater than or equal to 800 for intersection
with four or more approaches.

Approach[westbound][lanes=1][control=Stop] Signal Warrant Rule #1: [vehicle-hours=0.1]

FAIL - Vehicle-hours less than 4 for one lane approach.

Signal Warrant Rule #2: [approach volume=20]

FAIL - Approach volume less than 100 for one lane approach. Signal Warrant Rule #3: [approach count=4][total volume=1262]

SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Kittelson & Associates, Inc. - Project # 6743 Milton-Freewater STA and TSP Update, Milton-Freewater, OR 2004 Existig Traffic Condition, Weeday AM Peak Hour Peak Hour Volume Signal Warrant Report [Urban] Intersection #3 Main Street - OR 11/ 10th Ave Future Volume Alternative: Peak Hour Warrant NOT Approach: North Bound South Bound East Bound West Bound Movement: L - T - R L - T - R L - T - R L - T - R Uncontrolled Uncontrolled Stop Sign Stop Sign 0 1 0 1 0 Lahes: 0 1 0 1 0 0 0 11 0 0 0 0 1! 0 0 Final Vol.: 6 647 1 5 482 9 8 1 6 1 1 13 -----| Major Street Volume: 1150 Minor Approach Volume: Minor Approach Volume Threshold: 237

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Minor Approach Volume:

Minor Approach Volume Threshold: 216

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Peak Hour Volume Signal Warrant Report [Urban] Intersection #4 Main Street - OR 11/ 9th Ave Future Volume Alternative: Peak Hour Warrant NOT Met |-----Approach: North Bound South Bound East Bound West Bound Movement: L - T - R L - T - R L - T - R L - T - R Uncontrolled Uncontrolled Stop Sign Stop Sign Control: 0 1 0 1 0 Lanes: 0 1 0 1 0 0 0 1! 0 0 0 0 1! 0 0 1 681 5 16 497 21 12 1 7 4 1 14 1222 Major Street Volume:

20

Kittelson & Associates, Inc. - Project # 6743 Milton-Freewater STA and TSP Update, Milton-Freewater, OR 2004 Existig Traffic Condition, Weeday AM Peak Hour

Peak Hour Delay Signal Warrant Report Intersection #5 Main Street-OR11/ 8th Ave Future Volume Alternative: Peak Hour Warrant NOT -----Approach: North Bound South Bound East Bound West Bound Movement: L - T - R L T R L - T - R L - T - R ------Control Uncontrolled Stop Sign Uncontrolled 0 0 1 0 1 0 2 3 512 17 Lanes: 0 1 0 1 0 0 0 1! Ō 0 0 0 1! Ŏ 0 Final Vol.: 9 682 28 1 13 2 1 14 ApproachDel: XXXXXX 19.7 XXXXXX 13.5 |-----| Approach[eastbound][lanes=1][control=Stop] Signal Warrant Rule #1: [vehicle-hours=0.2] FAIL - Vehicle-hours less than 4 for one lane approach. Signal Warrant Rule #2: [approach volume=42] FAIL - Approach volume less than 100 for one lane approach. Signal Warrant Rule #3: [approach count=4] [total volume=1285] SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=17]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1285]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

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Minor Approach Volume:

Milton-Freewater STA and TSP Update, Milton-Freewater, OR

2004 Existig Traffic Condition, Weeday AM Peak Hour

Peak Hour Delay Signal Warrant Report

South Bound

L - T - R

|-----|

Uncontrolled

0 688 19

0 1 0 1 0

XXXXXX

East Bound

L - T - R

Stop Sign

0 0 1! 0 0

10 1

24.5

Stop Sign

0 0 11 0 0

0 0

XXXXXX

Kittelson & Associates, Inc. - Project # 6743 Milton-Freewater STA and TSP Update, Milton-Freewater, OR 2004 Existig Traffic Condition, Weeday AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban] Intersection #5 Main Street-OR11/ 8th Ave Future Volume Alternative: Peak Hour Warrant NOT Met -----]------South Bound Approach: North Bound East Bound West Bound Movement: L - T - R L . - T - R L - T - R L - T - R

Control: Uncontrolled Uncontrolled 1 0 1 0 0 1 0 1 0 0 0 1! 0 0 9 682 2 3 512 17 28 1 13 Lanes: 0 1 0 1 0 Final Vol.: Major Street Volume:

1226

Minor Approach Volume Threshold: 215

Future Volume Alternative: Peak Hour Warrant NOT Met Approach: Movement:

Stop Sign

Stop Sign 0 0 1! Ŏ 0 2 1 14

Approach [eastbound] [lanes=1] [control=Stop] Signal Warrant Rule #1: [vehicle-hours=D.1]

Final Vol.:

ApproachDel:

Control:

Lanes:

FAIL - Vehicle-hours less than 4 for one lane approach. Signal Warrant Rule #2: [approach volume=14]

Intersection #6 OR 11/7th Ave - Eastbound

North Bound

L - T - R

Uncontrolled

0 1 0 1 0

3 937

XXXXXX

FAIL - Approach volume less than 100 for one lane approach. Signal Warrant Rule #3: [approach count=3] [total volume=1661]

SUCCEED - Total volume greater than or equal to 650 for intersection ; with less than four approaches.

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Final Vol.:

Milton-Freewater STA and TSP Update, Milton-Freewater, OR

2004 Existig Traffic Condition, Weeday AM Peak Hour

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Peak Hour Volume Signal Warrant Report [Urban]

Intersection #6 OR 11/7th Ave - Eastbound

Future Volume Alternative: Peak Hour Warrant NOT Met --------||------| Approach: North Bound South Bound East Bound West Bound Movement: L - T - R L - T - R Uncontrolled Uncontrolled. Stop Sign Stop Sign 0 1 0 1 0 0 1 0 1 0 0 0 1! 0 0 Lanes: 0 0 1! 0 0

Major Street Volume: 1646 Minor Approach Volume: Minor Approach Volume Threshold: 113

3 937 0

0 688 19 10 1 3 0 - 0

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Peak Hour Delay Signal Warrant Report Intersection #7 OR 11/7th Avenue - Westbound Approach: North Bound South Bound ' East Bound West Bound Movement: L - T - R L - T - R L - T - R -----Control: Uncontrolled Uncontrolled Stop Sign 0 1 0 1 0 Lanes: 0 1 0 1 0 0 0 0 0 0 0 0 1! 0 0 Final Vol.: 0 937 10 688 0 0 3 0 23 ApproachDel: XXXXXX XXXXXX XXXXXX 14.0 Approach [westbound] [tenes=1] [control=Stop] Signal Warrant Rule #1: [vehicle hours=0.1] FAIL - Vehicle-hours less than 4 for one lane approach. Signal Warrant Rule #2: [approach volume=26] FAIL - Approach volume less than 100 for one lane approach. Signal Warrant Rule #3: [approach count=3] [total volume=1662] SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Minor Approach Volume Threshold: 115

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15.1

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Peak Hour Volume Signal Warrant Report [Urban] Intersection #7 OR 41/7th Avenue - Westbound Future Volume Alternative: Peak Hour Warrant NOT Met North Bound Approach: South Bound East Bound West Bound Movement: L T R L T - R L - T - RL - T - R Uncontrolled Uncontrolled Stop Sign Stop Sign 0 1 0 1 0 0 1 0 1 0 0 0 1! 0 0 Lanes: 0 0 0 0 0 937 1 10 688 0 Final Vol.: 0 0 0 3 0 23 Major Street Volume: 1636 Minor Approach Volume:

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Peak Hour Delay Signal Warrant Report Intersection #8 OR 11/ 4th Avenue 方方向向向方式在方式之中向方向大大大方向向向方方式大方式的英数数数据成为方式的**有效的数据数据的支援的**基础的后述更**的方式更多的复数形式的**的复数形式 Future Volume Alternative: Peak Hour Warrant NOT Met Approach: North Bound South Bound East Bound Movement: L - T - R L - T - R L - T - R Uncontrolled Uncontrolled Control: Stop Sign . Stop Sign 0 1 0 1 0 0 0 1 0 0 0 1 0 1 0 Lanes: 0 0 1! 0 0 4 849 6 628 1

XXXXXX ·

6 1

26.2

Approach[eastbound] [lanes=1] [control=Stop] Signal Warrant Rule #1: [vehicle-hours=0.1]

FAIL - Vehicle-hours less than 4 for one lane approach. Signal Warrant Rule #2: [approach volume=9]

FAIL - Approach volume less than 100 for one lane approach. Signal Warrant Rule #3: [approach count=4] [total volume=1514]

SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop] Signal Warrant Rule #1: [vehicle-hours=0.1]

XXXXXX

Final Vol.:

ApproachDel:

FAIL - Vehicle-hours less than 4 for one lane approach.

Signal Warrant Rule #2: [approach volume=15]

FAIL - Approach volume less than 100 for one lane approach. Signal Warrant Rule #3: [approach count=4] [total volume=1514]

SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Major Street Volume:

Minor Approach Volume:

Minor Approach Volume Threshold: 147

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Peak Hour Volume Signal Warrant Report [Urban] Intersection #8 OR 11/ 4th Avenue ************************************* Future Volume Alternative: Peak Hour Warrant NOT Met ------Approach: North Bound South Bound East Bound West Bound Movement: L-T-R L - T - R L - T - R Uncontrolled Uncontrolled Stop Sign Stop Sign 0 1 0 1 0 0 1 0 1 0 Lanes: 0 0 1! 0 0 0 0 1! 0 0 4 849 1 6 628 1 Final Vol.: 6 1 1 1 1 13

1490

15

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2004 Existig Traffic Condition, Weeday AM Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 OR 11/ 14th Ave Average Delay (sec/veh): North Bound Approach: South Bound Movement: L - T - R L - T - R L - T - R L - T - R Control: Uncontrolled Uncontrolled Stop Sign Stop Sign Rights: Include Include Include Channel 0 0 0 1 0 0 1 1 0 0 0 0 0 0 0 Lanes: Volume Module: >> Count Date: 1 Dec 2004 << 0 323 13 108 259 108 306 Initial Bse: 0 381 13 O 0 Ω 12 Ω 1.00 1.00 User Adi: PHF Adi: PHF Volume: 0 544 19 154 437 0 0 0 17 217 O Reduct Vol: n n n U n 0 0 n n 0 0 544 19 154 437 Final Vol.: 0 0 O 17 0 217 Ω Critical Gap Module: Critical Gr:xxxxx xxxxx xxxxx 4.1 xxxx xxxxx xxxxx xxxxx xxxxx 6.4 xxxx 6.2 FollowUpTim:xxxxx xxxxx xxxxx 2.2 xxxx xxxxx xxxxx xxxxx xxxx 3.5 xxxx 3.3 Capacity Module: 532 Volume/Cap: xxxx xxxx xxxx 0.15 xxxx xxxx xxxx xxxx 0.08 xxxx 0.41 Level Of Service Module: Stopped Del:xxxxx xxxx xxxxx 9.2 xxxx xxxxx xxxxx xxxx xxxx xxxx 23.6 xxxx 16.3 LOS by Move: * * * C * Г LT - LTR - RT LT - LTR - RT Movement: LT - LTR - RT LT - LTR - RT SharedQueue:xxxxx xxxx xxxxx Shrd StpDel:xxxxx xxxx xxxxx Shared LOS: ApproachDel: XXXXXX XXXXXX 16.9 XXXXXX ApproachLOS:

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Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| 医克尔斯托尼女女女女女女女 | **** | **** | **** | **** | **** | ***** | *** | **** | **** | **** | **** | |
|---|---|--------------------------------|---|--|--|---------------|-------------------------------------|--|---------------------------|--|----------------------------------|--|
| Intersection | #2 Main 9 | treet-C | R11/ | 12th / | Ave | 大大电流流流 | e e e fe | | 州安全政治 第3 | *** | ***** | |
| Average Delay | | | 1.4 | | | e Leve | L of | Servic | e: | CI | 24.2) | |
| Approach: Movement: | North E | ound - R | | uth Bo | | E | ast B | | | est Bo | ound | |
| Control: Rights: Lanes: | Uncontr Incl 0 1 0 | ude | | iontro Inclu | ude | | top S Incli 0 1! | | | top S Inclu | ude | |
| Volume Module Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol.: | 2: >> Cour 4 450 1.00 1.18 4 531 1.00 1.00 0.80 0.80 5 664 0 0 | 1.00 2 1.00 0.80 3 | 7 Dec 10 1.00 10 1.00 0.80 13 | 2004 358 1.18 422 1.00 0.80 528 0 | 4 << 7 1.00 7 1.00 0.80 9 0 | 36 1.00 | 1.00 2 1.00 0.80 3 0 | 6 1.00 6 1.00 0.80 8 0 | 3 1.00 | 1.00 1.00 1.00 0.80 1 0 | 15 1.00 15 1.00 0.80 | |
| Critical Gap Critical Gp: FollowUpTim: | Module: 4.1 xxxx 2.2 xxxx | | | | xxxxx xxxxx | 7.5 3.5 | 6.5 4.0 | 6.9 3.3 | 7.5 3.5 | 6.5 4.0 | 6.9 3.3 | |
| Capacity Mode Cnflict Vol: Potent Cap.: Move Cap.: Volume/Cap: | ີ537 xxxx | XXXXX | 919 919 | XXXX | XXXXX XXXXX XXXXX XXXX | 234 222 | 1234 175 172 0.01 | 268 730 730 0.01 | 965 209 202 0.02 | 1237 175 171 0.01 | 333 663 663 0.03 | |
| Level Of Serv Queue: Stopped Del: LOS by Move: | 0.0 xxxx 8.5 xxxx A * | XXXXX XXXXX | 9.0 . A | | | | | | XXXXX XXXXX | | XXXXX XXXXXX | |
| Movement: Shared Cap.: SharedQueue: Shrd StpDel: Shared LOS: ApproachDel: | | XXXXX | 0.0 9.0 A | XXXX | XXXXX XXXXX | XXXX XXXXX | 0.9 | XXXXX XXXXX | XXXX | 0.2 | - RT XXXXX XXXXX XXXXX | |
| Shared LOS: | A * | * | | XXXXX | * | * | _ | * | * | | * | |

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Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection | #3 Main Si | reet - | OR 11 | / 10t | h Ave | ***** | | | | | *** |
|--|--|------------------------------|--------------------------------|----------------------------|----------------------------------|--|----------------------------|--|-----------------------------|----------------------------|---|
| Average Delay | | 。 · 大力大和政治的 | 0.4 | Wors | | Leve | of s | ervice | | | 16-4] |
| Approach: Movement: | North Bo L - T | ound | Sou L - | ith Bo T | und - R | E E | st Bo | ound | | st Bo | |
| Control: Rights: Lanes: | Uncontro Inclu 0 1 0 | ide 1 0 | Unc 0 1 | ontro Inclu 0 | lled bide de 10 | ່ S1 ຸ 0 (| op Si Incli | gn sde 00 | | top Si Inclu | ide |
| Initial Bse: User Adj: | 5 495 1.00 1.15 5 569 1.00 1.00 0.88 0.88 6 647 0 0 6 647 | 1 1.00 1 1.00 | 1.00 4 1.00 0.88 5 | 369 1.15 424 1.00 | 8 | 7 1.00 7 1.00 0.88 8 0 | 1.00 | 5 1.00 5 1.00 0.88 6 0 | 1 | 1.00 | 11 1.00 11 1.00 0.88 13 0 |
| Critical Gap Critical Gp: FollowUpTim: | 4.1 xxxx | | | | XXXXX XXXXX | | 6.5 4.0 | 6.9 3.3 | 7.5 3.5 | 6.5 4.0 | 6.9 |
| Capacity Modu Cnflict Vol: Potent Cap.: | 491 xxxx 1068 xxxx 1068 xxxx | XXXXX | 934 934 | XXXX XXXX | xxxxx xxxxx xxxxx xxxxx | 262 254 | 1155 195 193 0.01 | 246 755 755 0.01 | | 1159 194 192 0.01 | 324 672 672 0.02 |
| Level Of Serv Queue: Stopped Del: LOS by Move: | 0.0 xxxx 8.4 xxxx A * | XXXXX * | 8.9 A | XXXX | ××××× | xxxxx | XXXX * | XXXXX * | XXXXX XXXXX | XXXX | XXXXX |
| Movement: Shared Cap.: SharedQueue: Shrd StpDel: Shared LOS: ApproachDel: | 0.0 xxxx 8.4 xxxx A * | XXXXX XXXXX XXXXX * | 0.0 8.9 A | XXXX XXXX XXXX | - RT XXXXX XXXXX XXXXX | XXXX XXXXX | 330 0.1 | | XXXX XXXXX XXXXX * | 0.1 | XXXXX |
| ApproachLOS: | XXXXXX | - | ** | XXXX | | | C | | | β.4 | |

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #4 Main Street - OR 11/ 9th Ave

| taligateman (1993) 199 - 1996 (1) O 1 CCC UR 1/2 VCI AVC | ** |
|--|-----------------|
| Average Delay (xec/veh): 0.6 Worst Case Level Of Service: C[18.2 | ?] *** |
| Approach: North Bound South Bound East Bound West Bound Movement: L - T - R L - T - R L - T - R | ≀ |
| Control: Uncontrolled Uncontrolled Stop Sign Stop Sign Rights: Include Include Include Include Lanes: 0 1 0 1 0 0 0 1 0 0 0 0 1! 0 0 |) |
| Growth Adj: 1.00 1.22 1.00 1.00 1.22 1.00 1.00 1.00 | 13)0 |
| Critical Gap Module: Critical Gp: 4.1 xxxx xxxxx 4.1 xxxx xxxxx 7.5 6.5 6.9 7.5 6.5 6. FollowUpTim: 2.2 xxxx xxxxx 2.2 xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3. | |
| Capacity Module: Cnflict Vol: 518 xxxx xxxxx 687 xxxx xxxxx 884 1230 259 968 1237 34 Potent Cap.: 1044 xxxx xxxxx 903 xxxx xxxxx 240 176 740 208 175 65 Move Cap.: 1044 xxxx xxxxx 903 xxxx xxxxx 230 173 740 202 171 65 Volume/Cap: 0.00 xxxx xxxx 0.02 xxxx xxxx 0.05 0.01 0.01 0.02 0.01 0.02 | 3 . 3 |
| Level Of Service Module: Queue: 0.0 xxxx xxxxx | est CX CX |

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Level Of Service Computation Report 2000 HCM Unsignalized Method (Buse Volume Alternative)

| Average Delay | / (sec/veh): | 0.9 Worst Case | Level Of Service | ci 19.71 |
|---|--|--|---|---|
| Approach: Movement: | North Bound L - T - R | South Bound | East Bound L - T - R | West Bound L T R |
| Control: Rights: Lanes: | Uncontrolled | Uncontrolled | Stop Sign Include 0 0 1! 0 0 | Stop Sign Include 0 0 1! 0 0 |
| Base Vol: Growth Adj: Initial Bse: User Adj: | 8 600 2 1.00 1.00 1.00 0.88 0.88 0.88 9 682 2 0 0 0 | 3 392 15 1.00 1.15 1.00 3 451 15 1.00 1.00 1.00 | 25 1 11 1.00 1.00 1.00 25 1 11 1.00 1.00 1.00 0.88 0.88 0.88 28 1 13 0 0 0 28 1 13 | 2 1 12 1.00 1.00 1.00 2 1 12 1.00 1.00 1.00 0.88 0.88 0.88 2 1 14 0 0 0 2 1 14 |
| | Module: 4.1 xxxx xxxxx 2.2 xxxx xxxxx | 4.1 xxxx xxxxx 2.2 xxxx xxxxx | 7.5 6.5 6.9 3.5 4.0 3.3 | 7.5 6.5 6.9 3.5 4.0 3.3 |
| Potent Cap.: Move Cap.: | 10e: 529 xxxx xxxxx 1034 xxxx xxxxx 1034 xxxx xxxxx 0.01 xxxx xxxx | 684 xxxx xxxxx 905 xxxx xxxxx 905 xxxx xxxxx 0.00 xxxx xxxx | 238 176 734 230 174 734 | 965 1238 342 209 174 654 203 172 654 0.01 0.01 0.02 |
| Level Of Serv Queue: Stopped Del: LOS by Move: Movement: | rice Module: 0.0 xxxx xxxxx 8.5 xxxx xxxx A * * LT - LTR - RT | | XXXXX XXXX XXXXX XXXXX XXXXX XXXXX XXXXX | |
| Shared Cap.: SharedQueue: Shrd StpDel: Shared LOS: ApproachDel: ApproachLOS: | 0.0 xxxx xxxxx 8.5 xxxx xxxxx | XXXX XXXX XXXX 0.0 XXXX XXXX | xxxx 286 xxxxx xxxxx 0.5 xxxxx xxxxx 19.7 xxxxx | xxxx 441 xxxxx xxxxx 0.1 xxxxx |

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Milton-Freewater STA and TSP Update, Milton-Freewater, OR
2004 Existig Traffic Condition, Weeday AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

| intersection | 1 #6 OR 11/7th Av | e - Eastbound | | |
|------------------------|--------------------------|--------------------------|-------------------------|-------------------------|
| Average Deli | ₩ (sec/veh): | 0.2 Horst Case | Level Of Service: | . C. C. 24 51 |
| Approach: Movement: | North Bound L - T - R | South Bound L - T - R | East Bound £ - T - R | West Bound L - T - R |
| Control | t | | | |

| Control: | Uni | contro | | Und | contro | | St | op Si | ign | S1 | top Si | ign ' |
|---------------|------|--------|------|------|--------|------|------|-------|---------|------|--------|-------|
| Rights: | | Incli | ude | | Incli | Jde | | Incli | .de | | Incli | ude |
| Lanes: | 0 ' | 10 | 1 0 | 0 ' | 10 | 1 0 | 0 0 |) 1 į | 0 0 | 0 (| 1! | 0 0 |
| | | | } | | | |] | | | 1 | | |
| Volume Module | : | | . ' | • | | , | 1 | | , | ì | | . 1 |
| Base Vol: | 2 | 556 | . 0 | 0 | 408 | 13 | . 7 | 1 | . 2 | Ω | n | n |
| Growth Adj: | 1.00 | 1.18 | 1.00 | 1,00 | 1.18 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 2 | 656 | . 0 | 0 | 481 | 13 | 7 | 1 | 2 | . 0 | Ö | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1,00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 | | 0.70 |
| PHF Volume: | 3 | 937 | 0 | 0 | 688 | 19 | 10 | 1 | 3 | . 0 | Ō | ă |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | . 0 | 0 | · Ó | Ō | Ŏ | ŏ | ŏ |
| Final Vol.: | • 3 | 937 | 0 | 0 | 688 | 19 | 10 | 1 | ž | Ō | Ŏ | ŏ |
| | | | 1 | ı | | | 1 | | | 1 | - | - 1 |

| rostomopi ini: | _ | XXXX | XXXXX | XXXXX | XXXX | XXXXX | , 3.5 | 4.0 | 5.5 | XXXX XXXX | XXXXX |
|----------------|------|------|-------|-------|------|-------|-------|------|-------------|-----------|-------|
| Capacity Modù | le: | | | | | : | • | | • | , | |
| Cnflict Vol: | 706 | XXXX | XXXXX | XXXX | XXXX | XXXXX | 1171 | 1640 | 3 53 | XXXX XXXX | XXXXX |
| Potent Cap.: | 888 | XXXX | XXXXX | XXXX | XXXX | XXXXX | 189 | 101 | 649 | XXXX XXXX | XXXXX |
| Move Cap.: | 888 | XXXX | XXXXX | XXXX | XXXX | XXXXX | 188 | 101 | 649 | XXXX XXXX | XXXXX |
| Volume/Cap: (| 0.00 | XXXX | XXXX | XXXX | XXXX | XXXX | 0.05 | 0.01 | 0.00 | XXXX XXXX | XXXX |
| | | | | l I | | 1 | • | | | ī | |

Control Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxx xxxxx 6.8 6.5

| Level Of Serv | vice Modul | e: | 11 | | , | 1 | | 11 | | |
|---------------|------------|-------|-------|-------|-------|------------|---------|-------|-------|-------|
| Queue: | 0.0 xxx | XXXXX | XXXXX | XXXX | XXXXX | XXXXX. XXX | x xxxxx | xxxxx | xxxx | XXXXX |
| Stopped Del: | 9.1 xxxx | XXXXX | XXXXX | XXXX | XXXXX | XXXXX XXX | X XXXXX | XXXXX | XXXX | XXXXX |
| LOS by Move: | A * | * | * | * | * | * * * | . * | . * | * | * |
| Movement: | LT - LTF | RT : | LT · | - LTR | ~ RT | LT - LT | R - RT | LT · | - LTR | - RT |
| Shared Cap.: | XXXX XXXX | XXXXX | XXXX | XXXX | XXXXX | YYYY 10 | O WYWW | VVVV | n | VVVVV |

| Movement: | | | | | | | | | |
|--------------|----------|---------|--------|------------|---------|-----------|-------|------|-------|
| Shared Cap.: | XXXX XXX | XXXXX X | XXXX X | XXXXX XXXX | XXXX | 199 XXXXX | XXXX | 0 | XXXXX |
| SharedQueue: | 0.0 xxx | XXXXX X | 0.0 x | XXXXX XXXX | XXXXX | 0.2 xxxxx | XXXXX | XXXX | XXXXX |
| Shrd StpDel: | 9.1 xxx | XXXXX X | 9.0 x | XXXX XXXX | xxxxx 2 | 4.5 xxxxx | XXXXX | XXXX | XXXXX |
| Shared LOS: | A * | | Α | * * | * | C * | * | * | * |
| ApproachDel: | XXXXX | Χ | XXX | XXX | - 2 | 4.5 | XX | XXXX | |
| ApproachLOS: | ri e | , | | * | _ | C | | * | |

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Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection #7 OR 11/7th Ave | 性似语:《 Westbound 《万克克尔克克克克·木木木木木木木木木木木木木木木木木木木木木木木木木木木木木木木 |
|---|--|
| Average Delay (sec/veh): ************************************ | 0.3 Worst Case Level Of Service: BE 14.00 |
| Approach: North Bound Movement: L - T - R | South Bound East Bound West Bound L - T - R L - T - R |
| Control: Uncontrolled Rights: Include Lanes: 0 1 0 1 0 | Uncontrolled Stop Sign Stop Sign Include Include 0 1 0 1 0 0 0 0 0 0 0 0 1! 0 0 |
| Initial Bse: 0 656 1 User Adj: 1.00 1.00 1.00 | 1.00 1.18 1.00 1.00 1.00 1.00 1.00 1.00 |
| Critical Gap Module: Critical Gp:xxxxx xxxx xxxxx FollowUpTim:xxxxx xxxx xxxxx | |
| Capacity Module: Cnflict Vol: xxxx xxxx xxxxx Potent Cap.: xxxx xxxx xxxxx Move Cap.: xxxx xxxx xxxxx Volume/Cap: xxxx xxxx xxxx | 939 xxxx xxxxx xxxx xxxx xxxx 1302 xxxx 469 726 xxxx xxxxx xxxx xxxx xxxx 155 xxxx 546 726 xxxx xxxx xxxx xxxx xxxx 153 xxxx 546 |
| Level Of Service Module: Queue: XXXXX XXXX XXXX Stopped Del:XXXXX XXXX XXXX LOS by Move: * * * | |
| Movement: LT - LTR - RT Shared Cap:: xxxx xxxx xxxxx SharedQueue: 0.0 xxxx xxxxx Shrd StpDel: 9.0 xxxx xxxxx Shared LOS: A * * ApproachDel: xxxxxx ApproachLOS: * | 0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 0.2 xxxxx |

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection 28 OP 117 4th Avenue

| Intersection # | Intersection 28 OR 11/ 4th Avenue | | | | | | | | |
|---|--|---|--|---|--|--|--|--|--|
| Average Delay | (sec/yeh): | | Level Of Service | - Parachaga Menda | | | | | |
| Approach: Movement: | North Bound L - T - R | South Bound L T R | East Bound L - T - R | West Bound L - T - R | | | | | |
| Control: Rights: Lanes: | Uncontrolled Include 0 1 0 1 0 | Uncontrolled Include 0 1 0 1 0 | Stop Sign Include 0 0 1! 0 0 | Stop Sign Include 0 0 1! 0 0 | | | | | |
| Initial Bse: User Adj: 1 | 3 576 1 .00 1.15 1.00 3 662 1 .00 1.00 1.00 .78 0.78 0.78 4 849 1 0 0 0 4 849 1 | 5 426 1 1.00 1.15 1.00 5 490 1 1.00 1.00 1.00 0.78 0.78 0.78 6 628 1 0 0 0 6 628 1 | 5 1 1 1.00 1.00 1.00 1.00 1.00 1.00 0.78 0.78 0.78 6 1 1 0 0 0 6 1 1 | 1 1 10 1.00 1.00 1.00 1.00 1.00 1.00 0.78 0.78 0.78 1 1 13 0 0 0 1 1 13 | | | | | |
| | | 4.1 xxxx xxxxx 2.2 xxxx xxxxx | 7.5 6.5 6.9 3.5 4.0 3.3 | 7.5 6.5 6.9 3.5 4.0 3.3 | | | | | |
| Potent Cap.: Move Cap.: | e: 629 xxxx xxxxx 949 xxxx xxxxx 949 xxxx xxxx | 851 xxxx xxxxx 784 xxxx xxxxx 784 xxxx xxxxx 0.01 xxxx xxxx | 1074 1500 315 177 123 687 170 122 687 0.04 0.01 0.00 | 1185 1500 425 147 123 583 144 122 583 0.01 0.01 0.02 | | | | | |
| Stopped Del: LOS by Move: Movement: Shared Cap.: x SharedQueue: | 0.0 xxxx xxxxx 8.8 xxxx xxxxx A * * LT - LTR - RT xxx xxxx xxxxx 0.0 xxxx xxxxx 8.8 xxxx xxxxx | 9.6 xxxx xxxxx A * * LT - LTR - RT xxxx xxxx xxxxx 0.0 xxxx xxxxx | xxxxx 26.2 xxxxx | LT - LTR - RT xxxx xxxx xxxxx LT - LTR - RT xxxx - 371 xxxxx xxxxx 0.1 xxxxx | | | | | |

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Thu Jun 2, 2005 14:39:12

Level Of Service Computation Report 2000 HCM Operations Method (Base Volume Alternative)

Intersection #9 Main Street/UR11/ 2nd Ave **有表示的表示表示表示的表示表示更重要的重要的主义。** 0.239 Cycle (sec): Critical Vol./Cap. (X): Loss Time (sec): 4 sec) Average Delay (sec/veh): 20.4 29 Optimal Cycle: Level Of Service: ******** Approach: North Bound South Bound East Bound Movement: L - T - R L - T - R L - T - R L - T - R Split Phase Control: Permitted Permitted Split Phase Rights: Inctude Include Include Ignore Min. Green: 0 0 0 0 0 0 0 0 1 1 0 0 0 1! 0 0 Lanes: 0 1 1 0 1 1 0 1! 0 0 Volume Module: >> Count Date: 30 Nov 2004 << Base Vol: 14 170 40,7 0 159 Growth Adi: 1.00 1.22 1.22 1.00 1.22 1.22 1.00 Initial Bse: 14 207 497 0 194 **3**20 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 User Adi: PHF Adj: 0.90 0.90 0.00 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 355 PHF Volume: 16 230 0 0 216 12 Reduct Vol: 0 0 16 230 355 Reduced Vol: 0 0 216 1.00 1.00 0.00 1.00 1:00 1.00 1.00 1.00 1.00 1.00 1.00 PCE Adja 1.00 1.00 1.00 0.00 1.00 1.00 1,00 1.00 1.00 1.00 1.00 1.00 MLF Adī: 16 230 0 216 12 355 21 8 0 Final Vol.: Saturation Flow Module: Sat/Lane: 1800 1800 1800 1800 1800 1800 Adjustment: 0.87 0.87 1.00 1.00 0.93 0.93 0.88 1.00 0.88 0.94 0.94 0.94 0.13 1.87 1.00 0.00 1.99 0.01 0.39 0.00 0.61 1.89 0.10 0.01 Lánes: 0 3331 17 0 971 3182 178 Final Sat.: 198 2926 1800 618 _____ Capacity Analysis Module: 0.08 0.08 0.00 0.00 0.06 0.06 Vol/Sat: 0.01 0.00 0.01 0.11 0.12 0.12 Crit Moves: 0.50 0.50 0.50 Green/Cycle: 0.33 0.33 0.00 0.05 0.00 0.00 0.20 0.24 0.00 0.24 0.22 0.24 0.24 0.00 0.20 Volume/Cap: 0.24 0.24 0.0 24.1 46.9 0.0 14.3 14.4 0.0 46.9 14.4 Delay/Veh: 24.5 24.5 24.1 User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 46.9 0.0 AdjDel/Veh: 24.5 24.5 0.0 0.0 24.1 24.1 46.9 14.3 14.4 14.4 HCM2kAvg:

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2004 Existing Traffic Conditions, Weekday PM Peak Hour

Impact Analysis Report

Level Of Service

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Scenario Report

Scenario:

Command: Volume:

Routes:

Geometry: Impact Fee;

Trip Generation: In Distribution: Paths:

Configuration:

ΕX

Default Impact Fee Default Trip Generation Default Trip Distribution Default Paths

Default Routes Default Configuration

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Intersection Future Change Del/ ٧/ Del/ ī'n LOS Veh C LOS Veh # 1 OR 11/ 14th Ave C 16.3 0.000 C 16.3 0.000 + 0.000 D/V # 2 Main Street-OR11/ 12th Ave D 31.6 0.000 D 31.6 0.000 + 0.000 D/V # 3 Main Street - OR 11/ 10th Ave D 33.1 0.000 D 33.1 0.000 \pm 0.000 D/V 4 Main Street - OR 11/9th Ave C 24.6 0.000 C 24.6 0.000 + 0.000 D/V # 5 Main Street-OR11/8th Ave E 42.0 0.000 E 42.0 0.000 + 0.000 D/V # 6 OR 11/7th Ave - Eastbound D. 34.6 0.000 D 34.6 0.000 + 0.000 D/V # 7 OR 11/7th Avenue - Westbound B 12.4 0.000 B 12.4 0.000 + 0.000 D/V 8 OR 11/ 4th Avenue D 34.8 0.000 D 34.8 D.DOO: + 0.000 D/V # 9 Main Street/OR11/ 2nd Ave 8 19.6 0.345 B 19.6 0.345 + 0.000 D/V

Level Of Service Computation Report 2000 RCM Unsignalized Method (Base Volume Alternative)

| 在公司主义的在中国主义的主义的主义的主义的主义的主义的主义的主义的主义的主义的主义的主义的主义的主 | **** | ***** | **** |
|---|------------------------------|------------------|--------------------------------|
| Intersection:#1 OR 11/ 14th Av | /e | | |
| Average Delay (sec/veh): | | Level Of Service | |
| Approach: North Bound | South Bound | East Bound | West Bound |
| Movement: L - T - R | L - T ≃ R | L - T - R | , L - T - R , |
| Control: Uncontrolled | Uncontrolled | Stop Sign | Stop Sign |
| Rights: Include | Include | Include | Channel |
| Lanes: 0 0 0 1 0 | 0 1 1 0 0 | 0 0 0 0 0 | 10001 |
| N. I. Market | 4.0 | | |
| Volume Madule: >> Count Date: Base Vol: 0 333 6 | 1 Dec 2004 << 0 145 339 D | 0 0 0 | 8 0 134 |
| Growth Adi: 1.00 1.18 1.00 | 1.00 1.18 1.00 | 1.00 1.00 1.00 | 1.00 1.00 1.00 |
| Initial Bse: 0 393 6 | 145 400 0 | 0 0 0 | 8 0 134 |
| User Adj: 1.00 1.00 1.00 | 1.00 1.00 1.00 | 1.00 1.00 1.00 | 1.00 1.00 1.00 |
| PHF Adj: 0.71 0.71 0.71 | 0.71 0.71 0.71 | 0.71 0.71 0.71 | 0.71 0.71 0.71 |
| PHF Volume: 0 553 8 Reduct Vol: 0 0 0 | 204 563 0 | 0 0 0 | 11 0 189 0 0 0 |
| Final Vol.: 0 553 8 | 204 563 0 | ŏŏŏŏ | 11 0 189 |
| | | | |
| Critical Gap Module: | / 1 2222 2222 | XXXXX XXXX XXXXX | 6.4 xxxx 6.2 |
| Critical Gp:xxxxx xxxx xxxxx FollowUpTim:xxxxx xxxx xxxxx: | | XXXXX XXXX XXXXX | 6.4 xxxx 6.2 3.5 xxxx 3.3 |
| | | | |
| Capacity Module: | | • | |
| Conflict Vol: xxxx xxxx xxxxx | 562 XXXX XXXXX | | 1248 xxxx 558 191 xxxx 529 |
| Potent Cap.: xxxx xxxx xxxxx Move Cap.: xxxx xxxx xxxxx | 1009 XXXX XXXXX | | 158 xxxx 529 |
| Volume/Cap: xxxx xxxx xxxx | 0.20 xxxx xxxx | XXXX XXXX XXXX | 0.07 xxxx 0.36 |
| | | | |
| Level Of Service Module: | | • | |
| Queue: XXXXX XXXX XXXXX Stopped Del:XXXXX XXXX XXXXX | | XXXXX XXXX XXXXX | 0.2 xxxx 1.6 29.6 xxxx 15.5 |
| LOS by Move: * * * | 3.3 AAAA AAAAA | ***** | D. * C |
| Movement: LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT |
| Shared Cap.: xxxx xxxx xxxxx | XXXX XXXX XXXXX | XXXX XXXX XXXX | XXXX XXXX XXXXX |
| SharedQueue:xxxxx xxxx xxxxx | | XXXXX XXXX XXXXX | |
| Shrd StpDel:xxxxx xxxx xxxxx Shared LOS: * * * | 9.5 XXXX XXXXX A * * | XXXXX XXXXX | * * * * * |
| ApproachDel: xxxxxx | xxxxxx : | xxxxxx | 16.3 |
| ApproachLOS: * | # | * | C |

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection | #2 Mai | n Sti | reet-Oi | R11/ 1 | 2th A | Vei ★ Na Aga | · | CENTER'S | *** | ***** | (本政方法) | ****** |
|---|---|--------------------------|---|---|----------------------------|---|------------|--------------------------------|---|---|----------------------------|---|
| Average Delay | / (sec/ | veh) | : ***** | 1.1 | Wars | t Case | Leve | Of S | ervice | ******* | DÇ | 31.6] |
| Approach: Movement: | Nort L - | h Boi | | | th Bo | | | st Bo | | | st Bo | |
| Control: Rights: Lanes: | | ntro nclud | | | onerc Inclu 0 | | | op Si Incli 1! | īge | | op Si Inclu | ide |
| Volume Module Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: | 1 1.00 1 1.00 1 0.86 0 | 466 .18 550 .00 | Date: 1 1.00 1.00 0.86 1 0 | 37 | 482 1.18 569 1.00 | 21 1.00 21 1.00 0.86 24 0 24 | 18 | | 1 1 00 1 1 00 1 1 00 0 86 1 0 | 2 1.00 2 1.00 0.86 2 0 2 | 1.00 | 11 1.00 11 1.00 0.86 13 0 |
| Critical Gap Critical Gp: FollowUpTim: | 4.1 x | XXX | | | | XXXXX | 7.5 3.5 | | 6.9 3.3 | 7.5 3.5 | 6.5 4.0 | 6.9 |
| Capacity Mode Cnflict Vol: Potent Cap.: Move Cap.: Volume/Cap: | le: 686 x 904 x 904 x 0.00 x | XXX | XXXXX XXXXX | 940 940 | XXXX | XXXXX XXXXX XXXXX XXXX | 172 160 | 1402 139 132 0.03 | 343 653 653 0.00 | 178 | 1414 136 130 0.02 | 320 675 675 0.02 |
| Level Of Servaueue: Stopped Del: LOS by Move: Movement: Shared Cap.: SharedQueue: Shrd StpDel: Shared LOS: ApproachDel: ApproachLOS: | 0.0 x 9.0 x A LT ~ xxxx x 0.0 x 9.0 x | LTR | XXXXX XXXXX + - RT XXXXX XXXXX | 9.0 A LT - xxxx 0.1 9.0 A | LTR XXXX XXXX | XXXXX - RT XXXXX XXXXX | LT XXXX | XXXX + LTR 161 D.5 | XXXXX XXXXX - RT XXXXX XXXXX XXXXX | XXXXX LT XXXX XXXXX | LTR 344 0.2 | XXXXX + - RT XXXXX XXXXX |

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 Main Street - OR 11/ 10th Ave

| THE SECTION | | ⇒ UR 11/ 1Uth Ave | | **** |
|---|---|---|---|---|
| Average Dela | y (sec/veh): ********* | 1.1 Worst Cas | e Level Of Service | |
| Approach: Movement: | North Bound L - T - R | South Bound L - T - R | East Bound L - T - R | West Bound L T R |
| Control: Rights: Lanes: | Uncontrolled Include 0 1 0 1 0 | Uncontrolled Include 0 1 0 1 0 | Stop Sign Include 0 0 1! 0 0 | Stop Sign Include 0 0 1! 0 0 |
| Volume Modul Base Vol: Growth Adj: Initial Bse: User Adj: PKF Adj: PKF Volume: Reduct Vol: Final Vol.: | e: >> Count Date 5 488 2 1.00 1.15 1.00 5 561 2 1.00 1.00 1.00 0.80 0.80 0.80 6 701 3 0 0 0 6 701 3 | 7 531 17 1.00 1.15 1.00 7 611 17 1.00 1.00 1.00 0.80 0.80 0.80 9 763 21 0 0 0 9 763 21 | 19 2 4 1.00 1.00 1.00 19 2 4 1.00 1.00 1.00 0.80 0.80 0.80 24 3 5 0 0 0 0 24 3 5 | 5 2 17 1.00 1.00 1.00 5 2 17 1.00 1.00 1.00 0.80 0.80 0.80 6 3 21 0 0 0 6 3 21 |
| Critical Gap Critical Gp: Followuplim: | 4.1 xxxx xxxxx | 4.1 xxxx xxxxx 2.2 xxxx xxxxx | | 7.5 6.5 6.9 3.5 4.0 3.3 |
| Capacity Mode Cnflict Vol: Potent Cap.: Move Cap.: Volume/Cap: | | | 1156 1508 392 152 120 607 142 118 607 0.17 0.02 0.01 | 1116 1517 352 162 118 644 156 116 644 0.04 0.02 0.03 |
| Level Of Ser- Queue: Stopped Del: LOS by Move: Movement: Shared Cap.: SharedQueue: Shrd StpDel: Shared LOS: ApproachDel: ApproachLOS: | 0.0 xxxx xxxxx 9.4 xxxx xxxxx A * * LT - LTR - RT xxxx xxxx xxxxx 0.0 xxxx xxxxx | 9.1 XXXX XXXXX A * * LT - LTR - RT XXXX XXXX XXXXX 0.0 XXXX XXXXX | XXXXX XXXX XXXXX XXXXX XXXX XXXX LT - LTR - RT XXXX 159 XXXXX XXXXX 0.7 XXXXX XXXXX 33.1 XXXXX 33.1 | XXXXX XXXX XXXXX LT - LTR - RT XXXX 317 XXXXX XXXXX 0.3 XXXXX |

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tevel Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #4 Main Street - OR 11/ 9th Ave

| Average Dela | y (sec/veh): | 0.8 Worst Case | Level Of Service | C[24.6] |
|--|---|---|--|---|
| Approach: Movement: | North Bound L - T - R | South Bound L - T - R | East Bound | West Bound |
| Control: Rights: Lanes: | Uncontrolled Include 0 1 0 1 0 | Uncontrolled Include 0 1 0 1 0 | Stop Sign Include 0 0 1! 0 0 | Stop Sign Include 0 0 1! 0 0 |
| Volume Module Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol.: | e: >> Count Date: 1 522 2 1.00 1.15 1.00 1 600 2 1.00 1.00 1.00 0.89 0.89 0.89 1 674 2 0 0 0 1 674 2 | 22 Nov 2004 << 31 542 14 1.00 1.15 1.00 31 623 14 1.00 1.00 1.00 0.89 0.89 0.89 35 700 16 0 0 0 35 700 16 | 9 1 5 1.00 1.00 1.00 9 1 5 1.00 1.00 1.00 0.89 0.89 0.89 10 1 6 0 0 0 10 1 6 | 8 1 11 1.00 1.00 1.00 8 1 11 1.00 1.00 1.00 0.89 0.89 0.89 9 1 12 0 0 0 9 1 12 |
| Critical Gap Critical Gp: FollowUpTim: | 4.1 xxxx xxxxx | 4.1 xxxx xxxxx 2.2 xxxx xxxxx | 7.5 6.5 6.9 3.5 4.0 3.3 | 7.5 6.5 6.9 3.5 4.0 3.3 |
| Capacity Modu Cnflict Vol: Potent Cap.: Move Cap.: Volume/Cap: | | 677 xxxx xxxxx 911 xxxx xxxxx 911 xxxx xxxx | 1118 1457 358 162 129 638 153 123 638 0.07 0.01 0.01 | 1098 1464 338 167 127 657 160 122 657 0.06 0.01 0.02 |
| Level Of Serv Queue: Stopped Del: LOS by Move: Movement: Shared Cap.: Shared Queue: Shrd StpDel: Shared LOS: ApproachDel: ApproachLOS: | 0.0 xxxx xxxxx 9.1 xxxx xxxxx A * * LT - LTR - RT xxxx xxxx xxxxx | 9.1 xxxx xxxxx A * * LT - LTR - RT xxxx xxxx xxxxx 0.1 xxxx xxxxx | XXXXX XXXX XXXXX XXXXX XXXX XXXXX LT - LTR - RT XXXX 200 XXXXX XXXXX 0.3 XXXXX XXXXX 24.6 XXXXX C 24.6 | XXXXX XXXX XXXXX |

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Main Street-OR11/ 8th Ave

| 在本本企业的专项方式有关区域中国企业企业的企业的企业。 | HARRAFIEREN AVE | ****** | ***** |
|--|---|---|---|
| Average Delay (sec/veh): | 1.3 Worst Cas | Level Of Service | E[42_0] |
| Approach: North Bound Movement: L - T - R | South Bound L T R | East Bound L - T - R | West Bound L - T - R |
| Control: Uncontrolled Rights: Include Lanes: 0 1 0 1 0 | Uncontrolled Include 0 1 0 1 0 | Stop Sign Include 0 0 1! 0 0 | Stop Sign Include 0 0 1! 0 0 |
| Volume Module: >> Count Date Base Vol: 6 527 9 Growth Adj: 1.00 1.15 1.00 Initial Bse: 6 606 9 User Adj: 1.00 1.00 1.00 PHF Adj: 0.81 0.81 0.81 PHF Volume: 7 748 11 Reduct Vol: 0 0 0 Final Vol: 7 748 11 | 13 578 43 1.00 1.15 1.00 13 665 43 | 24 3 6 1.00 1.00 1.00 24 3 6 1.00 1.00 1.00 0.81 0.81 0.81 30 4 7 0 0 0 0 30 4 7 | 3 1 1 1.00 1.00 1.00 3 1 1 1.00 1.00 1.00 0.81 0.81 0.81 4 1 1 0 0 0 4 1 1 |
| Critical Gap Module: Critical Gp: 4.1 xxxx xxxxx FollowUpTim: 2.2 xxxx xxxxx | | | 7.5 6.5 6.9 3.5 4.0 3.3 |
| Capacity Module: Cnflict Vol: 874 xxxx xxxxx Potent Cap.: 768 xxxx xxxxx Move Cap.: 768 xxxx xxxx Volume/Cap: 0.01 xxxx xxxx | 848 xxxx xxxxx 848 xxxx xxxxx | 125 97 568 | 1213 1674 380 138 95 618 129 92 618 0.03 0.01 0.00 |
| Level Of Service Module: Queue: 0.0 xxxx xxxxx Stopped Del: 9.7 xxxx xxxxx LOS by Move: A * * Movement: LT - LTR - RT Shared Cap:: xxxx xxxx xxxxx SharedQueue: 0.0 xxxx xxxxx Shrd StpDel: 9.7 xxxx xxxxx | 9.3 xxxx xxxxx A * * LT - LTR - RT xxxx xxxx xxxxx 0.1 xxxx xxxxx | | xxxxx xxxxx xxxxx LT - LTR - RT xxxx 140 xxxxx xxxx 0.1 xxxxx |
| Shared LOS: A * * ApproachDel: xxxxxx ApproachLOS: * | A * * ******* | * E * 42.0 E | * D .* 32.0 |

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Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #6 OR 11/7th Ave Eastbound

| Intersection | #O UK II//IN AV | B - EBSTDOUNG | *********** | ****** |
|---|--|---|--|--|
| Average Delay | / (sec/veh): | 0.9 Worst Cas | se Level Of Servic | e: D[.34.6] |
| Approach: Movement: | North Bound L - T - R | South Bound L - T - R | East Bound L T R | West Bound L T - R |
| Control: Rights: Lanes: | Uncontrolled Include 0 1 0 1 0 | Uncontrolled Include 0 1 0 1 0 | Stop Sign Include 0 0 1! 0 0 | Stop Sign Include 0 0 1! 0 0 |
| Volume Modula Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol.: | 6 544 0 | 0 631 20 1.00 1.18 1.00 0 745 20 1.00 1.00 1.00 0.86 0.86 0.86 0 866 23 0 0 0 | 0 1.00 1.00 1.00 0 31 3 3 0 1.00 1.00 1.00 6 0.86 0.86 5 36 3 3 0 0 0 0 | |
| Critical Gap Critical Gp: FollowUpTim: | 4.1 xxxx xxxxx | XXXXX XXXX XXXX XXXXX XXXX XXXX | | XXXXX XXXX XXXXX XXXXX XXXX XXXXX |
| Capacity Mode Cnflict Vol: Potent Cap: Move Cap: Volume/Cap: | 889 xxxx xxxxx 758 xxxx xxxxx 758 xxxx xxxxx | XXXX XXXX XXXX | 164 102 567 163 101 567 | XXXX XXXX XXXX XXXX XXXX XXXX |
| SharedQueue: Shrd StpDel: Shared LOS: ApproachDel: | 0,0 xxxx xxxxx | XXXXX XXXX XXXXX ** | x xxxxx 1.0 xxxxx x xxxxx 34.6 xxxxx * D * 34.6 | LT - LTR - RT xxxx 0 xxxxx xxxxx xxxxx |
| ApproachLOS: | | - | . D | . 7 |

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection | #7 OR 11/7th A | venue - Westbourn | ************************************* | ****** |
|--|---|--|--|---|
| Average Deley | (sec/veh): | 0.2 Worst Ca | se Level Of Service | e± B(12.41 |
| Approach: Movement: | North Bound L - T - R | South Bound | East Bound | West Bound L T - R |
| Control: Rights: Lanes: | Uncontrolled Include 0 1 0 1 0 | Uncontrolled Include 0 1 0 1 0 | Include | Stop Sign Include 0 0 1! 0 0 |
| Volume Module Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol: | 0 544 2 1.00 1.18 1.00 0 642 1.00 1.00 1.00 0.86 0.86 0.86 0 746 2 | 0 1.00 1.18 1.0 2 17 745 0 1.00 1.00 1.0 0 0.86 0.86 0.8 2 20 866 0 0 0 | | 1 0 9 1:00 1:00 1:00 0.86 0.86 0.86 1 0 10 0 0 0 |
| Critical Gap Critical Gp:x | | 4.1 xxxx xxxx 2.2 xxxx xxxx | x xxxxx xxxx xxxx x xxxxx xxxx xxxx | 6.8 xxxx 6.9 3.5 xxxx 3.3 |
| Potent Cap.: Move Cap.: | ile: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx | 749 xxxx xxxx 856 xxxx xxxx 856 xxxx xxxx | X XXXX XXXX XXXXX X XXXX XXXX XXXX X XXXX XXXX XXXXX | 1220 xxxx 374 175 xxxx 629 172 xxxx 629 0.01 xxxx 0.02 |
| Stopped Del:x LOS by Move: Movement: | XXXX XXXX XXXX XXXX XXXX XXXXX * | 9.3 XXXX XXXX A * * LT - LTR - RT XXXX XXXX XXXX 0.1 XXXX XXXX | X XXXXX XXXX XXXXX X XXXXX XXXX XXXXX * * * * | XXXXX XXXX XXXXX |

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Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| | Intersection | #8 OR | 11/ | 4th Av | enue | ***** | ***** | - | | | ***** | | *** |
|---|---|---|--|--|---|---|---|-------------------------------------|--|--|--------------------|--|---|
| Ì | Average Delay | y (sec | /veh |): ****** | 0.4 | Wor | st Cas | 4 | werd the same hands | | |] D | 34.81 |
| | Approach: Movement; | | th Bo | ound - R | | uth B | ound - R | , L | | - R | | est Bo | |
| | Control: Rights: Lanes: | | Inclu | olled ude 1 0 | | Incl | olled ude 1 0 | S | top S Incli | ign | | top S Incli 0 1! | ude |
| | Volume Module Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol.: | 1.00 4 1.00 0.87 5 0 | 1.15 664 1.00 0.87 763 | 1.00 3 1.00 0.87 3 0 | 8 1,00 | 667 1.15 767 1.00 0.87 882 0 882 | 1.00 4 1.00 0.87 5 0 | 1.00 | 1.00 1.00 1.00 0.87 1 0 | 1 1.00 1 1.00 0.87 1 0 | 1.00 | 1.00 1.00 1.00 0.87 1 0 | 17 1.00 17 1.00 0.87 20 0 |
| | Critical Gap Critical Gp: FollowUpTim: | 4.1 | XXXX | xxxxx xxxxx | | | XXXXX XXXXX | | | 6.9 3.3 | 7.5 3.5 | 6.5 4.0 | 6.9 3.3 |
| | Capacity Modu Cnflict Vol: Potent Cap.: Move Cap.: Volume/Cap: | 886 760 760 | XXXX [.] | XXXXX XXXXX XXXXX | 843 843 | XXXX XXXX | XXXXX XXXXX XXXXX XXXX | 122 116 | 1678 96 94 0.01 | 443 568 568 0.00 | 135 132 | 1678 96 94 0.01 | 383 621 621 0.03 |
| | Level Of Serv Queue: Stopped Del: LOS by Move: Movement: Shared Cap.: SharedQueue: Shrd StpDel: Shared LOS: ApproachDel: | 0.0 9.8 A LT - xxxx 0.0 9.8 | XXXX XXXX * LTR XXXX XXXX | XXXXX XXXXX - RT XXXXX XXXXX XXXXX * | 9.3 A LT - XXXX 0.0 9.3 A | XXXX + LTR XXXX XXXX | XXXXX XXXXX - RT XXXXX XXXXX XXXXX | XXXXX * LT - XXXX XXXXX | LTR 128 0.2 | XXXXX - RT XXXXX XXXXX | LT XXXX XXXX | ***** - LTR - 417 - 0.2 | - RT xxxxx xxxxx |
| | ApproachLOS: | | * | | | * | | | D | | | 8 | |

Level Of Service Computation Report 2000 HCM Operations Method (Base Volume Alternative)

intersection #7 Main Street/OR11/ 2nd Ave Critical Vol./Cap. (X): 12 (Y+R = 4 sec) Average Delay (sec/veh): 33 level Of Service: Loss Time (sec): 19.6

Optimal Cycle: 33 Level Of Service:

Approach: South Bound East Bound L - T - R L - T - R Movement: L - T - R Permitted Split Phase Permitted Ignore Include Include Include 0 0 0 0 0 0 0 0 0 Min. Green: 0 0 0 1 1 0 1 0 0 1 1 0 0 0 1 0 0 1 0 1 0 0 Lanes: -----||-----|

Volume Module: >> Count Date: '30 Nov 2004 << Base Vol: 7 187 398 0 189 12 User Adi: 1.00 1.00 1.00 PHF Adj: 0.92 PHF Volume: 8 248 0 251 -638 13 Reduct Vol: Reduced Vol: 8 248 251 PCE Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 MLF Adj: Final Vol.: 8 248 0 0 251 13 5 0 10 638 34

Saturation Flow Module: 1800 1800 1800 1800 1800 1800 Adjustment: 0.88 0.88 1.00 1.00 0.92 0.92 0.88 1.00 0.88 0.93 0.93 0.93 0.06 1.94 1.00 0.00 1.90 0.10 0.36 0.00 0.64 1.89 0.09 0.02 Lanes: 94 3073 1800 0 3164 165 565 0 1017 3177 158 Final Sat.: _____

Capacity Analysis Module: Vol/Sat: 0.08 0.08 0.00 0.00 0.08 0.08 0.01 0.00 0.01 0.20 0.21 0.21 Crit Moves: Green/Cycle: 0.23 0.23 0.00 0.00 0.23 0.23 0.03 0.00 Volume/Cap: 0.35 0.35 0.00 0.00 0.34 0.34 0.35 0.00 0.35 0.32 0.35 Delay/Veh: 32.2 32.2 0.0 0.0 32.1 32.1 52.4 0.0 52.4 9.2 9.4 9.4 AdjDel/Veh: 32.2 32.2 0.0 0.0 32.1 32.1 52.4 0.0 52.4 9.2 9.4 9.4 0 0 0

Appendix C

Crash Data

OR 11 (Route 11, Hwy 8) at SW 14th Avenue in Milton-Freewater 1999 - 2003

| | COUNTY CITY URBAN AREA | CLASS COMPNT MLG TYP MILEPNT | CONN # FIRST SECOND | STREET STREET | RD CHAR DIRECT LOCTN | INT-TYP (MEDIAN) LEGS (#LANES) | TRAF- | RNDBT | | CRASH COLL SVRTY | V# | VEHICLE USE-TRLR OWNER TYPE | MOVE FROM TO | P# | PRTC | INJ SVRTY | | LICNS RES | PED PED | ERROR | ACT |
|-------|---|---------------------------------------|---------------------------|------------------|----------------------------|---|-----------|--------|------------|------------------------|----|--------------------------------------|--------------------|----|------|--------------|-------------------|---------------|------------|-------|-----|
| /2001 | UMATILLA MILTON-FREEWATER MILT-FRE UA | | ORE-WA | • | INTER N | CROSS | N NONE | N N | CLR DRY | S-1STOP REAR | 1 | NONE 0 PRVTE | STRGHT N S | | •• | : | | - | | | 000 |
| | WILL-PRE UA | 0 26.88 | SW 1 | 4TH AVE | 06 . | 0 | | N | DAY | PDO | | PSNGR CA | | 1 | DRV | NONE | 35 _, M | OR-Y OR<25 | | 026 | |
| | | | | | | | | | | | Ź | NONE 0 | STOP | | | | | | | | |
| | | | | | | | | | | : . | | PRVTE PSNGR _; CA | n s | 1 | DRV | NONE | 24 M | OR-Y OR<25 | . ; | 000 | 012 |

OR 11 (Route 11, Hwy 8) at SW 12th Avenue in Milton-Freewater 1999-2003

| | COUNTY CITY URBAN AREA | CLASS COMPNT MLG TYP MILEPNT | CONN # FIRST SECOND | | RD CHAR DIRECT LOCTN | | | RNDBT | WTHR SURF | CRASH COLL SVRTY | v# | VEHICLE USE-TRLR OWNER TYPE | MOVE FROM TO | | PRTC TYPE | INJ SVRTY | A S G E LICNS PED E X RES LOC | ERROR | ACT |
|-------|---|---------------------------------------|---------------------------|---------------------------------------|----------------------------|-------|---------------|--------|--------------|------------------------|---------------|--------------------------------------|--------------------|----------------|--------------|--------------|-------------------------------------|-------|-----|
| /2000 | MILTON-FREEWATER | 14 | S MAIN | | INTER SW | CROSS | N STOP SIG | | CLR DRY | S-1STOP REAR | 1 | NONE 0 PRVTE | STRGHT SW NE | | •. | | | 1. | 000 |
| ٧ | MILT-FRE UA | 0 30.01 | SE 12' | OTH AVE | 06 | . 0 | | N | DAY | PDO | | PSNGR CA | | 1 I | DRV | NONE | 50 M OR-Y OR<25 | 014 | |
| | | | | | | | | | • | | 2 | NONE 0 PRVTE | STOP SW NE | | | | 4. | | 012 |
| | | | | | | | | | | | | PSNGR CA | | 1 1 | DRV | NONE | 40 F OR-Y OR<25 | 000 | |
| /2002 | UMATILLA MILTON-FREEWATER MILT-FRE UA | 14 0 0 30.01 | S MAIN | N ST 2TH AVE | INTER CN | CROSS | N NONE | N N | CLR DRY | O-1TURN TURN | 1 | NONE 0 PRVTE | STRGHT SE NW | | | | | | 000 |
| - | MIDI-PRE UN | . 35.01 | SE 12 | TH AVE | 02 | 0 . | ٠. | N | DAY | PDO | | PSNGR CA | | 1 ¹ | DRV | NONE | 39 M OR-Y OR<25 | 000 | |
| | . " | | | | | | ٠ | | | | 2 | NONE 0 | TURN-L NW NE | | | | | | 000 |
| • | : | • | | · · · · · · · · · · · · · · · · · · · | | | • | | | | | PSNGR CA | \$ | 1 I | DRV | NONE | 45 M OR-Y OR<25 | 004 | |
| /2003 | UMATILLA MILTON-FREEWATER MILT-FRE UA | | MAIN ST | | INTER CN | CROSS | N NONE | N N | CLR DRY | O-1TURN TURN | 1 | NONE 0 PRVTE | STRGHT SE NW | | 4 | | · | | 001 |
| | MIDI-FRE OR | 0 30.01 | 12TH / | AVE | 02 | 0 | | N | DAY | INJ | | PSNGR CA | | 1 1 | DRV | INJB | 30 M OTH-Y N-RES | 000 | 000 |
| : | | | | | | : | | | | : | 2 · | NONE 0 PRVTE | TURN-L NW NE | | | | | | 000 |
| | . • | | | | | | | | | | | PSNGR CA | | <u>1</u> I | DRV · | NONE . | 46 M OTH-Y N-RES | 004 | 000 |

OR 11 (Route 11, Hwy 8) at SW 11th Avenue in Milton-Freewater 1999 - 2003

| · | COUNTY CITY URBAN AREA | CLASS COMPNT CONN # MLG TYP FIRST STREET MILEPNT SECOND STREET | DIRECT | | INT-REL (| TEGNS | WTHR SURF LIGHT | CRASH COLL SVRTY | V# | VEHICLE USE-TRLR OWNER TYPE | | M | | INJ SVRTY | | LICNS | PED LOC | ERROR | ACT |
|-------|---|--|-------------------|-------|----------------|-------|-----------------------|------------------------|----|--------------------------------------|------------|---|-----|--------------|------|---------------|------------|-------|------------|
| /2003 | UMATILLA MILTON-FREEWATER MILT-FRE UA | 14 0 S MAIN ST 0 30.07 SE 11TH AVE | INTER CN 04 | 3-LEG | N STOP SIGN | N N | CLR DRY DAY | ANGL-OT TURN PDO | 1 | NONE 0 PRVTE PSNGR CA | STR(| | DRV | NONE . | 87 M | OR-Y OR<25 | | 000 | 001 |
| | | | | | | | | | | NONE 0 PRVTE PSNGR CA | TURI SW | | DRV | NONE | | OR-Y | | 028 | 011 000 |

OR 11 (Route 11, Hwy 8) at SW 10th Avenue in Milton-Freewater 1999 - 2003

| | COUNTY CITY URBAN AREA | CLASS COMPNT MLG TYP MILEPNT | | STREET STREET | RD CHAR DIRECT LOCTN | INT-TYP (MEDIAN) LEGS (#LANES) | TRAF- | RNDBT | SURF | CRASH COLL SVRTY | V# | VEHICLE USE-TRLR OWNER TYPE | MOVE FROM TO | | INJ SVRTY | AS GELICNS P EXRES L | ED OC ERROR | ACT |
|-------|------------------------------|---------------------------------------|--------|------------------|----------------------------|---|-----------|--------|------------|------------------------|----|--------------------------------------|--------------------|-------|--------------|----------------------------|----------------|-----|
| /2002 | MILTON-FREEWATER | 14 0 | s MAIN | ı ST | INTER N | CROSS | N NONE | N N | CLR DRY | S-1STOP REAR | 1 | NONE 0 PRVTE | STRGHT NW SE | | | | | 000 |
| | MILT-FRE UA | 0 30.13 | SE 10 | TH AVE | 06 | 0 | | N | DAY | PDO . | | PSNGR CA | | 1 DRV | NONE | 74 F OR-Y OR>25 | 043 | |
| | | | ٠ | | | | | | | • | 2 | NONE 0 PRVTE | STOP NW SE | | • | | | 011 |
| | | • | | • | î : | | | | | | | PSNGR CA | | 1 DRV | NONE | 54 M OTH-Y N-RES | 000 | |

OR 11 (Route 11, Hwy 8) at SW 7th Avenue in Milton-Freewater 1999 - 2003

| | COUNTY CITY URBAN AREA | CLASS COMPNT MLG TYP MILEPNT | CONN # FIRST ST SECOND ST | TREET TREET | RD CHAR DIRECT LOCTN | INT-TYP (MEDIAN) LEGS (#LANES) | TRAF- | RNDBT | WTHR SURF LIGHT | CRASH COLL SVRTY | V# | VEHICLE USE-TRLR OWNER TYPE | FROM | | INJ SVRTY | AS GELICNS PED EXRES LOC | ERROR | ACT |
|---|------------------------------|---------------------------------------|---------------------------------|----------------|----------------------------|---|---------------|-----------|-----------------------|------------------------|----|--------------------------------------|-----------------|-------|--------------|---------------------------------------|---------|-----|
| • | UMATILLA MILTON-FREEWATER | 14 0 | MAIN ST | | INTER CN | 3-LEG | N STOP SIG | N SN N | CLR WET | ANGL-OT TURN | 1 | NONE 0 PRVTE | TURN-L SW NW | | | · · · · · · · · · · · · · · · · · · · | . ,,,,, | 015 |
| | MILT-FRE UA | 0 30.30 | 7TH AV | VE - | 02 | 0 | | N | DAY | INJ | | PSNGR CA | | 1 DRV | NONE | 61 F OR-Y | 028 | 000 |
| | | | | | | | 200 | | | • | | | | • | . • | OR<25 | | |
| | • | | | | | | ÷ | | | | 2 | NONE 0 | TURN-L | | | | • | |
| | | | | | | | | | , | | | PRVTE | SE SW | | | | | 000 |
| | | | | , | | | | - | | | - | PSNGR CA | , | 1 DRV | INJC | 27 F OR-Y | 000 | 000 |

OR 11 (Route 11, Hwy 8) at SW 5th Avenue in Milton-Freewater 1999 - 2003

| | COUNTY CITY URBAN AREA | CLASS COMPNT MLG TYP MILEPNT | CONN # FIRST STREET SECOND STREET | RD CHAR DIRECT LOCTN | INT-TYP (MEDIAN) LEGS (#LANES) | INT-REL | RNDBT | | CRASH COLL SVRTY | V# | VEHICLE USE-TRLR OWNER TYPE | FROM | PRTC P# TYPE | | ASGELICNS PEDEX RESLOC | ERROR | ACT |
|-------|------------------------------|---------------------------------------|---|----------------------------|---|--------------|-------|------------|------------------------|----|--------------------------------------|-----------------|-----------------|------|------------------------|-------|-----|
| /2001 | UMATILLA MILTON-FREEWATER | , 14 0 | S MAIN ST. | INTER NW | 4 - LEG | . N NONE | | CLR DRY | S-1STOP REAR ; | 1 | NONE 0 PRVTE | STRGHT NW SE | | | | | 000 |
| | MILT-FRE UA | 0 30.50 | | 06 | O | 10112 | | DAY | PDO | | PSNGR CA | M 02 | 1 DRV | NONE | 29 F OR-Y OR<25 | 026 | 000 |
| | | ; | • | | | | | | e. | 2 | NONE 0 | STOP NW SE | | : | | , | 011 |
| | | | | * 4 | ٧ | | | | | | PSNGR CA | | 1 DRV | NONE | 26 M OR-Y OR<25 | 000 | - |
| /2001 | UMATILLA MILTON-FREEWATER | 14 0 | S MAIN'ST | INTER CN | CROSS | N STOP SI | | CLR DRY | ANGL-OT | 1 | NONE 0 PRVTE | STRGHT SE NW | | · | · . | | 000 |
| | MILT-FRE UA | 0 30.50 | SW 5TH AVE | 02 | 0 | - | 44 | DAY | INJ | | PSNGR CA | | 1 DRV | INJA | 22 F OTH-Y N-RES | 000 | |
| | | | | | • | | | | | 2 | NONE 0 PRVTE | STRGHT NE SW | | • | · | | 015 |
| i | | - | | • | | • | • | • | | | PSNGR CA | | 1 DRV. | NONE | 79 M OR-Y OR>25 | 021 | |

OR 11 (Route 11, Hwy 8) at SW 4th Avenue in Milton-Freewater 1999 - 2003

| | COUNTY CITY URBAN AREA | CLASS COMPNT CONN # MLG TYP FIRST STREET MILEPNT SECOND STREET | RD CHAR DIRECT LOCTN | INT-TYP (MEDIAN) LEGS (#LANES) | INT-REL TRAF- CNTL | RNDBT | | CRASH COLL SVRTY | V# | VEHICLE USE-TRLR OWNER TYPE | MOVE FROM TO | P# | PRTC TYPE | INJ SVRTY | ASGELICNS PEDEX RESLOC | ERROR | ACT |
|-------|---|--|----------------------------|---|--------------------------|-------|--------------------|------------------------|-----|--------------------------------------|--------------------|----|--------------|--------------|------------------------|----------|-------|
| /1999 | UMATILLA MILTON-FREEWATER MILT-FRE UA | 14 0 S MAIN ST 0 30.55 SW 4TH AVE | INTER SE 06 | CROSS 0 | N NONE | N | CLR DRY DLIT | S-1STOP REAR INJ | . 1 | NONE 0 PRVTE PSNGR CA | STRGHT SE NW | 1 | DRV | NONE | 43 F OR-Y | 043 | 000 |
| | : | | | √. | | | | | 2 | NONE 0 PRVTE PSNGR CA | STOP SE NW | 1 | DRV | NONE | OR<25 51 M OR-Y OR<25 | 000 | 011 |
| /1000 | UMATILLA | 14 | : | | | | | 1 | | | • | 2 | PSN | INJC | 13 F | • | |
| 71999 | MILTON-FREEWATER MILT-FRE UA | 0 S MAIN ST 0 30.55 SE 4TH AVE | INTER SE 06 | CROSS · 0 | n none | N | CLR DRY DAY | S-1STOP REAR INJ | 1 | NONE 0 PRVTE PSNGR CA | STRGHT SE NW | 1 | DRV | INJC | 41 F OR-Y OR>25 | 047 | 000 |
| | | | : | | | | | | 2 | NONE 0 PRVTE PSNGR CA | STOP SE NW | 1 | DRV | INJC | 41 F OR-Y | 000 | 011 |
| /2000 | UMATILLA MILTON-PREEWATER | 14 0 S MAIN ST | INTER CN | CROSS | n NONE | N | CLR DRY | O-1TURN TURN | 1 | NONE 0 | TURN-L NW NE | | | | OR<25 | <i>:</i> | , 000 |
| | MILT-FRE UA | 0 30.55 SE 4TH AVE | 02 | . 0 | | N , | DAY | PDO | | PSNGR CA | | 1 | DRV | NONE | 25 M N-VAL N-RES | 004 | : |
| | y. | | | | | | : | | | NONE 0 PRVTE PSNGR CA | STRGHT SE NW | 1 | DRV | NONE | 20 F OR-Y OR<25 | · 000 / | 000 |
| /2001 | UMATILLA MILTON-FREEWATER MILT-FRE UA | 14 0 S MAIN ST 0 30.55 SW 4TH AVE | INTER CN | CROSS | N STOP SIG | N N | CLD DRY | BIKE TURN | | | | | | | · • | :. · | |
| | | 0 30.55 SW 4TH AVE | | 0 | 4 | N | DAY | INJ | | | STRGHT NE SW | 1 | BIK | INJC | 48 M | 000 | 000 |
| | | . : | | . : | | | | | 1 | NONE 0 PRVTE PSNGR CA | TURN-L NW NE | 1 | DRV | NONE | 65 M OTH-Y N-RES | 027 | 000 |

OR 11 (Route 11, Hwy 8) at SW 3rd Avenue in Milton-Freewater 1999 - 2003

| · | COUNTY CITY URBAN AREA | | CONN # FIRST STREET SECOND STREET | | | INT-REL TRAF- | RNDBT | WTHR SURF LIGHT | CRASH COLL SVRTY | V# | VEHICLE USE-TRLR OWNER TYPE | MOVE FROM TO | | PRTC FYPE | INJ SVRTY | AS GE LICNS E'X RES | PED LOC | ERROR | ACT |
|-------|------------------------------|---------|---|-------------|-------|---------------|----------|-----------------------|------------------------|----|--------------------------------------|--------------------|-----|--------------|--------------|---------------------------|--------------|-------|-----|
| /2001 | UMATILLA MILTON-FREEWATER | 14 | s Main st | INTER CN | 3-LEG | N STOP SIG | N N N | CLR DRY | ANGL-OT TURN | | NONE. 0 | STRGHT N S | | | | - 1 | , | | 000 |
| • . | MILT-FRE UA | 0 30.59 | SW 3RD AVE | 03 | 0 . | | N | DAY | INJ | | PSNGR CA | | 1 [| ORV | INJC | 33 F OR-Y OR<25 | | 000 | |
| | | ; | | | ť | | , | | | | NONE 0 | TURN-L | | | | | |) ' | 000 |
| | | • | | | | | | | | | PSNGR CA | W 14 | 1 1 | DRV | NONE | 85 F OR-Y OR<25 | | 021 | 000 |

OR 11 (Route 11, Hwy 8) at SW 2nd Avenue in Milton-Freewater 1999 - 2003

| | COUNTY CITY URBAN AREA | CLASS COMPNT MLG TYP MILEPNT | CONN # FIRST STREET SECOND STREET | RD CHAR DIRECT LOCTN | INT-TYP (MEDIAN) LEGS (#LANES) | INT-REL TRAF- CNTL | OFFRD RNDBT DRVWY | SURF | CRASH COLL SVRTY | V# | VEHICLE USE-TRLR TYPE | FROM | | PRTC TYPE | INJ SVRTY | AS GELICNS PED EXRES LOC | ERROR | ACT |
|-------|---|---------------------------------------|---|----------------------------|---|--------------------------|-------------------------|-------------------|------------------------|-----|-----------------------------|-----------------|------------|--------------|--------------|--------------------------------|-------|-------|
| /1999 | UMATILLA MILTON-FREEWATER MILT-FRE UA | 14 0 0 30.64 | COLUMBIA ST S .MAIN ST | INTER NE 06 | CROSS | N UNKNOW | | CLR DRY DAY | S-STRGH SS-O INJ | 1. | NONE 1 PRVTE SEMI TOW | STRGHT NE SW | 1 | DRV | NONE | 32 M OTH-Y | 045 | |
| | | | | | | | | | | 2 - | NONE 0 PRVTE | STRGHT NE SW | | | | N~RES | | 000 |
| /2002 | UMATILLA | 14 | ; ; | INTER | CROSS | | N (| CLR | S-1STOP | 4 | PSNGR CA | | 1 1 | DRV , | INJC | 59 F OR-Y OR<25 | 000 | |
| , | MILTON-FREEWATER MILT-FRE UA | 0 30.64 | COLUMBIA ST S MAIN ST | NE 06 | 0 | N TRF SIGN | AL N I | ORY OAY | REAR INJ | 1. | NONE O PRVTE PSNGR CA | STRGHT NE SW | 1 1 | DRV | NONE | 67 M OR-Y OR<25 | 043 | . 000 |
| | S | | | | | \} | | | • : | 2 | NONE 0 PRVTE | STOP NE SW | | | | ORE25 | | 011 |
| | : | | • | | | E | | | | | PSNGR CA | | 1 I 2 I | | INJC | 35 F OR-Y OR<25 | 000 | |
| /2001 | UMATILLA MILTON-FREEWATER MILT-FRE UA | 14 0 0 30.64 | COLUMBIA ST S MAIN ST | INTER SE 06 | CROSS 0 | N TRF SIGN | AL N D | CLR DRY DAY | S-1STOP REAR PDO | 1 | NONE 0 PRVTE PSNGR CA | STRGHT SE NW | 1 I | | NONE | 40 M OR-Y | 026 | 000 |
| | | | | | | | | | | 2 | NONE 0 PRVTE | STOP SE NW | | | | OR>25 | | ÷ |
| | INCOME. | | | | | | | | | | PSNGR CA | | 1 I | ORV | NONE | 83 F OR-Y OR<25 | 000 | 01,1 |
| /2003 | UMATILLA MILTON-FREEWATER MILT-FRE UA | 14 0 0 30.64 | COLUMBIA ST MAIN ST | INTER CN 04 | CROSS 0 | N TRF SIGN | AL N D | LD RY AY | s-other Turn PDO | 1 | NONE 1 PRVTE SEMI TOW | TURN-L NE'SE | 1 [| DRV | NONE | 68 M OR-Y | 044 | 000 |
| | • . | | | | | · | | | . · | 2 | | TURN~L NE SE | | | | OR<25 | | 000 |
| | | | | | | | | | | | PSNGR CA | | 1 [| DRV | NONE | 63 F OR-Y OR<25 | 000 | 000 |

| liu m cription | Long |
|---------------------------|---|
| ACTION | Description |
| DDED | No action or non-warranted Skidded |
| OFF STOP VEH | |
| RHNG STR OBJ | Getting on or off stopped or parked vehicle |
| WED DOWN | Overhanging load struck another vehicle, etc. |
| IDING MANV | Slowed down |
| ALLEL PKNG | Avoiding maneuver |
| _ | Parallel parking |
| BLE PKNG GR INTERFERED | Angle parking |
| IN TRAF/ NO LFT | Passenger interfering with driver |
| | Stopped in traffic not waiting to make a left turn |
| FOR LFT TURN | Stopped because of left turn signal or waiting, etc. |
| WHILE TURNING | Stopped while executing a turn |
| CEED A/ STOPPING | Proceed after stopping for a stop sign/flashing red. |
| P/TURN ON RED | Turned on red after stopping |
| T CONTROL | Lost control of vehicle |
| FRM ALLEY/DRWY | Entering street or highway from alley or driveway |
| ALLEY FROM RD | Entering alley or driveway from street or highway |
| OBJ BF/ENT | Before entering roadway, struck pedestrian, etc. on sidewalk or shoulder |
| ERLESS VEHICLE | Car ran away - no driver |
| OBJ PRIOR COL | Struck, or was struck by, vehicle or pedestrian in prior collision before acc. stabiliz |
| ICLE STALLED | Vehicle stalled |
| R DEAD BF CRASH | Dead by unassociated cause |
| ÆR ASLEEP | Fatigued, sleepy, asleep |
| DED BY SUN | Driver blinded by sun |
| DED / HEADLIGHTS | Driver blinded by headlights |
| SICAL ILLNESS | Physically ill |
| NGED OVER MEDIAN | Vehicle crossed, plunged over, or through median barrier |
| SUING OTHER VEH | Pursuing or attempting to stop another vehicle |
| SING | Passing situation |
| KED OFF RD | Vehicle parked beyond curb or shoulder |
| CROSSED MED | Vehicle crossed earth or grass median |
| TER NO SIGNAL | Crossing at intersection - no traffic signal present |
| TER W/ SIGNAL | Crossing at intersection - traffic signal present |
| TER DIAGONAL | Crossing at intersection - diagonally |
| WN INTER | Crossing between intersections |
| RACTED | Driver's attention distracted |
| K SHLDR W/TRAFF | Walking, running, riding, etc., on shoulder WITH traffic |
| K SHLDR A/TRAFF | Walking, running, riding, etc., on shoulder FACING traffic |
| K PAVE W/TRAFF | Walking, running, riding, etc., on pavement WITH traffic |
| K PAVE A/TRAFF | Walking, running, riding, etc., on pavement FACING traffic |
| ING IN RDWY | Playing in street or road |
| H/WORK MV IN RD | Pushing or working on vehicle in road or on shoulder |
| K ON ROAD | Working in roadway or along shoulder |
| ID/LYING IN RD | Standing or lying in roadway |
| | |
| R FROM OFF ROAD | Literary Starting to transc lane from off-road |
| ER FROM OFF ROAD ER | Entering / starting in traffic lane from off-road Other action |

| r rtion | Long Description |
|---------------|--------------------------------------|
| DE APPLICABLE | No cause associated at this level |
| AST FOR COND | Speed too fast for conditions |
|) YIELD ROW | Did not yield right-of-way |
| D STOP SIGN | Passed stop sign or red flasher |
| GARD R-A-G | Disregarded R-A-G traffic signal. |
| : WRONG SIDE | Drove left of center on two-way road |
| PER PASSING | Improper overtaking |
| W TOO CLOSE | Followed too closely |
| PER TURN | Made improper turn |
| RDRUGS | Alcohol or Drug Involved |
| ≀ DRIVE ERR | Other improper driving |
| DEFECT | Mechanical defect |
| t | Other (not improper driving) |
| NE CHANGE | Improper change of traffic lanes |
| PER PARKING | Vehicle improperly parked |
| TIVE STEERING | Defective steering mechanism |
| TIVE BRAKES | Inadequate or no brakes |
| SHIFTED | Vehicle lost load or load shifted |
| AILURE | Tire Failure |
| OM VEHICLE | Phantom / Non-contact Vehicle |
| ENTION | Inattention |

| ium cription | Long Description |
|---|---|
| ERROR | No errar |
| E TURN | Wide turn |
| CORNER | Cut corner on turn |
| BEY TRN | Falled to obey mandatory traffic turn signal, sign or lane markings |
| N FNT TRAF | Left turn in front of oncoming traffic |
| N PROHIB | Left turn where prohibited |
| RM WRNG LN | Turned from wrong lane |
| WRONG LN | Turned into wrong lane |
| G U-TURN | U-turned illegally |
| STOP | Improperly stopped in traffic lane |
| FAIL SIG | Improper signal or failure to signal |
| BACKING | Backing improperly (Not parking) |
| PARKED | Improperly parked |
| STRT PARK | Improper start leaving parked position |
| STRT STOP | Improper start from stopped position |
| NO LIGHTS | Improper or no lights (vehicle in traffic) |
| DIM LIGHTS | Failed to dim lights (until 4/1/97) / Inattention (after 4/1/97) |
| JNSAFE VEH | Driving unsafe vehicle (no other error apparent) |
| MAN N/CLR | Entering, exiting parked position with insufficient clearance or other improper parking maneuve |
| RG DR SIG | Disregarded other driver's signal |
| RG TRF SIG | Disregarded traffic signal |
| RG STP SGN | Disregarded stop sign or flashing red |
| RG WRN SGN | Disregarded warning sign, flares or flashing amber |
| RG POL/FLG | Disregarded police officer or flagman |
| RG SIR/EMR | Disregarded siren or warning of emergency vehicle |
| RG RR SIG | Disregarded RR signal, RR sign, or RR flagman |
| OID STP V | Failed to avoid stopped or parked vehicle ahead other than school bus |
| D ROW BIK | Did not have right-of-way over pedalcyclist |
| R-O-W | Did not have right-of-way |
| D ROW PED | Failed to yield right-of-way to pedestrian |
| S ON CURVE | |
| | Passing on a curve |
| | Passing on a curve Passing on the wrong side |
| S WRNG SID S TANGENT | Passing on the wrong side |
| S WRNG SID S TANGENT | Passing on the wrong side Passing on straight road under unsafe conditions |
| S WRNG SID S TANGENT S STP4PED | Passing on the wrong side Passing on straight road under unsafe conditions Passed vehicle stopped at crosswalk for pedestrian |
| S WRNG SID S TANGENT S STP4PED S AT INTER | Passing on the wrong side Passing on straight road under unsafe conditions Passed vehicle stopped at crosswalk for pedestrian Passing at intersection |
| S WRNG SID S TANGENT S STP4PED S AT INTER S ON HILL | Passing on the wrong side Passing on straight road under unsafe conditions Passed vehicle stopped at crosswalk for pedestrian Passing at intersection Passing on crest of hill |
| S WRNG SID S TANGENT S STP4PED S AT INTER S ON HILL S N/PASSNG | Passing on the wrong side Passing on straight road under unsafe conditions Passed vehicle stopped at crosswalk for pedestrian Passing at intersection Passing on crest of hill Passing in "No Passing" zone |
| S WRNG SID S TANGENT S STP4PED S AT INTER S ON HILL S N/PASSNG S ONC TRAF | Passing on the wrong side Passing on straight road under unsafe conditions Passed vehicle stopped at crosswalk for pedestrian Passing at intersection Passing on crest of hill Passing in "No Passing" zone Passing in front of oncoming traffic |
| S WRNG SID S TANGENT S STP4PED S AT INTER S ON HILL S N/PASSNG S ONC TRAF TING IN | Passing on the wrong side Passing on straight road under unsafe conditions Passed vehicle stopped at crosswalk for pedestrian Passing at intersection Passing on crest of hill Passing in "No Passing" zone Passing in front of oncoming traffic Cutting in (two lanes - two way only) |
| S WRNG SID S TANGENT S STP4PED S AT INTER S ON HILL S N/PASSNG S ONC TRAF | Passing on the wrong side Passing on straight road under unsafe conditions Passed vehicle stopped at crosswalk for pedestrian Passing at intersection Passing on crest of hill Passing in "No Passing" zone Passing in front of oncoming traffic |

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LW TO CLOS Following too closely (Must be on Officer's Report)

RD/DR WRNG Straddling or driving on wrong lanes

LANE CHG Improper change of traffic lanes

NG WY/1 WA Wrong way on one-way roadway (Vehicle is deliberately traveling on wrong side)

ASIC RULE Driving too fast for conditions (Not excessive speed)

N DOOR TRAF Opened door into adjacent traffic lane

AINT SPEED Citation issued for "Failure to maintain reasonable speed"

EED Excessive Speed
CKLSS DRVN Reckless driving
RELSS DRVN Careless driving

1T NO SGNL Crossing at intersection – no traffic signal present
1T W/ SGNL Crossing at intersection – traffic signal present

IT DIAGNL Crossing at intersection - diagonally
TWN INTER Crossing between intersections

HLD W/TRAF Walking, running, riding, etc., on shoulder WITH traffic
HLD A/TRAF Walking, running, riding, etc., on shoulder FACING traffic
AVE W/TRAF Walking, running, riding, etc., on pavement WITH traffic

'AVE A/TRAF Walking, running, riding, etc., on pavement FACING traffic

Y IN RDWY Playing in street or road

3H MV IN RD Pushing or working on vehicle in road or on shoulder

RK IN RD Working in roadway or along shoulder

NG IN RD Standing or lying in roadway
RG POL/FLG Disregarding Police (eluding)

AINT LANE Failed to maintain lane

NOFF RD Ran off road

JUDGE CLR Driver misjudged clearance

ERSTEER Over Correcting
TTENTION Inattention (4/1/1997)

ERLOAD Overloading or improper loading of vehicle with cargo or passengers

A DISRG TCD Unable to determine which driver disregarded traffic control device

| dium scription | Long Description |
|-------------------|---|
| :LL/JUMPED MV | Occupant fell, jumped or was ejected from moving vehicle |
| INGR INTERFERED | Passenger interfered with driver |
| IML INTERFERED | Animal or insect in vehicle interfered with driver |
| :D INVOLVED | Pedestrian involved (Non-pedestrian accident) |
| JBSEQUENT PED | "Sub-Ped": pedestrian injured subsequent to collision, etc. |
| :DALCYCLE INV | Tricycle-Bicycle involved |
| TCHHIKER | Hitchhiker (soliciting a ride) |
| NGR TOWED | Passenger being towed or pushed on conveyance |
| VOFF STOP VEH | Getting on or off stopped or parked vehicle (occupants only) |
| JBSEQ OVERTURN | Overlurned after first harmful event |
| H BEING PUSHED | Vehicle being pushed |
| :H TOWED/TOWING | Vehicle towed or had been towing another vehicle |
| RCED BY IMPACT | Vehicle forced by impact into another vehicle, pedalcyclist or pedestrian |
| / SET IN MOTION | Vehicle set in motion by non-driver (child released brakes, etc.) |
| ILROAD ROW | At or on railroad right-of-way (not Light Rail) |
| 3HT RAIL ROW | At or on Light-Rail right-of-way |
| AIN HIT VEH | Train struck vehicle |
| H HIT TRAIN | Vehicle struck train |
| H HIT RR CAR | Vehicle struck railroad car on roadway |
| CKKNIFE | Jackknife; trailer or towed vehicle struck towing vehicle |
| :AILER O'TURN | Trailer or towed vehicle overturned |
| LR CONN BROKE | Trailer connection broke |
| TCHD TRLR STRKNG | Detached trailing object struck other vehicle, non-motorist, or object |
| DOOR OPN IN TRAF | Vehicle door opened into adjacent traffic lane |
| HEEL CAME OFF | Wheel came off |
| OD FLEW UP | Hood flew up |
| AD SHIFTED | Lost load, load moved or shifted |
| RE FAILURE | Tire Failure |
| ∶ T | Pet: cat, dog and similar |
| /ESTOCK | Stock: cow, calf, bull, steer, sheep, etc. |
| ORSE | Horse, mule, or donkey |
|)RSE & RIDER | Horse and rider |
| ME NO DEER/ELK | Wild animal, game (includes birds; not deer or elk) |
| ER OR ELK | Deer or elk, wapiti |
| IIMAL-DRAWN VEH | Animal-drawn vehicle |
| JLVERT/MANHOLE | Culvert, open low or high manhole |
| PACT CUSHION | Impact attenuator |
| RKING METER | Parking meter |
| JRB | Curb (also narrow sidewalks on bridges) |
| | |

JARDRAIL Guard rail (not metal median barrier)

EDIAN BARRIER Median barrier (raised or metal)

ALL Retaining wall or tunnel wall

RIDGE RAIL Bridge railing (on bridge and approach)

RIDGE ABUTMENT Bridge abutment (approach ends)

NIDGE COLUMN Bridge pillar or column (even though struck protective guard rail first)

NDGE GIRDER Bridge girder (horizontal structure overhead)

AFFIC ISLAND Traffic raised island

ORE Gore

DLE-UNKNOWN Pole – type unknown

DLE-UTILITY Pole – power or telephone

)LE-ST LIGHT Pole – street light only

DLE-TRAF SIGNAL Pole - traffic signal and ped signal only

 DLE-SIGN BRIDGE
 Pole – sign bridge

 'OP/YIELD SIGN
 Stop or yield sign

*HER SIGN Other sign, including street signs

'DRANT Hydrant

:LINEATOR Delineator or marker (reflector posts)

AILBOX Mailbox

:EE/STUMP Tree, stump or shrubs

:GTN OVER RDWY Tree branch or other vegetation overhead, etc.

BLE ACROSS RD Wire or cable across or over the road

MP SIGN/BARR Temporary sign or barricade in road, etc.

RM SIGN/BARR Permanent sign or barricade in/off road

IDE/ROCKS Slides, rocks off or on road, falling rocks

REIGN OBJECT Foreign obstruction/debris in road (not gravel)

≥UIP WORKING Equipment working in/off road

HER EQUIPMENT Other equipment in or off road (Includes parked trailer, boat)

NNTNCE EQUIP Wrecker, street sweeper, snow plow or sanding equipment

*HER WALL Rock, brick or other solid wall

REGULAR PAVEMENT Speed bump, other bump, pothold or pavement irregularity

VE IN Bridge or road cave in

GH WATER High Water
IOW BANK Snow Bank

DLE/RDWY EDGE Chuckhole in road, low or high shoulder at pavement edge

JT SLOPE/DITCH Cut slope or ditch embankment

3J FRM OTHR VEH Struck by rock or other object set in motion by other vehicle (incl. lost loads)

*HER MOVING OBJ Struck by other moving or flying object

H OBSCURE VIEW Vehicle obscured view
G OBSCURE VIEW Vegetation obscured view

D OBSCURE VIEW View obscured by fence, sign, phone booth, etc.

ND GUST Wind Gust

MERSION Vehicle immersed in body of water

RE/EXPLOSION Fire or Explosion

THER. Accide an alted to a comer separate accident VO WAY ONE SIDE Two-way traffic on divided roadway all routed to one side **IANTOM VEH** Other (phantom) non-contact vehicle (on PAR or report) **:LLPHONE-POLICE** Cell phone (on PAR or driver in use) OL GRAD DR LIC Teenage driver in violation of graduated license pgm JY WIRE Guy wire :RM Berm (earthen or gravel mound) RAVEL IN RDWY Gravel in roadway IRUPT EDGE Abrupt edge **:LLPHONE-WITNSS** Cell Phone use witnessed by other participant 1K FIX OBJ Unknown type of fixed object THER OBJ NOT FIXED Other or unknown object, not fixed GR OUTSIDE VEHICLE Passenger riding on vehicle exterior INGR ON PEDALCYCLE Passenger riding on pedalcycle DNMOTOR WHEELCHAI Pedestrian in non-motorized wheelchair *OTORIZED WHEELCHAI* Pedestrian in motorized wheelchair / STR VEH Non-motorist struck vehicle CAR STRUCK VEH Street Car/Trolley (on rails and/or overhead wire system) struck vehicle H STRUCK ST CAR Vehicle struck Street Car/Trolley (on rails and/or overhead wire system)

At or on Street Car/Trolley right-of-way

Shoulder gave way

REET CAR ROW

ILDR GAVE

Appendix D

2025 PM Peak No-Build Traffic Operations Analysis Worksheets

Scenario Report

Scenario:

AM

Command: Volume: Geometry:

Impact fee: Trip Generation: Trip Distribution:

ΕX

Paths: Routes:

Configuration:

AM

Default Impact Fee
Default Trip Generation
Default Trip Distribution
Default Paths
Default Routes

Default Configuration

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Impact Analysis Report Level Of Service

| In | tersection | 1.0 | Base Del/ V/ OS Veh C | | Future Del/ V/ S Veh C | Change in |
|----|---------------------------------|-----|-----------------------------|---|------------------------------|--------------|
| # | 1 OR 11/ 14th Ave | | 30.7 0.000 | D | | + 0.000 D/V |
| # | 2 Main Street-OR11/ 12th Ave | ۰۴ | 51.9 0.000 | F | 51.9 0.000 | + 0.000 D/V |
| # | 3 Main Street - OR 11/ 10th Ave | C | 23.3 0.000 | C | 23.3 0.000 | + 0.000 0/V |
| # | 4 Main Street - OR 11/ 9th Ave | D | 28.0 0.000 | D | 28.0 0.000 | + 0.000 D/V |
| # | 5 Main Street-OR11/ 8th Ave | ,D | 33.9 0.000 | D | 33.9 0.000 | + 0.000 D/V |
| # | 6 OR 11/7th Ave - Eastbound | E | 44.1 0.000 | E | 44.1 0.000 | + 0.000 D/V |
| # | 7 OR 11/7th Avenue - Westbound | Ç | 18.9 0.000 | С | 18.9 0.000 | + 0.000 D/V |
| # | 8 OR 11/ 4th Avenue | · E | 47.4 0.000 | E | 47.4 0.000 | + 0.000 D/V |
| # | 9 Main Street/OR11/ 2nd Ave | С | 21.1 0.316 | С | 21.1 0.316 | + 0.000 D/V |

30.7

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Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 OR 11/ 14th Ave

ApproachDel:

ApproachLOS:

XXXXXX

| Average Dela | y (sec/yeh): | 6.3 | Worst | Case | Level | Of | Service: | D | į 3 0.7 | '] |
|--------------|--------------------------|------|-------|------|-------|-----|----------|-------|----------------|----|
| 为自治自主法主义主义共享 | 《美国高京教育者主义方言古古古 古 | **** | **** | **** | *** | *** | ***** | ***** | **** | * |
| a 1 | | | | | _ | | | | | |

| ******** | ****** | ***** | | ***** |
|--|--|--|--|---|
| Approach: Movement: | North Bound L - T - R | South Bound L - T - R | East Bound L - T - R | West Bound L - T - R |
| Control: Rights: Lanes: | Uncontrolled Include . 0 0 0 1 0 | Uncontrolled Include 0 1 1 0 0 | Stop Sign Include 0 0 0 0 0 | Stop Sign Channel 1 0 0 0 1 |
| Volume Modul Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol.: | | 1 Dec 2004 << 108 259 0 1.32 1.56 1.32 143 403 0 1.00 1.00 1.00 0.70 0.70 0.70 204 576 0 0 0 0 204 576 0 | 0 0 0 1.00 1.00 1.00 0.70 0.70 0.70 | 12 0 152 1.32 1.32 1.32 16 0 201 1.00 1.00 1:00 0.70 0.70 0.70 23 0 287 0 0 0 23 0 287 |
| | Module: xxxxx xxxx xxxxx xxxx xxxx xxxxx | | | 6.4 xxxx 6.2 3.5 xxxx 3.3 |
| Potent Cap.: Move Eap.: Volume/Cap: | **** **** **** **** **** **** **** **** **** | 743 xxxx xxxxx 864 xxxx xxxxx 864 xxxx xxxxx 0.24 xxxx xxxx | XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXX | 1426 xxxx 731 149 xxxx 422 118 xxxx 422 0.19 xxxx 0.68 |
| Stopped Del: LOS by Move: Movement: Shared Cap.: SharedQueue: | XXXXX XXXX XXXXX XXXXX XXXX XXXXX | 10.4 xxxx xxxxx B * * LT - LTR - RT xxxx xxxx xxxxx 0.9 xxxx xxxxx | XXXXX XXXX XXXXX XXXX XXXX XXXXX LT - LTR - RT XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX | 42.4 xxxx 29.8 E * D LT - LTR - RT xxxx xxxx xxxxx xxxx xxxx xxxx |
| Suered Los. | | | | ~~ = |

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 Main Street-OR11/ 12th Ave

| Average Dela | y (sec/veh): | 2.7 Worst Case | Level Of Service | F[51.9] |
|--|---|---|--|---|
| Approach: Movement: | North Bound L - T - R | South Bound L - T - R | East Bound L T R | West Bound |
| Control: | Uncontrolled Include 0 1 0 1 0 | Uncontrolled Include 0 1 0 1 0 | Stop Sign Include | Stop Sign |
| Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: | e: >> Count Date: | 7 Dec 2004 << 10 358 7 1.32 1.56 1.32 13 558 9 1.00 1.00 1.00 0.80 0.80 0.80 17 697 12 0 0 | 36 2 6 1.32 1.32 1.32 48 3 8 1.00 1.00 1.00 | 1.32 1.32 1.32 4 1 20 1.00 1.00 1.00 0.80 0.80 0.80 5 2 25 0 0 0 0 5 2 25 |
| | 4.1 xxxx xxxxx 2.2 xxxx xxxxx | | 7.5 6.5 6.9 | 7.5 6.5 6.9 |
| Capacity Mod Cnflict Vol: Potent Cap.: Move Cap.: | ule: 709 xxxx xxxxx | 879 xxxx xxxxx 764 xxxx xxxxx 764 xxxx xxxxx 0.02 xxxx xxxx | 1188 1628 354 144 101 642 133 98 642 | 124 100 565 116 97 565 |
| Stopped Del: LOS by Move: Movement: Shared Cap: SharedQueue: | 0.0 xxxx xxxxx 9.1 xxxx xxxxx A * * LT - LTR - RT xxxx xxxx xxxx 0.0 xxxx xxxxx 9.1 xxxx xxxxx A * * | 9.8 xxxx xxxx A * * LT - LTR - RT xxxx xxxx xxxxx 0.1 xxxx xxxxx 9.8 xxxx xxxxx A * * | xxxxx 2.4 xxxxx xxxxx 51.9 xxxxx | LT - LTR - RT xxxx 304 xxxxx xxxx 0.3 xxxxx |

Level Of Service Computation Report

2000 HCM Unsignalized Method (Rase Volume Alternative)

| Intersection | #3 Main Str | eet - OR 11/ | 10th Ave | ********* | | **** |
|---|--|---|---|---|---|---|
| Average Dela | / (set/yeh): | 0.6 W | orst Case I | evel Of Ser | vice: C[| 23.3] |
| Approach: Movement: | North Bou | | Bound I R | East Bour L - T - | | |
| Control: Rights: Lanes: | Uncontrol Includ D 1 0 1 | e In | trolled clude 0 1 0 | Stop Sigr Include 0 0 1! 0 | i Inclu | de |
| Volume Module Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol.: | 5 495 1.32 1.52 7 751 1.00 1.00 | 1 4 3 1.32 1.32 1. 1 5 5 1.00 1.00 1. 0.88 0.88 0. 2 6 6 0 0 | 69 8 52 1.32 1 60 11 00 1.00 1 | 9 1 | 5 1 1 32 1.32 1.32 7 1 1 .00 1.00 1.00 .88 0.88 0.88 8 2 2 0 0 0 8 2 2 | 11 1.32 15 1.00 0.88 17 0 |
| Critical Gap Critical Gp: FollowUpTim: | 4.1 xxxx xx 2.2 xxxx xx | | xx xxxxx xx xxxxx | 7.5 6.5 3.5 4.0 | 6.9 7.5 6.5 3.3 3.5 4.0 | 6.9 3.3 |
| Capacity Modi Cnflict Vol: Potent Cap.: Move Cap.: Volume/Cap: | 649 xxxx xx 933 xxxx xx 933 xxxx xx | xxxx 780 xx | XX XXXXX XX XXXXX | 159 115 | 324 1201 1530 671 141 116 671 136 114 .01 0.01 0.01 | 428 575 575 0.03 |
| LOS by Move: Movement: Shared Cap.: SharedQueue: Shrd StpDel: | 0.0 xxxx xx 8.9 xxxx xx 1A * LT - LTR - xxxx xxxx xx 0.0 xxxx xx 8.9 xxxx xx | XXXX 9.6 XX * A 1 RT LT - LT XXXX XXXX XXX XXXX 0.0 XXX XXXX 9.6 XXX | XX XXXXX XX * | XXX XXXX XX LT - LTR - XXXX 216 XX XXXX 0.3 XX | xxx xxxx 369 | ××××× - RT ××××× |
| Shared LOS: ApproachDel: ApproachLOS: | A * xxxxxx * | * A | * * XX * | * C 23.3 C | * * C 15.3 | * |

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Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Afternative)

| Intersection | #4 Main Street | OR 11/ 9th Ave | ****** | |
|---|--|---|--|--|
| Average Dela | y (sec/veh): | | e Level Of Servic | |
| Approach: Movement: | North Bound L - T - R | South Bound L - T - R | East Bound L - T - R | West Bound L T - R |
| Control: Rights: Lanes: | Uncontrolled Include 0 1 0 1 0 | Uncontrolled Include 0 1 0 1 0 | Stop Sign Include 0 0 1! 0 0 | Stop Sign Include 0 0 1! 0 0 |
| Volume Module Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol.: | e: >> Count Date 1 508 5 1.32 1.61 1.32 1 818 7 1.00 1.00 1.00 0.91 0.91 0.91 1 899 7 0 0 0 0 1 899 7 | 22 Dec 2004 << 15 371 19 1.32 1.61 1.32 20 597 25 1.00 1.00 1.00 0.91 0.91 0.91 22 657 28 0 0 0 22 657 28 | 1.32 1.32 1.32 15 1 8 1.00 1.00 1.00 0.91 0.91 0.91 16 1 9 0 0 0 | 4 1 13 1.32 1.32 1.32 5 1 17 1.00 1.00 1.00 0.91 0.91 6 1 19 0 0 0 6 1 19 |
| | | 4-1 xxxx xxxxx 2-2 xxxx xxxxx | 7.5 6.5 6.9 3.5 4.0 3.3 | 7.5 6.5 6.9 3.5 4.0 3.3 |
| Capacity Mode Cnflict Vol: Potent Cap.: Move Cap.: Volume/Cap: | lte: 684 xxxx xxxxx 905 xxxx xxxxx 905 xxxx xxxxx 0.00 xxxx xxxx | 906 xxxx xxxxx 747 xxxx xxxxx 747 xxxx xxxx | 1167 1623 342 149 102 654 139 98 654 0.12 0.01 0.01 | 1278 1633 453 123 100 554 117 97 554 0.05 0.01 0.03 |
| Level Of Serv Queue: Stopped Del: LOS by Move: Movement: Shared Cap.: SharedQueue: Shrd StpDel: Shared LOS: ApproachDel: ApproachLOS: | 100 Module: 0.0 xxxx xxxxx 9.0 xxxx xxxx A * * LT - LTR - RT xxxx xxxx xxxxx 0.0 xxxx xxxxx 9.0 xxxx xxxxx A * * xxxxxx | 10.0 xxxx xxxxx A * * LT - LTR - RT xxxx xxxx xxxxx 0.1 xxxx xxxxx | XXXXX XXXX XXXXX XXXXX XXXX XXXXX LT - LTR - RT XXXX 183 XXXXX XXXXX 0.5 XXXXX XXXXX 28.0 XXXXX * D * 28.0 D | XXXXX XXXX XXXXX |

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Main Street-OR11/ 8th Ave

| ******* | 主文首告有实法 法本本 | ***** | **** | **** | | | | | ************************************** | **** | |
|---|--|---|---|---|--|---------------------|-------------------------------------|---|--|------------------------|---|
| Average Dela | y (sec/veh |): ****** | 1.4 | Work | st Cas | e Leve | l Of | Servic | 4 2 141 | | 33.91 |
| Approach: Movement: | North B | ound - R | | th Bo | ound - R | L | ast B | - R | | est Bo | |
| Control: Rights: Lanes: | Uncontr Incl 0 1 0 | ude | | ontro Incli | ude | '' s | top S Incli | ign ude | | top S Incli | ude : |
| Volume Modul Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol; Final Vol: | 8 522 1.32 1.52 | 1.32 3 1.00 0.88 3 | 29 No 3 1.32 4 1.00 0.88 5 0 | 392 1.52 595 1.00 0.88 676 | 04 << 15 1.32 20 1.00 0.88 23 0 | 33 1.00 | 1.32 1.00 0.88 2 0 2 | | 1.32 3 1.00 0.88 3 0 | 1 1.00 0.88 2 | 12 1.32 16 1.00 0.88 18 0 |
| Critical Gap Critical Gp: FollowUpTim: | 4.1 xxxx | | | | xxxxx xxxxx | 7.5 3.5 | 6.5 4.0 | 6.9 3.3 | 7.5 3.5 | 6.5 4.0 | 6.9 3.3 |
| Capacity Mod Cnflict Vol: Potent Cap.: Move Cap.: Volume/Cap: | . 699 xxxx | XXXXX | 748 748 | XXXX | XXXXX XXXXX XXXXX XXXX | 148 1 3 9 | 1624 102 100 0.02 | 349 647 647 0.03 | 1274 124 118 10.03 | 100 98 | 452 555 555 0.03 |
| Level Of Ser Queue: Stopped Del: LOS by Move: Movement: Shared Cap.: Shared Cueue: Shrd StpOel: Shared LOS: ApproachOel: | 0.0 xxxx 9.1 xxxx A * LT - LTR xxxx xxxx | XXXXX XXXXX - RT XXXXX XXXXX XXXXX | 9.8 A LT - XXXX 0.0 9.8 A | LTR XXXX XXXX | XXXXX - RT XXXXX XXXXX | LT - | LTR 179 1.2 33.9 0 | XXXXX XXXXX - RT XXXXX XXXXX XXXXX | LT - | LTR 307 0.2 | XXXXX - RT XXXXX XXXXX |
| ApproachLOS: | | | | - | | | D | | | U | |

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #6 OR 11/7th Ave - Eastbound Average Delay (sec/véh): 0.4 Worst Case Level Of Service: Approach: North Bound South Bound Movement: L - T - R L - T - R L - T - R L - T - R ------||--------| Uncontrolled Control: Uncontrolled Stop Sign Stop Sign Include Rights: Include Include Include Lanest 0 1 0 1 0 0 1 0 1 0 0 0 1! 0 0 0 0 1! 0 .0 Volume Module: Base Vol: 2 556 Growth Adj: 1.32 1.56 1.32 1.32 1.56 1.32 1.32 1.32 1.32 1.32 1.32 1.32 Initial Bse: D 636 3 866 17 Q User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 PHF Adi: 0.70 0.70 0.70 0.70 0.70 0.70 0.70 0.70 0.70 0.70 0.70 0.70 PHF Volume: 4 1237 0 908 25 . 13 Reduct Vol: n n 0 Λ. Λ n 4 1237 0 908 Final Vol.: 25 . 13 Critical Gap Module: Critical Gp: 4.1 xxxx xxxxx xxxxx xxxxx xxxx 6.8 6.5 6.9 xxxxx xxxx xxxxx FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxxx xxxxx 3.5 4.0 3.3 xxxxx xxxx xxxxx Capacity Module: Chflict Vol: 932 xxxx xxxxx xxxx xxxx xxxx 1546 2165 XXXX XXXX XXXXX Potent Cap.: 730 xxxx xxxxx xxxxx xxxx xxxxx 107 48 Move Cap.: 730 xxxx xxxxx xxxxx xxxx xxxx xxxx 107 48 549 XXXX XXXX XXXXX 549 XXXX XXXX XXXXX Volume/Cap: 0.01 xxxx xxxx xxxx xxxx xxxx 0.12 0.04 0.01 XXXX XXXX XXXX LOS by Move: A LT - LTR - RT LT - LTR - RT LT - LTR - RT" LT - LTR - RT SharedQueue: 0.0 xxxx xxxxx Shrd StpDel: 10.0 xxxx xxxxx Shared LOS: Α Α . * * E ApproachDel: XXXXXX XXXXXX XXXXXX

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ApproachLOS:

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection #7 OR 11/7th Avenue - Westbound | | | | | | | |
|--|--|------------------------------------|---|--|--|--|--|
| Average Delay (sec/veh): | 0.4 Worst Case | Eevel Of/Service: | C[18.9] | | | | |
| Approach: North Bound Movement: L T - R | South Bound L - T - R | East Bound | West Bound L - T - R | | | | |
| Control: Uncontrolled Rights: Include Lanes: 0 1 0 1 0 | Uncontrolled Include 0 1 0 1 0 | Stop Sign Include 0 0 0 0 0 | Stop Sign Include 0 0 1! 0 0 | | | | |
| Volume Module: Base Vol: 0 556 1 Growth Adj: 1.32 1.56 1.32 Initial Bse: 0 866 1 User Adj: 1.00 1.00 1.00 PMF Adj: 0.70 0.70 0.70 PMF Volume: 0 1237 2 Reduct Vol: 0 0 0 Final Vol: 0 1237 2 | 7 408 0 1.32 1.56 1.32 9 636 0 1.00 1.00 1.00 0.70 0.70 0.70 13 908 0 0 0 0 13 908 0 | 0 0 0 1.00 1.00 1.00 | 2 0 16 1.32 1.32 1.32 3 0 21 1.00 1.00 1.00 0.70 0.70 0.70 4 0 30 0 0 0 0 4 0 30 | | | | |
| Critical Gap Module: Critical Gp:xxxxx xxxx xxxxx FollowUpTim:xxxxx xxxx xxxxx Capacity Module: | | | 6.8 xxxx 6.9 3.5 xxxx 3.3 | | | | |
| Conflict Vol: xxxx xxxx xxxxx Potent Cap:: xxxx xxxx xxxx xxxx Move Cap:: xxxx xxxx xxxx xxxx xxxx Xvolume/Cap: xxxx xxxx xxxx xxxx | 1239 XXXX XXXXX 558 XXXX XXXXX 558 XXXX XXXX | XXXX XXXX XXXXX XXXX XXXX XXXXX | 1718 xxxx 620 82 xxxx 436 81 xxxx 436 0.05 xxxx 0.07 | | | | |
| Level Of Service Module: Queue: XXXXX XXXX XXXXX Stopped Del:XXXXX XXXX XXXX LOS by Move: * * * Movement: LT - LTR - RT Shared Cap.: XXXX XXXX XXXX SharedQueue: 0.0 XXXX XXXX Shrd StpDel: 9.0 XXXX XXXX Shared LOS: A * * ApproachDel: XXXXX ApproachDel: XXXXX ApproachLOS: * | 11.6 xxxx xxxxx B * * LT - LTR - RT xxxx xxxx xxxxx 0.1 xxxx xxxxx | | XXXX XXXX | | | | |

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Milton-Freewater STA and TSP Update, Milton-Freewater, OR.
2025 Future Traffic Condition, Weeday AM Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #8 OR 11/ 4th Avenue Average Delay (sec/veh): 0.6 Worst Case Level Of Service: Approach: North Bound South Bound East Bound Movement: L - T - R L T - R L - T - R L - T - R Control: Uncontrolled Uncontrolled Stop Sign Stop Sign Rights: Include Include Include Include 0 1 0 1 0 0 1 0 1 0 0 0 1! 0 0 0.0 1! 0 0 Lanes: Volume Module: Growth Adj: 1.32 1.52 1.32 1.32 1.52 1.32 1.32 1.32 1.32 7 647 Initial Bse: 4 874 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 PHF Adi: PHF Volume: 8 829 5 1121 . 2 2 8 Reduct Vol: 0 8 829 Final Vol.: 5 1121 Critical Gap Module: Critical Gp: 4.1 xxxx xxxxx 4.1 xxxx xxxxx 7.5 6.5 6.9 7.5 6.5 FollowUpTim: 2.2 xxxx xxxxx 2.2 xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 Capacity Module: Cnflict Vol: 831 xxxx xxxxx 1123 xxxx xxxxx 1418 1980 415 1564 1980 561 Potent Cap.: 797, xxxx xxxxx 618 xxxx xxxxx 62 592 77 62 476 797 xxxx xxxxx 618 xxxx xxxxx 92 61 Move Cap.: 592 74 61 476 Volume/Cap: 0.01 xxxx xxxx 0.01 xxxx xxxx 0.09 0.03 0.00 0.02 0.03 0:04 Level Of Service Module: 0.0 xxxx xxxxx LOS by Move: Movement: LT - LTR - RT LT - LTR - RT LT ~ LTR - RT LT - LTR - RT SharedQueue: 0.0 xxxx xxxxx 0.0 xxxx xxxxx xxxxx 0.4 xxxxx xxxxx 0.3 xxxxx Shrd StpDel: 9.5 xxxx xxxxx 10.9 xxxx xxxxx xxxxx 47.4 xxxxx xxxxx 21.7 xxxxx Shared LOS: В Ę ApproachDel: 21.7 XXXXXX XXXXXX ApproachLOS:

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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

| Intersection | #9 Mai | n Str | eet/0 | ₹11/ Z | nd Av | e | | | ****** | | | |
|---|---|---|--|--------------------------------|--|---|------------------------------|---------------------------|---|---|-------------------------------|--|
| Cycle (sec): Loss Time (se Optimal Cycle | ec): e: | 100 12 32 | (Y+R : 新衛生療物 | | ec) A Ł | ritica verage evel 0 | Delay F Serv | / (sec | (X): /veh): | | 0.31 21. | - |
| Approach: Movement: | | h Bou | | L - | th Bo | | L - | st Bo | - R | | st Bo | |
| Control: Rights: Min. Green: Lanes: | | ermitt gnore 0 1 0 | 0 | 1 | ermit Inclu O | ted ' de 0 | ' Spl | lit Ph Inclu | ase ' de O | 0 | it Ph Inclu O | de 0 |
| Volume Modulo Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Reduced Vol: PCE Adj: MLF Adj: Final Vol.: | 14 1.32 1 18 1.00 1 0.90 0 21 0 21 1.00 1 | 170 1.61 274 1.00 1.90 304 0 304 1.00 | Date: 407 1.61 655 0.00 0.00 0 | 1.32 0 1.00 0.90 0 | 256 1.00 0.90 285 0 285 1.00 | 4 << 1 1 .32 1 .00 0.90 1 1 .00 1 .00 1 .00 1 .00 1 .00 | | 1.00 | 11 1.32 15 1.00 0.90 16 0 16 1.00 1.00 | 262 1.61 422 1.00 0.90 469 0.469 1.00 469 | 0.90 28 0 28 1.00 | 1 1.32 1 1.00 0.90 1 0 1.00 1.00 |
| Saturation F Sat/Lane: Adjustment: Lanes: Final Sat.: | Ow Moc 1800 1 0.86 0 0.13 1 196 2 | 800 .86 .87 | 1800 1.00 1.00 1800 | 1800 1.00 0.00 0 | 0.93 | 1800 0.93 0.01 17 | | 1800 1.00 0:00 0 | 1800 0.88 0.61 971 | 1800 0.94 1.89 3182 | 0.94 | 1800 0.94 0.01 |
| Capacity Ana Vol/Sat: Crit Moves: Green/Cycle: | Ó.10 C | 10 | 0.00 | 0.00 | | 0.09 | 0.02 | | 0.02 | 0.15 | **** | 0.16 |
| Volume/Cap: Delay/Veh: User DelAdj: AdjDel/Veh: HCM2kAvg: | 0.32 0 25.1 2 1.00 1 25.1 2 | 25.1 | 0.00 0.0 1.00 0.0 | 1.00 | 24.5 | 0.26 24.5 1.00 24.5 3 | 0.32 47.8 1.00 47.8 | 0.0 | 0.32 47.8 1.00 47.8 | 0.30 15.0 1.00 15.0 5 | 15.2 1.00 | 0.32 15.2 1.00 15.2 |

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Wed Jun 1, 2005 18:21:34

Kittelson & Associates, Inc. - Project # 6743 Milton-Freewater STA and TSP Update, Milton-Freewater, OR 2025 Total Traffic Conditions, Weekday PM Péak Hour

Scenario Report

Scenario:

Command: Volume: Geometry:

Impact Fee: Trip Generation: Trip Distribution:

Configuration:

Paths: Routes:

ΕX

Default Impact Fee
Default Trip Generation
Default Trip Distribution
Default Paths

Default Routes Default Configuration

Kittelson & Associates, Inc. - Project # 6743 Milton-Freewater STA and TSP Update, Milton-Freewater, OR 2025 Total Traffic Conditions, Weekday РМ Реак Hour Impact Analysis Report

Level Of Service

| Intersection | | | Del | | | 0el, | ture / V <u>/</u> | | Chang | |
|--------------|-----------------------|----|---------------|-------|---|----------------|----------------------|----|-------|-------|
| # 1 OR 11/ 1 | 4th Ave | | S Veh 27:5 | | | DS Veh 27.5 | 0.000 | + | 0.000 | D/V |
| # 2 Main Str | eet-OR11/ 12th Ave | F | 73.7 | 0.000 | F | 73.7 | 0.00D | + | 0.000 | D/V |
| # 3 Main Str | eet - OR 11/ 10th Ave | F | 88.3 | 0.000 | F | 88.3 | 0.000 | ٠+ | 0.000 | D/V . |
| # 4 Main Str | eet - OR 11/ 9th Ave | Ε | 46.7 | 0.000 | E | 46.7 | 0.000 | + | 0.000 | D/V |
| # 5 Main Str | eet-OR11/ 8th Ave | F | 162.9 | 0.000 | F | 162.9 | 0.000 | + | 0.000 | D/V |
| # 6 OR 11/7t | h Ave - Eastbound | F | 102.4 | 0.000 | F | 102.4 | 0.000 | + | 0.000 | D/V |
| # 7 OR 11/7t | h Avenue - Westbound | С | 15.4 | 0.000 | C | 15.4 | 0.000 | + | 0.000 | D/V |
| # 8 OR 11/4 | th Avenue | ·F | 74.5 | 0.000 | F | 74.5 | 0.000 | + | 0.000 | Ď/V |
| # 9 Main Str | eet/OR11/ 2nd Ave | C | 20.6 | 0.456 | С | 20.6 | 0.456 | + | 0.000 | D/V |

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Stopped Del:xxxxx xxxx xxxxx

SharedQueue:xxxxx xxxx xxxxx

LT - LTR - RT

XXXXXX

LOS by Move: Movement:

Shared LOS:

ApproachDei:

ApproachLOS:

Kittelson & Associates, Inc. - Project # 6743 Milton-Freewater STA and TSP Update, Milton-Freewater, OR 2025 Total Traffic Conditions, Weekday PM Peak Hour

Level Of Service Computation Report 200D HCM Unsignalized Method (Base Volume Alternative)

| INTERSECT FOR | PIUR 117 TATE AN | /C ************ | ***** | ***** |
|---------------|------------------|--------------------|-------------------|------------|
| | | | Level Of Service: | |
| Approach: | North Bound | South Bound | East Bound | West Bound |

| Approacn: Movement: | North Bound | South Bound L - T - R | | West Bound |
|-------------------------------|--------------------------------|------------------------------|---------------------------------------|---------------------------|
| | 1 | | L - T - R 1 | |
| Control: Rights: Lanes: | Uncontrolled Include 0 0 0 1 0 | Uncontrolled Include | Stop Sign Include | Stop Sign Channel |
| Maria Salandara | | | | |
| Base Vol: | é: >> Count Date _0 333 6 | : 1 Dec 2004 << 145 339 0 | | 0 0 474 |
| Growth Adi: | 1.32 1.56 1.32 | 1.32 1.56 1.32 | 0 0 0 1.32 1.32 1.32 | 8 0 134 1.32 1.32 1.32 |
| Initial Bse: | | | 0 0 0 | 11 0 177 |
| User Adi: | | | 1.00 1.00 1.00 | 1.00 1.00 1.00 |
| PHF Adj: | 0.71 0.71 0.71 | 0.71 0.71 0.71 | 0.71 0.71 0.71 | 0.71 0.71 0.71 |
| PHF Volume: | | 270 744 0 | 0 0 0 | 15 0 249 |
| Reduct Vol: | 0. 0 0 | 0 0 0 270 744 0 | 0 Q 0 | 0 0 0 |
| Final Vol.: | 0 /31 11 | 270 744 0 | | 15 0 249 |
| Critical Gap | Modulos | | | |
| | | 4.1 xxxx xxxxx x | · · · · · · · · · · · · · · · · · · · | 6.4 xxxx 6.2 |
| | XXXXX XXXX XXXXX | | XXXXX XXXX XXXXX | |
| | | | | |
| Capacity Modu | ὑle: | '' | 1 | 1 |
| Cnflict Vol: | XXXXX XXXX XXXXX | | XXXX XXXX XXXXX | 1647 xxxx 736 |
| | XXXX XXXX XXXXX | | XXXX XXXXX | 109 xxxx 419 |
| | XXXX XXXX XXXXX | | XXXX XXXX XXXXX | 78 xxxx 419 |
| volume/cap: | XXXX XXXX XXXX | 0.31 xxxx xxxx | XXXX XXXX XXXX | 0.19 xxxx 0.59 |
| Level Of Serv | vice Module: | | [] | |
| 4 | XXXXX XXXX XXXXX | 1.3 xxxx xxxxx x | (xxxx xxxx xxxxx | 0.7 xxxx 3.7 |

11.0 xxxx xxxxx xxxxx xxxx xxxx

LT - LTR - RT

XXXXXX

27.5

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LT - LTR - RT

XXXXXX

В

Kittelson & Associates, Inc. - Project # 6743 Milton-Freewater STA and TSP Update, Milton-Freewater, OR 2025 Total Traffic Conditions, Weekday PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection | #2 Main S | treet-OR | 11/ 12th/ | \ve | | | |
|--|--|--|--|----------------------------------|--|---|--|
| Averago Delo | y (sec/veh |): ************************************ | 1.9 Wors | t Case | Level Of | Service: | F[73.7] |
| Approach: Movement: | North B L - T | | South Bo L - T | | East B | | West Bound - T - R |
| Control: Rights: Lanes: | Uncontr Incl 0 1 0 | ude | Uncontro Inclu 0 1 0 | ıde | Stop S Incl 0 0 1! | ude | Stop Sign Include 0 1! 0 0 |
| Volume Modul Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol.: | 1 466 1.32 1.56 | 1.32 1.32 1.00 0.86 2 | 7 Dec 2004 37 482 1.32 1.56 49 751 1.00 1.00 0.86 0.86 57 873 0 0 57 873 | 21 1.32 28 1.00 | 18 3 1.32 1.32 24 4 1.00 1.00 0.86 0.86 28 5 0 0 28 5 | 1.32 1.33 1 1.00 1.00 0.86 0.86 2 0 | 2 2 11 2 1.32 1.32 3 15 0 1.00 1.00 6 0.86 0.86 3 3 17 0 0 0 |
| Critical Gap Critical Gp: FollowUpTim: Capacity Mod Cnflict Vol: Potent Cap.: Move Cap.: Volume/Cap: | 4.1 xxxx 2.2 xxxx | ***** ***** ***** | 4.1 xxxx 2.2 xxxx 846 xxxx 787 xxxx 787 xxxx 0.07 xxxx | XXXXX XXXXX XXXXX XXXXX | 7.5 6.5 3.5 4.0 1429 1851 95 73 84 68 0.33 0.07 | 3.3 3.5 .453 1400 554 100 554 89 | 5 4.0 3.3 |
| Level Of Ser Queue: Stopped Del: LOS by Move: Movement: Shared Cap.: SharedQueue: Shrd StpDel: Shared LOS: ApproachDel: ApproachLOS: | 0.0 xxxx 9.8 xxxx A * LT - LTR xxxx xxxx 0.0 xxxx | XXXXX XXXXX - RT XXXXXX XXXXX XXXXX | 9.9 xxxx A * LT - LTR xxxx xxxx 0.2 xxxx | - RT xxxxx xxxxx xxxxx | XXXXX XXXX * * LT - LTR XXXX 84 XXXXX 1.6 | XXXXX XXXXX - RT LT XXXXX XXXX XXXXX XXXXX XXXXX XXXXX * * | |

Shared LOS:

ApproachDel:

ApproachLOS:

XXXXXX

D

29.1

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 Main Street - OR 11/ 10th Ave

| 。在大多年的美元的文化的工作的,他们们,STEERT "UK. 11/ JUIN AVE | |
|---|---------------|
| Average Dulay (sec/veh): 2.4 Worst Case Level Of Service: F[88. | 3] |
| Approach: North Bound South Bound East Bound West Bound Movement: L - T - R L - T - R L - T - R L - T - | |
| Control: Uncontrolled Uncontrolled Stop Sign Stop Sign Rights: Include Include Include Lanes: 0 1 0 1 0 0 0 1 0 0 0 0 1 0 0 | |
| Growth Adj: 1.32 1.52 1.32 1.32 1.32 1.32 1.32 1.32 1.32 1.3 | 22 00 |
| | 9 |
| Capacity Module: Cnflict Vol: 1036 xxxx xxxxx 929 xxxx xxxxx 1526 1990 518 1473 2003 46 Potent Cap.: 667 xxxx xxxxx 732 xxxx xxxxx 81 60 503 88 59 56 Move Cap.: 667 xxxx xxxxx 732 xxxx xxxxx 72 58 503 82 57 56 Volume/Cap: 0.01 xxxx xxxx 0.02 xxxx xxxx 0.44 0.06 0.01 0.10 0.06 0.01 | 44 |
| Level Of Service Module: Queue: 0.0 xxxx xxxxx 0.0 xxxx xxxxx xxxx xxx | ξχ Γ Κχ |

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Shird StpDel: 10.5 xxxx xxxxx 10.0 xxxx xxxxx xxxxx 88.3 xxxxx xxxxx 29.1 xxxxx

Kittelson & Associates, Inc. - Project # 6743 Milton-Freewater STA and TSP Update, Milton-Freewater, OR 2025 Total Traffic Conditions, Weekday PM Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| | Intersection | #4 Main S | treet - | OR 1 | / 9tl |) Ave | ina didi | in incapation in | | | de de Nodr lins | الدائات تا عاماله |
|---|---|---|---|--|----------------------------|---|--------------------------|--------------------------------|--|-----------------------------------|--------------------------------|---|
| | Average Dela | y (sec/veh |): ******* | 1.3 | Wor | st Cos | Leve | l 0† | | | . E[| 46.71 |
| | Approach: Movement: | North B | | | ith Bo | ound - R | | ast B | | | est Bo | |
| | Control: Rights: Lanes: | Uncontr Incl 0 1 0 | | | ontro Incli 0 | ıde | . 0 (| top S Incli 0 1! | ·0 0 ude | | top S Incli D 1! | ıde |
| • | Volume Module Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol.: | e: >> Coun 1 522 1.32 1.52 1 792 1.00 1.00 0.89 0.89 1 890 0 0 | 1.32 3 1.00 0.89 3 0 | 22 No 31 1.32 41 1.00 0.89 46 0 | 542 1.52 823 1.00 | 14 1.32 18 1.00 0.89 21 0 21 | .9 1.32 12 1.00 | 1 1.32 1 | 5 1.32 7 1.00 0.89 7 0 | 11 1.00 | 1.32 1.00 0.89 1 0 | 11 1.32 15 1.00 0.89 16 0 |
| | Critical Gap Critical Gp: FollowUpTim: | 4.1 xxxx | XXXXX | | | xxxxx xxxxx | 7.5 3.5 | | 6.9 3.3 | 7.5 3.5 | 6.5 4.0 | 6.9 3.3 |
| | Capacity Modu Cnflict Vol: Potent Cap.: Move Cap.: Volume/Cap: | 945 xxxx 722 xxxx 722 xxxx | XXXXX | 755 7 55 | XXXX _. | XXXXX XXXXX XXXXX XXXXX | 88 80 | 1923 66 62 0.02 | 473 538 538 0.01 | 92 85 | 1932 65 61 0.02 | 447 559 559 0,03 |
| | Level Of Serv Queue: Stopped Del: LOS by Moye: Movement: Shared Cap.: SharedQueue: Shrd StpDel: Shared LOS: ApproachDel: ApproachLOS: | 0.0 xxxx 10.0 xxxx A * LT - LTR xxxx xxxx 0.0 xxxx | XXXXX XXXXX - RT XXXXX XXXXX XXXXX | 10.1 B LT - xxxx 0.2 10.1 B | LTR XXXX XXXX | XXXXX XXXXX - RT XXXXX XXXXX XXXXX | LT - | XXXX + LTR 108 0.7 | XXXXX - RT XXXXX XXXXX | XXXXX * LT XXXX XXXXX | LTR 153 0.7 | - RT XXXXX XXXXX XXXXX |

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Main Street-OR11/ Bth Ave

| ********* | - | ****** | ****** | ***** | ******* | ***** |
|---|---|--|---|--|------------------------------|---|
| Average Dela | y (sec/veh): | 4.3 k | orst Case | Level Of S | ervice: | F[162.9] |
| Approach: Movement: | North Bou | R _ L - | Bound T'- R | East Bo | | est Bound - T - R |
| Control: Rights: Lanes: | Uncontrol Include 0 1 0 1 | led Uncor | ntrolled nclude 0 1 0 | Stop Si Inclu 0 0 1! | ide | top Sign Include 0 1! 0 0 |
| Volume Module Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Wolume: Reduct Vol: Final Vol.: | 6 527 1.32 1.52 8 800 1.00 1.00 | 9 13 5 1.32 1.32 1. | 78 43 52 1.32 377 57 00 1.00 81 0.81 183 70 | 24 3 1.32 1.32 32 4 1.00 1.00 0.81 0.81 39 5 0 0 39 5 | 8 4 1.00 1.00 | ō ō |
| Critical Gap Critical Gp: FollowUpTim: | 4.1 xxxx x | 0XXX · 4.1 xX 0XXX · 2.2 xX | XX XXXXX XX XXXXX | 7.5 6.5 3.5 4.0 | 3.3 3.5 | 6.5 6.9 4.0 3.3 |
| Capacity Mode Cnflict Vol: Potent Cap.: Move Cap.: Volume/Cap: | 1153 xxxx xx 602 xxxx xx 602 xxxx xx | (XXX 687 XX (XXX 687 XX | XX XXXXX XX XXXXX XX XXXXX XX XXXX | 1675 2182 62 45 58 43 0.67 0.11 | 577 1601 460 71 460 61 | 2210 501 44 515 41 515 0,04 0.00 |
| Level Of Serv Queue: Stopped Del: LOS by Move: Movement: Shared Cap.: SharedQueue: Shrd StpDel: Shared LOS: ApproachDel: ApproachLOS: | 0.0 xxxx xx 11.1 xxxx xx B * LT - LTR - xxxx xxxx xx 0.0 xxxx xx | XXX 10.4 XX * B RT LT - L XXX XXXX XX XXX 0.1 XX | XX XXXXX > TR - RT XX XXXXX XX XXXXX > XX XXXXX > | LT - LTR xxxx 67 | | - LTR - RT 66 xxxxx 0.4 xxxxx |
| | | | | | | |

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Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #6 OR 11/7th Ave - Eastbound Average Delay (sec/veh): 2.7 Worst Case Level Of Service: Approach: South Bound -Movement: L - T - R L - T - R L - T - R L - T - R ------||------| Control: Uncontrolled Uncontrolled Stop Sign Stop Sign Rights: Include Include Include Include Lanes: 0 1 0 1 0 0 1 0 1 0 0 0 11 0 0 0 0 1! 0 0 Volume Modu(é: Base Vol: Growth Adj: 1.32 1.56 1.32 1.32 1.32 1.32 1.32 1.32 1.32 1.32 1.32 Initial Bse: 8 847 0 · 0 983 26 41 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 PHF Adj: . PHF Volume: 9 985 0 0 1143 31 48 Reduct Vol: 10 n ο. n 0 Λ Final Vol.: 9 985 0 1.143 31 48 Critical Gap Module: Critical Gp: 4.1 xxxx xxxxx xxxxx xxxxx xxxxx 6.8 6.5 6.9 xxxxx xxxx xxxxx FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxxx xxxxx 3.5 4.0 3.3 xxxxx xxxx xxxxx Capacity Module: Cufflict Vol: 1174 xxxx xxxxx xxxxx xxxx xxxxx 1669 2162 Potent Cap.: 591 xxxx xxxxx xxxx xxxx xxxxx 458 xxxx xxxx xxxxx 89 Move Cap.: 591 XXXX XXXXX XXXX XXXX 88 47 458 xxxx xxxx xxxxx Volume/Cap: D.02 xxxx xxxx xxxx xxxx xxxx 0.54 0.10 0.01 XXXX XXXX XXXX -----Level Of Service Module: LOS by Move: B LT - LTR - RT. LT - LTR - RT Movement: LT - LTR - RT Shared Cap:: xxxx xxxxx xxxxx xxxxx xxxxx xxxxx 87 xxxxx xxxx 0 xxxxx SharedQueue: 0.0 xxxx xxxxx Shrd StpDel: 11.2 xxxx xxxxx Shared LOS: В Α . * ApproachDel: XXXXXX XXXXXX 102.4 XXXXXX

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ApproachLOS:

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection #7 OR 11/7th Avenue - Westbound | | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|--|
| Average Delay | / (sec/veh): | 0.2 Worst Cas | e Level Of Service | c[15.4] | | | | | | |
| Approach: Movement: | North Bound L - T - R | South Bound L - T - R | East Bound L - T - R | West Bound L T R | | | | | | |
| Control: Rights: Lanes: | Uncontrolled Include 0 1 0 1 0 | Uncontrolled Include 0 1 0 1 0 | Stop Sign Include | Stop Sign Include 0 0 1! 0 0 | | | | | | |
| Volume Module Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol.: | 0 544 2 1.32 1.56 1.32 0 847 3 1.00 1.00 0.86 0.86 0.86 0 985 3 0 0 0 0 985 3 | 1.32 1.56 1.32 22 983 0 1.00 1.00 1.00 0.86 0.86 0.86 26 1143 0 0 0 0 | 1.32 1.32 1.32 0 0 0 1.00 1.00 1.00 0.86 0.86 0.86 0 0 0 | 1 0 9 1.32 1.32 1.32 1 0 12 1.00 1.00 1.00 0.86 0.86 0.86 2 0 14 0 0 0 2 0 14 | | | | | | |
| FollowUpTim:> | XXXX XXXX XXXX XXXX XXXX XXXX | 988 xxxx xxxxx | | | | | | | | |
| | XXXX XXXX XXXXX | 695 xxxx xxxxx | XXXXX XXXX XXXXX | 94 xxxx 526 0.02 xxxx 0.03 | | | | | | |
| Queue: >> Stopped Del:> LOS by Move: Movement: | XXXXX XXXX XXXXX XXXX XXXX XXXXX LT - LTR - RT XXXX XXXX XXXX | 10.4 xxxx xxxxx B * * LT - LTR - RT | XXXXX XXXX XXXXX XXXXX XXXX XXXX LT - LTR - RT XXXX XXXX XXXX | XXXXX XXXX XXXXX XXXXX XXXX XXXXX LT - LTR - RT XXXX 361 XXXXX | | | | | | |
| SharedQueue: Shrd StpDel: Shared LOS: ApproachDel: ApproachLOS: | 0.0 xxxx xxxxx 9.0 xxxx xxxxx A * * xxxxxx | | ******* ****************************** | | | | | | | |

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Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

| | Intersection #8 OR 11/ 4th Avenue | | | | | | | | | | | |
|---|---|--|------------------------------------|--|-----------------------------|-------------------------------------|--|--------------------------|---|-------------------------------------|-------------------|---|
| | Average Delay | / (sec/veh) |); ******* | 0.6 | | t Case | Level | Of S | ervice | | F[| 74.5] |
| | Approach: Movement: | North Bo | | Sout L - | | - R . | . L - | st Bo | - R | | st Bo T | |
| | Control: Rights: Lanes: | Uncontro Inclu 0 1 0 | ıde | Unce | ontro Inclu | lled ['] de | St | op Si Inclu | gn | | op Si Inclu | de . |
| | Volume Module Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol.: | 4 577 1.32 1.52 5 876 1.00 1.00 0.87 0.87 6 1007 0 0 6 1007 | 1.00 | 1.32 11 1.00 0.87 12 | 1013 1.00 | 1.32 5 1.00 0.87 6 0 | 1.32 5 1.00 0.87 6 0 6 | 1.00 | 1 1.32 1 1.00 0.87 2 0 2 | 1.32 1.00 0.87 2 0 2 | 1.00 | 17 1.32 22 1.00 0.87 26 0 26 |
| ı | Critical Gap Critical Gp: FollowUpTim: | 4.1 xxxx | xxxxx | | | xxxxx xxxxx xxxxx | 7.5 3.5 | 6.5 4.0 | 6.9 3.3 | 7.5 3.5 | 6.5 4.0 | 6.9 3.3 |
| , | Capacity Modi Enflict Vol: Potent Cap.: Move Cap.: | le: 1170 xxxx 593 xxxx 593 xxxx | XXXXX XXXXX XXXXX | 681 x 681 x | (XXX | XXXXX XXXXX XXXXX XXXXX | 1707 60 54 0.11 | 2215 44 43 0.04 | 585 459 459 0.00 | 1628 69 65 0.02 | 44 43 | 506 517 517 0.05 |
| | Level Of Serv Queue: Stopped Del: LOS by Move: Movement: Shared Cap.: SharedQueue: Shrd StpDel: Shared LOS: ApproachDel: ApproachLOS: | 0.0 xxxx 11.1 xxxx B * LT - LTR xxxx xxxx 0.0 xxxx | XXXXX XXXXX - RT XXXXX XXXXX XXXXX | 10.4) B LT :- xxxx > 0.1) 10.4 > B | CXXX LTR CXXX CXXX | XXXXX - RT XXXXX XXXXX | XXXXX * LT - XXXX XXXXX | XXXX LTR 61 0.5 | XXXXX * - RT XXXXX XXXXX | XXXX | LTR 266 0.4 | XXXXX - RT XXXXX XXXXX |
| | | | | | | | | | | | | |

Vol/Sat:

Crit Moves:

Kittelson & Associates, Inc. - Project # 6743 Milton-Freewater STA and TSP Update, Milton-Freewater, OR 2025 Total Traffic Conditions, Weekday PM Peak Hour

Level Of Service Computation Report 2000 HCM Operations Method (Base Volume Alternative)

| · 声音音音音音音音音音声声 | | | **** | 有實施的實行 | | | | **** | 电影演奏演集 | | *** | 海南南大大大 | |
|--------------------------------|--------------|----------------|--------------|----------|-----------------|------------------|--------------------|----------------|---------------|--------------|--------------|---------------|--|
| Intersection | | | | | | /e | **** | **** | na kana | **** | **** | 有限的自治验 | |
| Cycle (sec): | | 100 | | | C | ritica | l Vol. | /Cap. | (X): | | 0.45 | | |
| Loss Time (se Optimal Cycle | 2C): B:: | 3.7 | | = 4 9 | sec) A L | verage evel 0 | : Delay of Serv | /(sec /ice: | /veh): | | 20. | 6 C | |
| 元本自由有限有效有效有效 | *** | **** | | *** | **** | ***** | **** | **** | ***** | **** | **** | *** | |
| Approach: Movement: | Noi L | rth Bo - T | und - R | Sou L | uth Bo - T | ound - R | , L - | | | , L - | st Bo | | |
| Control: Rights: | | ermit Ignor | ted e | 1 | Permit Inclu | ted ' | ' Spi | lit Ph | iase ide | Spi | THEFT | ase ide | |
| Min. Green: Lanes: | 0 | 1 1 | 0 1 | 0 0 | 0 | 1 0 | 0 | 0 | | 0 | 0 1! | 0., | |
| Volume Module Base Vol: | 2: >> 7 | Count 187 | | | | | | 0 | 9 | /91 | 71 | | |
| Growth Adj: | 1.32 | 1.61 | 1.61 | 1.32 | 1.61 | 1.32 | | 1.32 | 1.32 | | | 6 1.32 | |
| Initial Bse: User Adi: | | 301 1.00 | 641 0.00 | 1.00 | 304 1.00 | 1.6 1.00 | | 0 1.00 | 12 1.00 | 775 1.00 | 41 1.00 | 8 1.00 | |
| PHF Adj: | 0.92 | 0.92 | 0.00 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| PHF Volume: Reduct Vol: | | | 0 | 0 | | | | 0 | · 13 | 842 0 | 44 0 | 0 | |
| Reduced Vol: | | 327 1.00 | 0.00 | | 331 1.00 | | 7 | | | | | 4 00 | |
| PCE Adj: MLF Adj: | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 1.00 | 1.00 | 1.00 1.00 | 1.00 1.00 | |
| Final Vol.: | 10 | 327 | | 0 | 331 | 17 | 7 | 0 | . 13 | 842 | 44 | 9 | |
| Saturation F | | | | 1 | | | 1 | | 1 | | | | |
| Sat/Qane: Adjustment: | 1800 0.88 | 1800 0.88 | 1800 1.00 | | 1800 0.92 | 1800 0.92 | | 1800 | 1800 0.88 | 1800 0.93 | | 1800 0.93 | |
| Lanes: | 0.06 | 1.94 | 1.00 | 0.00 | 1.90 | 0.10 | 0.36 | 0.00 | 0.64 | 1.89 | 0.09 | 0.02 | |
| final Sat.: | | 2000 | 1800 | 1 | 3164 | 165 | 265 | 0 | 1017 | 3177 | 158 | 31 | |
| Capacity Anal | (ysis | | | | | 0.40 | | | 0.04 | | 0.70 | 0.00 | |

0.11 0.11 0.00 0.00 0.10 0.10 0.01 0.00 0.01 0.26 0.28 0.28

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Appendix E

2004 Traffic Operations Analysis Worksheets – Three-Lane Option Page 1-1

Thu Jun 2, 2005 14:57:11

Kittelson & Associates, Inc. - Project #6743 Miton-Freewater STA and TSP Update - Milton-Freewater, OR 2004 Three-Lane Traffic Condition, Weekday AM Peak Hour

Scenario Report

Scenario:

AM-3Lane

Command: Volume:

AM-3Lane

Geometry: Impact Fee:

Trip Generation: Trip Distribution:

Default Trip Generation

Paths: Routes:

Configuration:

3-lane Default Impact Fee

Default Trip Distribution Default Paths Default Routes

Default Configuration

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Kittelson & Associates, Inc. - Project #6743 Miton-FreeWater STA and TSP Update - Milton-FreeWater, OR 2004 Three-Lane Traffic Condition, Weekday AM Peak Hour

Impact Analysis Report Level Of Service

| In | tersection | 1.0 | Base Del/ V/ OS Veh C | 10 | Future Del/ V/ OS Veh C | | Change in |
|----|---------------------------------|-----|-----------------------------|----|-------------------------------|-------------|--------------|
| # | 1 OR 11/ 14th Ave | | 20.9 O.DOO | | 2D.9 0.000 | + | 0.000 D/V |
| # | 2 Main Street-OR11/ 12th Ave | E | 38.4 0.000 | E | 38.4 0,000 | + | 0.000 D/Y |
| # | 3 Main Street - OR 11/ 10th Ave | C | 21.4 0.000 | С | 21.4 0.000 | + | 0.000 D/V |
| # | 4 Main Street - OR 11/ 9th Ave | D | 25.2 0.000 | D | 25.2 0.000 | + | 0.000 D/V |
| # | 5 Main Street-OR11/ 8th Ave | D | 29.3 0.000 | .D | 29.3 0.000 | 2. + | 0.000 D/V |
| # | 6 OR 11/7th Ave - Eastbound | E | 36.3 0.000 | Ε | 36.3 0.000 | - + | 0.000 D/V |
| # | 7 OR 11/7th Avenue - Westbound | С | 20.0 0.000 | C | 20.0 0.000 | + | 0.000 D/V |
| # | 8 OR 11/ 4th Avenue | E | 40.1 0.000 | Ę | 40.1 0.000 | + | 0.000 D/V |
| # | 9 Main Street/OR11/ 2nd Ave | С | 21.7 0.417 | С | 21.7 0.417 | + | 0.000 D/V |

LOS by Move: Movement:

Shared LOS: ApproachDel:

ApproachLOS:

LT - LTR - RT

XXXXXX

LT' - LTR - RT

20.9

AM-3Lane

Kittelson & Associates, Inc. - Project #6743 Miton-Freewater STA and TSP Update - Milton-Freewater, OR 2004 Three-Lane Traffic Condition, Weekday AM Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection | #1 OR 11/ | 14th A | | | | ran en | ***** | | ******** | **** |
|--|---|--|--|---|-------------------------------------|--------------|------------------------|---------------------------------|--|---------------------------|
| Average Dela | y (sec/veh) | 2 中世 教教育第4 | 4.6 | | t Case | Leve | of s | Service | : C | 44.00 MAY 14 |
| Approach: Movement: | | 127,33011102 | Sou | ith Bo | ound - R | Ea L | st Bo | ound - R | West L T | |
| Control: Rights: Lanes: | Uncontro Inclu 0 0 0 | de | Unc | ontro Inclu | olled Jde | \$1 | top Si | ign: 1 | Stop Inc 0 0 1 | l ude |
| Volume Modul Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol.: | 0 323 1.00 1.18 0 381 1.00 1.00 0.70 0.70 0 544 0 0 0 | 13 1-00 13 1-00 0.70 19 | 108 1.00 108 1.00 0.70 154 0 | 1.18 306 1.00 0.70 437 0 | 0 1.00 0 1.00 0.70 0 | 1.00 | 0 1.00 0 1.00 | 1.00 0 1.00 0.70 0 | 1.00 1.00 12 1.00 1.00 0.70 0.70 | 0 1.00 0 152 0 1.00 |
| Critical Gap Critical Gp: FollowUpTim: Capacity Mod | xxxxx xxxx xxxxx xxxx | | | | xxxxx xxxxx | | | | 6.4 xxx 3.5 xxx | |
| Cnflict Vot: Potent Cap.: Move Cap.: Volume/Cap: | XXXX XXXX XXXX XXXX XXXX XXXX | XXXXX XXXXX | 1008 | XXXX | XXXXX XXXXX XXXXX XXXX | XXXX XXXX | XXXX XXXX | xxxxx xxxxx xxxxx xxxx | 1299 xxx 180 xxx 159 xxx 0.11 xxx | x 536 x 536 |
| Stopped Del: | XXXX XXXX | XXXXX XXXXX | | | | | | | XXXXX XXX | |

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LT - LTR - RT

LT - LTR - RT

XXXXXX

Kittelson & Associates, Inc. - Project #6743 Miton-Freewater STA and TSP Update - Milton-Freewater, OR 2004 Three-Lane Traffic Condition, Weekday AM Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| | and an important and and and and and | | Service Control | 20.00 SE 20.00 | ಕರ್ನಡಿಸಲಾಗಿ ಸರ್ವಹ್ಯಗಳು | ************************************** | ********* |
|--|---|-------------------------------------|--|--|---|---|--|
| Intersection: | #2 Main S | treet-O | R11/ 12 | th Ave | ****** | ***** | erekararkee |
| Average Delay | (Sec/veh |): | 2.1 | Horst Cas | e Level Of | Service: | E[38.4] |
| Approach: Movement: | North B | | , L - | h Bound T - R | East B L - Y | - R L | Vest Bound |
| Control: Rights: Lanes: | Uncontro Incl 1 0 0 | ude | Unco | ntrolled nclude 0 1 0 | Stop S Incl 0 0 1! | ign '' (ude | Stop Sign Include 0 1!00 |
| Initial Bse: User Adj: | : >> Coun 4 450 1 00 1 18 4 531 1 00 1 00 0 80 0 80 5 664 0 0 5 664 | 1.00 2 1.00 0.80 3 0 | 10 1 1.00 1 10 4 1.00 1 0.80 0 | 358 7 .18 1.00 422 7 .00 1.00 .80 0.80 | 1.00 1.00 36 2 1.00 1.00 0.80 0.80 45 3 | 1.00 1.00 6 3 1.00 1.00 0.80 0.80 8 4 | 3 1 15 0 1.00 1.00 3 1 15 0 1.00 1.00 0 0.80 0.80 4 1 19 0 0 0 4 1 19 |
| Critical Gap Critical Gp: FollowUpTim: | 4.1 xxxx | | | XXX XXXXX XXX XXXXX | | | |
| | 537 xxxx | XXXXX | 923 x 923 x | KXX XXXX KXX XXXX KXX XXXX KXX XXXX | 153 178 144 175 | 551 154 551 148 | |
| Level Of Serv Queue: Stopped Del: LOS by Move: | | XXXXX | | | | | C XXXX XXXXX |
| Movement: Shared Cap:: SharedQueUe:x Shrd StpDel:x Shared LOS: ApproachDel: ApproachLOS: | XXXX XXXX | XXXXX XXXXX | XXXX XX XXXXX XX XXXXX XX | ** xxx*x | xxxx 161 xxxxx 1.4 | XXXXX XXXX | 0.2 xxxxx |

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Page 2 of

Shared LOS:

ApproachDet:

ApproachLOS:

XXXXXX

В

В

14.8

Kittelson & Associates, Inc. - Project #6743 Freewater STA and TSP Update - Milton-Freewater, OR

Miton-Freewater STA and TSP Update - Milton-Freewater, OR 2004 Three-Lane Traffic Condition, Weekday AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 Main Street - OR 11/ 10th Ave

| 不可可用不可以有效的大大大工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工 | 有有其有其实有其是其实有主要有有效自由自由自由的最后自由的自由自由 | 法清赦的政策的关系自由的自由由由 |
|--|--|-------------------------|
| Average Delay (sec/veh): | 0.5 Worst Case Level Of Service: | C[21.4] |
| Approach: North Bound | South Bound East Bound | West Bound |
| Movement: L - T - R | L - T - R L - T - R | L - T - R |
| | 1 | [|
| Control: Uncontrolled | Uncontrolled Stop Sign | Stop Sign |
| Rights: Include | Include Include | . Include |
| Lanes: 1 0 0 1 0 | 1 0 0 1 0 0 0 1 0 0 | 0 0 1! 0 0 |
| | [| [- |
| Volume Module: >> Count Date: | '18 Nov 2004 << '' | |
| Base Vol: 5 495 1 | 4 369 8 7 1 5 | 1 1 11 |
| Growth Adj: 1.00 1.15 1.00 | 1.00 1.15 1.00 1.00 1.00 1.00 | 1.00 1.00 1.00 |
| Initial Bse: 5 569 1 | 4 424 8 7 1 5 | 1 1 11 |
| User Adj: 1.00 1.00 1.00 | | 1.00 1.00 1.00 |
| PHF Adj: 0.88 0.88 0.88 | | 0.88 0.88 0.88 |
| PMF Volume: 6 647 1 | 5 482 9 8 1 6 | 1 1 13 |
| Reduct Vol: 0 0 0 | | 0 0 0 |
| Final Vol.: 6 647 1 | 5 482 9 8 1 6 | 1 1 13 |
| Critical Con Medules | | |
| Critical Gap Module: Critical Gp: 4.1 xxxx xxxxx | / 1 7.1 / 5 / 3 | 74:45 45 |
| FollowUpTim: 2.2 xxxx xxxxx | 4.1 xxxx xxxxx 7.1 6.5 6.2 2.2 xxxx xxxxx 3.5 4.0 3.3 | 7.1 6.5 6.2 |
| | 2.2 xxxx xxxxx 3.5 4.0 3.3 | 3.5 4.0 3.3 |
| Capacity Module: | 1 | |
| Conflict Vol: 491 xxxx xxxxx | 648 xxxx xxxxx 1161 1155 487 | 1158 1159 647 |
| Potent Cap.: 1072 xxxx xxxxx | 938 xxxx xxxxx 174 198 585 | 175 197 474 |
| Move Cap.: 1072 xxxx xxxxx | 938 xxxx xxxxx 167 196 585 | 171 195 474 |
| Volume/Cap: 0.01 xxxx xxxx | | 0.01 0.01 0.03 |
| | | |
| Level Of Service Module: | 1 11 11 | |
| Queue: 0.0 xxxx xxxxx | 0.0 xxxx xxxxx xxxxx xxxx xxxx x | XXXX XXXX XXXXX |
| Stopped Del: 8.4 xxxx xxxxx | 8.9 XXXX XXXXX XXXXX XXXX XXXXX X | XXXX XXXX XXXX |
| LOS by Move: A * * | A * * * * * | * * * |
| Movement: LT - LTR - RT | LT - LTR - RT LT - LTR - RT - | LT - LTR - RT |
| Shared Cap.: xxxx xxxx xxxxx | | xxxx 381 xxxxx |
| SharedQueue:xxxxx xxxx xxxxx | | |
| Shed Stonal every year years | 99799 Yuub Yuuby Dubay 31 / Yaaaa a | |

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Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxxx xxxxx 21.4 xxxxx xxxxx 14.8 xxxxx

XXXXXX

Kittelson & Associates, Inc. - Project #6743 Miton-Freewater STA and ISP Update - Milton-Freewater, OR 2004 Three-Lane Traffic Condition, Weekday AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection | #4 M | ain S | treet | - OR 1 | 1/ 9t **** | h Ave | | **** | *** | **** | RÁFFE | ****** |
|---|------------------------------|--------------------|------------------------|--|---|--|----------------------------|----------------------------|-------------------------------------|--------------------------------|----------------------------|---------------------------------|
| Average Dela | y (se | c/veh |); ****** | 0.8 | Wor | st Cas | e Leve | i Of | Servic | e: | D [| 25.21 |
| Approach: Movement: | No | rth Bo | | So | uth B | | L | ast B | ound R | W | est B - T | |
| Control: Rights: Canes: | _ | Incli | olled ude 10 | | Incl | olled ude 10 | '' s | top S Incl | ign ude 00. | | top S Incl 0 1: | ign ude 0 0 |
| Volume Modul Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol: | 1.00 1.00 0.91 1 | 508 1,22 620 | 5 1.00 5 1.00 | 15 1-00 15 1-00 0-91 16 | 371 1.22 453 1.00 0.91 497 | 19 1.00 19 1.00 0.91 21 | 1.00 1.00 11 1.00 | 1.00 1.00 | 6 1.00 6 1.00 0.91 7 | 1.00 4 1.00 0.91 4 | 1.00 1.00 0.91 | 13 1.00 0.91 14 0 |
| Critical Gap Critical Gp: FollowUpTim: | 4.1 | XXXX | xxxxx xxxxx | | | xxxxx xxxxx | 7.1 3.5 | 6.5 4.0 | | | | |
| Capacity Mod Cnflict Vol: Potent Cap.: Move Cap.: Volume/Cap: | 518 1048 1048 | XXXX XXXX | | 907 907 | XXXX XXXX | XXXX XXXXX XXXXX | 155 147 | 1230 179 176 0.01 | 508 569 569 0.01 | 156 151 | 1237 177 174 0.01 | 452 |
| Level Of Ser Queue: Stopped Del: LOS by Move: | 0.0 | XXXX | XXXXX XXXXX | 0.1 9.0 A | XXXX XXXX | xxxxx * | XXXXX XXXXX | xxxx xxxx | XXXXX XXXXX | XXXXX XXXXX | XXXX XXXX | XXXXX XXXXX |
| Movement: Shared Cap: SharedQueue: Shrd StpDel: Shared LUS: ApproachDel: ApproachLOS: | LT XXXX XXXXX XXXXX | XXXX | XXXXX | LT XXXX XXXXX XXXXX | XXXX | XXXXX XXXXX XXXXX | XXXX XXXXX | 0.3 | XXXXX XXXXX | XXXX XXXXX | 295 0.2 | - RT XXXXX XXXXX XXXXX |

AM-3Lane

LOS by Move: A

XXXXXX

Shared LOS:

ApproachDel:

ApproachLOS:

Kittelson & Associates, Inc. - Project #6743 Miton-Freewater STA and TSP Update - Milton-Freewater, OR 2004 Three-Lane Traffic Condition, Weekday AM Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Main Street-OR117 8th Ave. **李清本東大市大大市市市市市市市市市市市市市市大市市市市市市市市市市市高兴省省区省省省省省省省省省省省省省省省省省省省省省**

0

| Average Oela | y (sec/veh): | 1.3 Worst Case | Level Of Service | D[29.3] |
|------------------------|--------------|--------------------------|---------------------|-------------------------|
| Approach: Movement: | North Bound | South Bound L - T - R | East Bound L T R | West Bound L - T - R |
| Control: | Uncontrolled | | Stop Sign | Stop Sign |

Rights: Include Include Include Include 1 0 0 1 0 1 0 0 1 0 0 0 1 0 0 Lanes: 0 0 11 0 0 Volume Module: >> Count Date: 29 Nov 2004 << 8 522 2 3 392 1.00 1.00 1.15 1.00 Growth Adj: 1.00 1.15 1.00 1.00 1.00 1.00 1.00 1.00 Initial Bse: 8 600 3 451 15 25 11 User Adi: PHF Adi: 3 512 PHF Volume: 9 682 2 . 17 28 13

Reduct Vol: Q. 0 Final Vol.: 9 682 3 512 17 28 13 Critical Gap Module: Critical Gp: 4.1 xxxx xxxxx 4.1 xxxx xxxxx 7.1 6.5 6.2 7.1 6.5 6.2 FollowUpTim: 2.2 xxxx xxxxx 2.2 xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3

Capacity Module: Cnflict Vol: 529 xxxx xxxxx 684 xxxx xxxxx 1236 1230 1236 1238 Potent Cap.: 1038 xxxx xxxxx 909 xxxx xxxxx 154 179 560. 154 177 453 Move Cap.: 1038 xxxx xxxxx 909 xxxx xxxxx 147 177 560 149 175 453 Volume/Cap: 0.01 xxxx xxxx 0.00 xxxx xxxx 0.19 0.01 0.02 0.02 0.01 0.03

Level Of Service Module: Queue: 0.0 xxxx xxxxx XXXXX XXXX XXXXX; XXXXX XXXX XXXXX XXXXX 0.0 Stopped Oel: 8.5 xxxx xxxxx LOS by Move: A

Movement: SharedQueue;xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.8 xxxxx xxxxx 0.2 xxxxx Shrd StpDel:xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 29.3 xxxxx xxxxx 16.6 xxxxx

Shared LOS: n C ApproachDel: XXXXXX XXXXXX 29.3 . 16.6 ApproachLOS:

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Kittelson & Associates, Inc. - Project #6743 Miton-Freewater STA and TSP Update - Milton-Freewater, OR 2004 Three-Lane Traffic Condition, Weekday AM Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #6 OR 11/7th Ave - Eastbound Average Delay (sec/veh): 0.3 Worst Case Level Of Service: Approach: North Bound South Bound East Bound West Bound Movement: L - T - R L - T - R L - T - R L - T - R ______ Uncontrolled Uncontrolled Control: Stop Sign Stop Sign Rights: Include Include I no lude Include 1 0 0 1 0 Lanes: 10010 0 0 1! 0 0 0 0 1! 0 0 Volume Module: Base Vol: .556 0 408 Growth Adj: 1.00 1.18 1.00 1.00 1.18 1.00 1.00 1.00 1.00 1.00 1.00 1.00 Initial Bse: 2 656 0 0 481 13 Ω User Adi: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 PHF Adi: PHF Volume: 3 937 . 0 0 688 . 19 10 Reduct Vol: n n 0 0 0 0 0 Final Vol.: 3 937 0 0 688 19 10 Critical Gap Module: Critical Gp: 4.1 xxxx xxxxx xxxxx xxxxx xxxxx 6.4 6.5 6.2 xxxxx xxxxx xxxxx FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxxx xxxxx 3.5 4.0 3.3 xxxxx xxxx xxxx xxxxx Capacity Module: Cufflict Vol: 706 xxxx xxxxx xxxxx xxxx xxxxx 1640 1640 - 697 xxxx xxxx xxxxx Potent Cap.: 892 xxxx xxxxx xxxx xxxx xxxx 111 101 444 XXXX XXXX XXXXX Move Cap.: 892 xxxx xxxxx xxxx xxxx xxxx 111 101 444 xxxx xxxx xxxxx Volume/Cap: 0.00 xxxx xxxx xxxx xxxx xxxx 0.09 0.01 0.01 xxxx xxxx xxxx Level Of Service Module: Queue:

XXXXXX

LT ~ LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT

Εï

XXXXXX

36.3

ApproachDel:

ApproachLOS:

XXXXXX

20.0

С

AM-3Lane

Kittelson & Associates, Inc. - Project #6743 Miton-Freewater STA and TSP Update - Milton-Freewater, OR 2004 Three-Lane Traffic Condition, Weekday AM Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| | Intersection | #7 OR 11 | /7th Av | | 関連を表現 Westi | | 中国产业 | *** | 的基準的主義 | **** | ******** | (in in |
|-----|---|--------------------------------------|-------------------------|--------------------|----------------------------|------------------------|-------------|-------------------|-------------------|--------------------|----------------------------|---------|
| 2 | ********** Average Dela | ***** | 声道声音声音音 | ###### 0.4 | | *** | A ROMA A | | **** | ****** | *** | i xx |
| | AREXERSTANCE | PRESERVE | UIZ4 大量有效可有表 | THEFT. | WOL | erant | e Leve | TO I | ****** | e: Parkare | C[20.0 | |
| | Approach: Movement: | North L - 1 | | | uth Bo - T | | | ast B | ound - R | | : Bound T - R | ₹ . |
| | Control: Rights: Lanes: | Ind | rolled lude 1 1 0 | | contro Incli 0 0 | ude | | top S Incli | | In | Sign - nclude 1! 0 0 |) |
| 4 | Volume Module | e: | | 11 | | | [] | | | 11 | | - 1 |
| | Base Vol: Growth Adj: Initial Bse: User Adi: | 0 55 1.00 1.1 0 65 1.00 1.0 | 8 1.00 | 7 | 408 1.18 481 1.00 | 0 1.00 0 1.00 | Ó | 1.00 0 1.00 | 0 | 1.00 1. | 00 1 0 | 16 |
| | PHF Adi: PHF Volume: Reduct Vol: | 0.70 0.7 | 0.70 | | 0.70 688 | 0.70 0.70 | | 0.70 | 1.00 0.70 0 | | 70 0.7 0 2 | |
| 2 | Final Vol.: | 0 93 | 7 1 | , 10 | 688 | Ŏ | , ŏ | | Ŏ | , š | | 23 ု |
| | Critical Gap | Module: | | 11 | | ;= | | | | [| | - |
| | Critical Gp:: FollowUpTim:: | XXXXX XXX XXXXX XXX | x xxxxx x xxxxx | 4.1 2.2 | | | XXXXX | | | 6.4 xx 3.5 xx | | |
| | Capacity Mode | | | 11. | | | 11 | | | 11 | | -1 |
| . | Cnflict Vol: Potent Cap.: | XXXX XXX | X XXXXX | 730 | XXXX | XXXXX | XXXX | | XXXXX | 111 xx | xx 32 | 23 |
| | Move Cap.: Volume/Cap: | | | | XXXX | XXXXX | | XXXX | XXXXX | 109 xx 0.03 xx | | |
| | Level Of Serv | vice Modu | le: | | | | | | | | | -[|
| . ! | | KXXX XXX | X XXXXX | | | | | | | xxxxx xx ****** | | |
| | Movement: Shared Cap.: | LT - LT | | | LTR | | | LTR | | | TR - RT | |
| : | SharedQueue:> | XXXX XXX | XXXXX X | XXXXX | XXXX | XXXXX | XXXX | XXXX | XXXXX | xxxxx 0 | 66 xxxx .3 xxxx | x |
| | Shrd StpDel:> Shared LOS: | (XXXX XXX * | x xxxxx * | xxx _x x | xxxx * | XXXXX | XXXXX | XXXX | xxxxx | xxxxx 20 | .0 xxxx C * | х |

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Kittelson & Associates, Inc. - Project #6743 Miton-Freewater STA and TSP Update - Milton-Freewater, OR 2004 Three-Lane Traffic Condition, Weekday AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Chase Voltage Alternative)

| Intersection | #8 OR 11/ 4th / | vehue | ***** | Markan kan sanan kan | |
|--|---|--|--|--|--|
| Average Oela | y (sec/veh): | 0.5 Wors | st Case Leve | l Of Service | e: E[40.1] |
| Approach: Movement: | North Bound | South Bo | ound E | ast Bound - T - R | West Bound L - T - R |
| Control: Rights: Lanes: | Uncontrolled Include 1 0 0 1 0 | Uncontro Inclu 1 0 0 | ude | top Sign Include 0 1! 0 0 | Stop Sign Include 0 0 1! 0 0 |
| Volume Modul Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol.: | 3 576 1 1.00 1.15 1.00 3 662 1 1.00 1.00 1.00 0.78 0.78 0.78 4 849 1 | 5 490 1.00 1.00 0.78 0.78 6 628 0 0 | 1 5 1.00 1.00 | 1.00 1.00 1 1 1.00 1.00 0.78 0.78 1 1 0 0 | 1 1 10 1.00 1.00 1.00 1 1 10 1.00 1.00 1 |
| Critical Gap Critical Gp: FollowUpTim: | 4.1 xxxx xxxxx | | | | 7.1 6.5 6.2 3.5 4.0 3.3 |
| Potent Cap.: | 629 xxxx xxxxx | 788 xxxx 788 xxxx | XXXXX 100 XXXXX 95 | | 1500 1500 850 101 123 363 99 122 363 0.01 0.01 0.04 |
| Stopped Del: LOS by Move: Movement: Shared Cap.: SharedQueue: | 0.0 xxxx xxxxx 8.8 xxxx xxxxx A * LT - LTR - RT xxxx xxxx xxxx xxxx xxxx xxxx | 9.6 xxxx A * LT - LTR xxxx xxxx xxxxx xxxx | XXXXX XXXXX - RT LT XXXXX XXXX XXXXX XXXX | - LTR - RT 112 xxxxx 0.3 xxxxx | XXXXX XXXX XXXXX XXXXX XXXX XXXX LT - LTR - RT XXXX 262 XXXXX XXXXX 0.2 XXXXX XXXXX 19.6 XXXXX 19.6 C |

Level Of Service Computation Report 2000 HCM Operations Method (Base Volume Alternativ

| 2000 HCM Operations Method (Base Volume Alternative) |
|---|
| Intersection #9 Main Street/OR11/ 2nd Ave |
| Cycle (sec): 100 Critical Vol./Cap. (X): 0.417 Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 21.7 Optimal Cycle: 36 C C |
| Approach: North Bound South Bound East Bound West Bound Movement: L - T - R L - T - R L - T - R |
| Control: Permitted Permitted Split Phase Split Phase Rights: Ignore Include Include Include Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |
| Volume Module: >> Count Date: 30 Nov 2004 << |
| Saturation Flow Module: Sat/Lane: 1800 1800 1800 1800 1800 1800 1800 180 |
| Capacity Analysis Module: Vol/Sat: 0.14 0.14 0.00 0.00 0.12 0.12 0.01 0.00 0.01 0.21 0.01 0.0 |

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Scenario Report

Scenario:

PM-3Lane

Command: Volume: PM-3Lane

Geometry: Impact Fee: Trip Generation

Trip Generation: | Trip Distribution: |

Paths: Routes: Configuration: PM 3-lane Default

Default Impact Fee
Default Trip Generation
Default Trip Distribution
Default Paths

Default Routes

Default Configuration

Kittelson & Associates, Inc. Project # 6743
Milton-Freewater STP and TSP Update Plan, Milton-Freewater, OR
2004 Three-Lane Traffic Condition, Weekday PM Peak Hour

Impact Analysis Report

PM-3Lane

Impact Analysis Report Level Of Service

| Į In | tersection | | Base Del/ V/ S Veh C | | Future Del/ V/ | | Chang : in | ge |
|------|---------------------------------|---|----------------------------|---|----------------|----|---------------|-------|
| # | 1 OR 11/ 14th Ave | | 19.9 0.000 | | 19.9 0.000 | + | 0.000 | D/V |
| # | 2 Main Street-OR11/ 12th Ave | Ę | 44.8 0.000 | E | 44.8 0.000 | ^+ | 0.000 | D/V |
| # | 3 Main Street - OR 11/ 10th Ave | F | 52,4 0.000 | F | 52.4 0.000 | + | 0.000 | D/V |
| # | 4 Main Street - OR 11/ 9th Ave | D | 34.6 0.000 | D | 34.6 0.000 | + | 0.000 | 0/V |
| # | 5 Main Street-OR11/ 8th Ave | F | 7 2.1 0.000 | F | 72.1 0.000 | + | 0.000 | D/V |
| # | 6 OR 11/7th Ave - Eastbound | F | 53.0 0.000 | F | 53.0 0.D00 | + | 0.000 | 0/V |
| # | 7 OR 11/7th Avenue - Westbound | С | 16.6 0.000 | С | 16.6 0.000 | + | 0.000 | D/V·, |
| # | 8 OR 11/ 4th Avenue | F | 51.1 0.000 | F | 51.1 0.000 | + | 0.000 | D/V |
| # | 9 Main Street/OR11/ 2nd Ave | С | 23.5 0.615 | С | 23.5 0.615 | + | 0.000 | D/V |

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XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX 8.0

LT - LTR - RT

XXXXXX

19.9

Kittelson & Associates, Inc. Project # 6743 Milton-Freewater STP and TSP Update Plan, Milton-Freewater, OR 2004 Three-Lane Traffic Condition, Weekday PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Bage Volume Alternative)

| Intersection | #1 OR 11/ 14th | \ve *********** | ***** | ****** |
|---|---|--|--|---|
| Average Deta | | 3.9 Worst Case | Level Of Service | : C[19.9] |
| Approach: Movement: | North Bound L - T - R | South Bound | | West Bound L T - R |
| Control: Rights: Lanes: | Uncontrolled Include 0 0 0 1 0 | Uncontrolled Include 1 0 1 0 0 | Include | |
| Volume Module Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol.: | 0 333 6 1.00 1.18 1.00 0 393 6 1.00 1.00 1.00 0.71 0.71 0.71 0 553 8 0 0 0 0 553 8 | 11 Dec 2004 << 145 339 0 1.00 1.18 1.00 145 400 0 1.00 1.00 1.00 0.71 0.71 0.71 204 563 0 204 563 0 | 0 0 0 0 0 1.00 1.00 0 0 1.00 1.00 1.00 | |
| | | 4.1 xxxx xxxxx 2.2 xxxx xxxxx 1 | | 6.4 xxxx 6.2 3.5 xxxx 3.3 |
| Potent Cap.: Move Cap.: | XXXX XXXX XXXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX | 562 XXXX XXXXX 1009 XXXX XXXXX 1009 XXXX XXXXX 0.20 XXXX XXXX | , | 1530 xxxx 558 130 xxxx 533 110 xxxx 533 0.10 xxxx 0.35 |

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LT - LTR - RT

XXXXXX

XXXXX XXXX XXXXX

LT - LTR - RT

XXXXXX

Stopped Del:xxxxx xxxx xxxxx

LOS by Move:

Shared LOS: ApproachDel:

ApproachLOS:

Kittelson & Associates, Inc. Project # 6743 Milton-Freewater STP and TSP Update Plan, Milton-Freewater, OR 2004 Three-Lane Traffic Condition, Weekday PM Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection A | 2 Main S | reet-OR | 11/ 1 | 2th A | V6 | Andring | ee ee | ***** | ***** | *** | **** |
|---|---|--|--|-----------------------------|---|---|--------------------------------|---------------------------------|--|---|---|
| Average Delay | (sec/veh |): (******** | 1.3 | Wors | 1 Case | Level | Of S | ervice | | ΕĮ | 44.8] |
| Approach: Movement: | North Bo L T | - •R | L - | th Bo | | L - | st Bo T | | | st Bo T | |
| Control: Rights: Lanes: | Uncontro Incli 1 0 0 | ide | | ontro Inclu 0 | ıde | : St | op Si Inclu | gn ide | | op Si Incli 1 1! | ıde |
| Initial Bse: User Adj: ' | : >> Coun 1 466 1.00 1.18 1 550 1.00 1.00 0.86 0.86 1 639 0 0 1 639 | 1 1.00 1 1.00 | 7 Dec 37 1.00 37 1.00 0.86 43 0 43 | 482 1.18 569 1.00 | 21 1.00 21 1.00 0.86 24 0 24 | 18 1.00 18 1.00 0.86 21 0 | 1.00 | 1 1 00 1 1 00 0 86 1 0 | 1.00 2 1.00 2 1.00 0.86 2 0 | 1.00 | 11 1.00 11 1.00 0.86 13 0 13 |
| Critical Gap's Critical Gp: FollowUpTim: | | | | | XXXXX XXXXX | 7.1 3.5 | 6.5 4.0 | 6.2 3.3 | 7.1 3.5 | 6.5 4.0 | 6.2 3.3 |
| Capacity Modul Cnflict Vol: Potent Cap.: Move Cap.: Volume/Cap: (| le: 686 xxxx 908 xxxx 908 xxxx 0.00 xxxx | XXXXX | 944 944 | XXXX XXXX | XXXXX XXXXX XXXXX XXXX | 1409 117 109 0.19 | 1402 141 135 0.03 | 674 458 458 0.00 | 1404 118 111 0.02 | 139 132 | 640 479 479 0.03 |
| Level Of Serviqueue: Stopped Del: LOS by Move: Movement: Shared Cap.: SharedQueue:x Shrd StpDel:x Shared LOS: ApproachDel: ApproachLOS: | 0.0 xxxx 9.0 xxxx A. * LT - LTR xxxx xxxx | XXXXX XXXXX - RT XXXXX XXXXX | 9.0 LT - XXXX XXXX XXXX | XXXX LTR XXXX XXXX | XXXXX * - RT XXXXX XXXXX | LT - | **** * LTR 116 0.8 | XXXXX - RT XXXXX XXXXX | XXXXX XXXXX LT XXXX XXXXX XXXXX | ***** ******************************** | XXXXX - RT XXXXX XXXXX XXXXX |

Intersection #4 Main Street - OR 11/ 9th Ave

Kittelson & Associates, Inc. Project # 6743 Milton-Freewater STP and TSP Update Plan, Milton-Freewater, OR 2004 Three-Lane Traffic Condition, Weekday PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection | #3 Main | Street - | OR 11. | / 10th | Ave |
|---|--|----------------------------|-----------------|------------------------|-----|
| هرمناها بدركاريه بالمراجر أورجرا والمراجر | بالترجيب بالمستحث بالمحارضة بالمواسعة أب | والمحاجب بمناكم بمأخذ بقدم | a a securitarió | acta has referred to a | |

| | And the control of th | |
|--|--|----------------|
| BANG AND | 1.6 Worst Case Level Of Service: | |
| KVCIEGO DOLAV 1 SOCIVORIE | 1 A MODST Mace Level Of Service: | E F 50 / 1 |
| | THE TAX PER PROPERTY OF THE PR | 5 L J C + 95 J |
| | | |

| Average Delay | / (sec/ve | 11): ******* | 1.6 | WOL | St Cas | e Leve | l of | Servic | e: | F [| 52.4] | |
|---|------------------------------|---------------------------------------|----------------|---------------------|--------------------|---------------------|-------------------|-------------------|---------------|-------------------|-------------------|---|
| Approach: Movement: | North L - T | | | uth Bi | | | ast B | ound R | | est Bo | | , |
| Control: Rights: Lames: | Inc | rolled lude 1 0 | | contro Incl | ude | | top S | uďe | | top S Incli | ude | |
| Volume Module | e: >> Cou | nt Oate | 18 No | ov 200 | 04 << | |) 1 <u>!</u> | -, | | 0 1! | | |
| Base Vol: Growth Adj: Initial Bse: | 5 48 1.00 1.1 5 56 | 5 1.00 | 7 1.00 7 | 531 1.15 611 | 17 1.00 17 | 19 1.00 19 | 1.00 | 1.00 4 | | 1.00 | 1.00 1.7 | |
| User Adj: PHF Adj: PHF Volume: | 1.00 1.0 0.80 0.8 6 70 | 0 0.80 | | 1.00 0.80 763 | 1.00 0.80 21 | 1.00 0.80 24 | 1.00 0.80 3 | 1.00 0.80 5 | | 1.00 0.80 3 | 1.00 0.80 | |
| Reduct Vol: Final Vol: | 0 6 70 | 0 0 1 3 | 0 9 | 0 763 | 0 21 | 0 24 | 0 3 | 0 5 | 0 6 ! ! | 0 3 | Ö | |
| Critical Gap' Critical Gp: FollowUpTim: | 4.1 xxx | | | | XXXXX XXXXX | 7.1 3.5 | | 6.2 3.3 | 7.1 3.5 | | 6.2 3.3 | |
| Capacity Modu Cnflict Vol: | le: 785 xxx | · · · · · · · · · · · · · · · · · · · | 70/ | | ×xxxx | 1510 | 1500 | 774 | 1510 | 1517 | 707 | |
| Potent Cap.: Move Cap.: | 834 xxx 834 xxx | X XXXXX | 894 894 | XXXX XXXX | XXXXX XXXXX | 98 91 | 122 120 | 402 402 | 100 96 | 118 | 441 441 | |
| Level Of Serv | | le: | | XXXX | **** | | 0.02 | 0.01 | | 0.02 | 0.05 | |
| Queue: Stopped Del: LOS by Move: | 0.0 xxx 9.3 xxx A * | | | | XXXXX * | | | | | | | |
| Movement: Shared Cap.: | LT - LTI | XXXXXX | LT - | | XXXXX | XXXX | | XXXXX | XXXX | | XXXXX | |
| SharedQueue:x Shrd StpDel:x Shared LOS: | (XXXX · XXX | x xxx x x | XXXXX | xxxx * | ***** | XXXXX XXXXX * | 52.4 F | XXXXX | XXXXX * | 23.7 C | xxxxx * | |
| ApproachDel: ApproachLOS: | XXXXX | | XX | XXXX * | | | 52.4 F | | | 23.7 C | | |

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Kittelson & Associates, Inc. Project # 6743 Milton-Freewater STP and TSP Update Plan, Milton-Freewater, OR 2004 Three-Lane Traffic Condition, Weekday PM Peak Hour

Thu Jun 2, 2005 14:56:41

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

| 中自由政治宣言的共享共同共和共和共和共政治安全宣言的政治 | ***** | 美国自治的美国企业的主义企业主义企业的企业企业企业企业企业企业 | 自然资本资本方式企业 |
|------------------------------|-------|--|-------------------|
| Average Delay (sec/veh): | 1.0 | Worst Case Level Of Service: | D[34.6] |

| 中央和政治宣言的共产产 | 有克洛克产业的 电电子电阻 电电子 | ***** | 《新西南日》《西西海流》《西南 南 | 《多年的主义中国的主义中央中央的主义中央主义中央 |
|---|--|---|---|--|
| Average Dela | y (sec/veh): | 1.0 Worst'(| Case Level Of | Service: D[34.6] |
| Approach: Movement: | North Bound L :- T - R, | South Bound L - T - | | |
| Control: Rights: Lanes: | Uncontrolled Include 1 0 0 1 0 | Uncontrolle Include 1 0 0 1 | Incli | ude : Include |
| Volume Module Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol.: | e: >> Count Date | 31 542 1.00 1.15 1 31 623 1.00 1.00 1. 0.89 0.89 0. 35 700 0 0 | 14 9 1 .00 1.00 1.00 14 9 1 .00 1.00 1.00 .89 0.89 0.89 16 10 1 0 0 0 | 5 8 1 11 1.00 1.00 1.00 1.00 5 8 1 11 1.00 1.00 1.00 1.00 0.89 0.89 0.89 0.89 6 9 1 12 0 0 0 0 6 9 1 12 |
| Critical Gap Critical Gp: FollowUpTim: | 4.1 xxxx xxxxx | | | |
| Capacity Mode Cnflict Vol: Potent Cap.: Move Cap.: Volume/Cap: | 716 xxxx xxxxx 885 xxxx xxxxx 885 xxxx xxxx | 915 XXXX XXX 915 XXXX XXX | XX 1.08 131 | 708 1459 1464 676 438 108 130 457 438 103 125 457 0.01 0.09 0.01 0.03 |
| SharedQueue:; Shrd StpDel:; Shared LOS: | 0.0 xxxx xxxxx 9.1 xxxx xxxxx A * * LT - LTR - RT xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxx xxxx xxxx xxxx | 9.1 xxxx xxx A * LT - LTR - R xxxx xxxx xxx xxxxx xxxx xxx xxxxx xxxx xxx * | XX XXXX XXXX * | xxxxx xxxx 182 xxxxx xxxxx xxxxx 0.4 xxxxx xxxxx xxxxx 27.5 xxxxx |
| ApproachOel: ApproachLOS: | xxxxxx . | xxxxx * | 34.6 D | 27.5 0 |

PHF Adj:

PHF Volume:

ApproachDel:

ApproachLOS:

0.81 0.81 0.81 0.81

46.4

Kittelson & Associates, Inc. Project # 6743 Milton-Freewater STP and TSP Update Plan, Milton-Freewater, OR 2004 Three-Lane Traffic Condition, Weekday PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Main Street-OR11/ 8th Ave Average Delay (sec/veh): **《表示其言用为有关可以有为有其实有的有关的有效的企业的有效的有效的有效的的,** Approach: North Bound South Bound East Bound Movement: L - T - R ·L - T - R L - T - R L - T - R ------Control: Uncontrolled Uncontrolled Stop Sign Stop Sign Rights: Include Include Include Include Lanes: 1 0 0 1 0 1 0 0 1 0 0 0 1! 0 0 0 0 1! 0 0 ------Volume Module: >> Count Date: 29 Nov 2004 << 6 527 13 578 1.00 1.00 1.15 1.00 Growth Adj: 1.00 1.15 1.00 1.00 1.00 1.00 1.00 1.00 Initial Bse: 6 606 13 665 43 24 1.00 1.00 1.00 1.00 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00

16 821

0.81 0.81 0.81

30

72.1

53

0.81 0.81 0.81 0.81 0.81

11

7 748

XXXXXX

Capacity Module: Cnflict Vol: 874 xxxx xxxxx 759 xxxx xxxxx 1649 1653 1653 1674 365 Potent Cap.: 772 xxxx xxxxx 852 xxxx xxxxx 80 79 96 413 77 97 365 Move Cap.: 772 xxxx xxxxx 852 xxxx xxxxx 74 413 Volume/Cap: 0.01 xxxx xxxx 0.02 xxxx xxxx 0.38 0.04 0.02 0.05 0.01 0.00

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection #6:0R 11/7th Ave - Eastbound | ************ |
|---|---|
| Average Delay (sec/veh): 1.4 Worst (| Case Level Of Service: F[53.0] |
| Approach: North Bound South Bound Movement: L - T - R L - T - | d 'East Bound West Bound |
| Control: Uncontrolled Uncontrolle Rights: Include Include Lanes: 1 0 0 1 0 1 0 0 1 | Include Include |
| Initial Bse: 6 642 0 0 745 User Adj: 1.00 1.00 1.00 1.00 1.00 1 PHF Adj: 0.86 0.86 0.86 0.86 0.86 0 | 20 31 3 3 0 0 0 0 0 0 0 0 0 0 1.00 1.00 1 |
| Critical Gap Module: Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxx FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxx xxxx xx | |
| Capacity Module: Cnflict Vol: 889 xxxx xxxxx xxxx xxx xxx xxx Potent Cap: 762 xxxx xxxxx xxxx xxxx xxx xxx XXX Move Cap: 762 xxxx xxxxx xxxx xxxx xxx xxx xxx xxx | xxx 112 102 350 xxxx xxxx xxxxx |
| Stopped Oel: 9.8 xxxx xxxxx xxxx xxxx xxx xxx xxx LOS by Move: A * * * * * * * * * * * * * * * * * * | XXX XXXX 117 XXXXX XXXX 0 XXXXX XXX XXXXX 1.5 XXXXX XXXX XXXX XXXX |
| ApproachLOS: * * | Γ , |

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection #7 OR 11/ | 7th Avenue - West | oound | |
|---|---|---|--|
| Average Delay (sec/veh |): 0.2 Wor | st Case Level Of | Service: C[16.6] |
| Approach: North B | | - R L - T | - R L - T - R |
| Control: Uncontrol Rights: Include Lanes: 1 0 0 | ude Incli | ude Incli | ign ^{II} Stop Sign ^I ude Include |
| Volume Module: Base Vol: 0 544 Growth Adj: 1.00 1.18 Initial Bse: 0 642 User Adj: 1.00 1.00 PHF Adj: 0.86 0.86 PHF Volume: 0 746 Reduct Vol: 0 0 Final Vol.: 0 746 | 2 17 631 1.00 1.00 1.18 2 17 745 1.00 1.00 1.00 0.86 0.86 0.86 2 20 866 0 0 0 2 20 866 | 0 0 0 1.00 1.00 1.00 0 0 0 1.00 1.00 1.0 | 0 1 0 9 1.00 1.00 1.00 1.00 0 1 0 9 1.00 1.00 1.00 1.00 0.86 0.86 0.86 0.86 0 1 0 10 0 0 0 0 0 0 1 0 10 |
| Critical Gap Module: Critical Gp:xxxxx xxxx FollowUpTim:xxxxx xxxx | | XXXXX XXXXX XXXX | xxxxx 6.4 xxxx 6.2 xxxxx 3.5 xxxx 3.3 |
| Capacity Module: Cnflict Vol: xxxx xxxx Potent Cap.: xxxx xxxx Move Cap.: xxxx xxxx Volume/Cap: xxxx xxxx | xxxxx 860 xxxx | XXXX XXXX XXXX XXXX XXXX | xxxxx 109 xxxx 416 xxxxx 108 xxxx 416 |
| Level Of Service Module Queue: xxxxx xxxx Stopped Del:xxxxx xxxx LOS by Move: * * Movement: LT - LTR Shared Cap.: xxxx xxxx SharedQueue:xxxxx xxxx SharedQueue:xxxxx xxxx | XXXXX | * * * * * * * * * * * * * * * * * * * | XXXXX XXXX 323 XXXXX |
| Shared LOS: * * ApproachDel: xxxxxx ApproachLOS: * | * * * xxxxx * | * * * * | * * C * 16.6 C |

Kittelson & Associates, Inc. Project # 6743 Milton-Freewater STP and TSP Update Plan, Milton-Freewater, OR 2004 Three-Lane Traffic Condition, Weekday PM Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| intersection | #8 OR 11/ 4th / | Venue | | |
|---|---|--|---|---|
| Average Dela | y (sec/veh): | 0.5 Worst Ca | se Level Of Servic | e: F£ 51.1] |
| Approach: Movement: | North Bound L - T - R | South Bound L - T - R | East Bound L - T - R | West Bound L - T - R |
| Control: Rights: Lanes: | Uncontrolled Include 1 0 0 1 0 | Uncontrolled Include 1 0 0 1 0 | Stop Sign Include 0 0 1! 0 0 | Stop Sign Include 0 0 1! 0 0 |
| Volume Module Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume; Reduct Vol: Final Vol.: | 4 577 3 1.00 1.15 1.00 | 1 1.00 1.15 1.00 8 767 1 1.00 1.00 1.00 7 0.87 0.87 0.8 9 882 0 0 0 | 4 4 1 1 0 1.00 1.00 1.00 7 0.87 0.87 0.87 5 5 1 1 0 0 0 0 | 1 1 17 |
| Critical Gap Critical Gp: FollowUpTim: | 4.1 xxxx xxxxx | 4.1 xxxx xxxx 2.2 xxxx xxxx | 7.1 6.5 6.2 3.5 4.0 3.3 | 7.1 6.5 6.2 3.5 4.0 3.3 |
| Potent Cap.: | 10: 886 xxxx xxxxx 764 xxxx xxxxx 764 xxxx xxxxx 0.01 xxxx xxxx | 847 xxxx xxxxx 847 xxxx xxxx | c 75 96 347 c 70 94 347 | 1677 1678 764 76 96 407 74 94 407 0.02 0.01 0.05 |
| LOS by Move: Movement: Shared Cap.: SharedQueue:> | 0.0 xxxx xxxxx 9.7 xxxx xxxxx A * * * * * * * * * * * * * * * * * * * | 9.3 XXXX XXXX A * * LT - LTR - RT XXXX XXXX XXXX XXXXX XXXX XXXX | | LT - LTR - RT xxxx 289 xxxxx xxxx 0.2 xxxx |

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Level Of Service Computation Report 2000 HCM Operations Method (Base Volume Alternative)

| | 2000 | HCM O | perati ****** | ons Me | | Kaaaaa (Rase | | | rnativ ****** | e) Brisker | ***** | 東京資資 |
|--|---|---|---|--------|---|---|--|----------------------------------|---|--|---|---|
| Intersection | #9 Ma | in St | reet/0 | R11/ 2 | | | ***** | **** | ***** | ***** | *** | *** |
| Cycle (sec): Loss Time (sec) Optimal Cycl | | 100 12 50 | (Y+R | - 4 s | ec) A | ritica verage evel 0 | Delay | (sec | (X): /veh); | , , | .615 23.5 C | |
| Approach: Movement: | | th Bo | | | th Bo | | _ L - | st Bo | | | Bour T - | |
| Control: Rights: Min. Green: Lanes: | 0 0 1 | ermit Ignor O | e 0 | 0 0 | | | ' Spl | it Ph Inclu O | ide 0 | 0 - | c l ude | |
| Volume Moduli Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Reduct Vol: PCE Adj: MLF Adj: Final Vol.: | 7 1,00 7 1.00 0.92 8 0 8 | 187 1.22 228 1.00 0.92 248 0 248 1.00 | Date: 398 1.22 486 0.00 0.00 0.00 0.00 | 0 | 189 1.22 231 1.00 0.92 251 0 251 1.00 | 1.00 12 1.00 0.92 13 | 1.00 1.00 1.00 0.92 5 0 1.00 1.00 1.00 | 0 1.00 0.92 0 0 0 | 9 1.00 9 1.00 0.92 10 0 1.00 1.00 | 1.22 1. 587 1.00 1. 0.92 0. 638 0 638 1.00 1. | 31 00 1 92 0 34 0 34 0 1 | 6 1.00 6 1.00 7 0 7 1.00 1.00 |
| Saturation F Sat/Lane: Adjustment: Lanes: Final Sat.: | 1800 0.97 0.03 52 | 1800 0.97 0.97 1694 | 1800 1.00 1.00 1800 | 1.00 | | 1800 0.97 0.05 87 | 1800 0.88 0.36 565 | | 1800 0.88 0.64 1017 | 1800 18 0.93 0. 1.00 0. 1676 14 | 96 0 84 0 | 1800 0.96 0.16 279 |
| Capacity Ana Vol/Sat: Crit Moves: | | 0.15 | e: 0.00 | 0.00 | 0.15 | 0.15 | 0.01 | 0.00 | 0.01 | 0.38 0. | 02 0 | 20.0 |
| Green/Cycle: Volume/Cap: Delay/Veh: | 0.60 35.7 1.00 | 0.60 35.7 | 0.00 0.00 0.0 1.00 0.0 0 | 1.00 | | 0.24 0.61 36.2 1.00 36.2 8 | 0.02 0.61 87.2 1.00 87.2 | | 0.02 0.61 87.2 1.00 87.2 | 1.00 1. 12.8 7 | 04 0 .4 | 0.62 0.04 7.4 1.00 7.4 0 |
| | | | | | | | | | | | | |

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Appendix F

2025 Traffic Operations Analysis Worksheets – Three-Lane Option Page 1-1

Kittelson & Associates, Inc. Project #6743 Milton-Freewater STP and TSP Update - Milton-Freewater, OR 2025 Three-Lane Alternative, Weekday PM Peak Hour

Scenario Report

Scenario:

AM-3Lane

Command: Volume:

AM-3Lane

Geometry:

Configuration:

3-lane

Impact Fee: Trip Generation:

Default Impact Fee

Trip Distribution: Paths: Routes:

Default Trip Generation
Default Trip Distribution
Default Paths
Default Routes

Default Configuration

Impact Analysis Report Level Of Service

Kittelson & Associates, Inc. Project #6743 Milton-Freewater STP and TSP Update - Milton-Freewater, OR 2025 Three-Lane Alternative, Weekday PM Peak Hour

| In | tersection | | Base Del/ V/ | | Future Del/ V/ | | Change in |
|----|---------------------------------|---|------------------------|-----|------------------------|---|--------------|
| # | 1 OR 11/ 14th Ave | | OS Veh C 74.5 0.000 | | OS Veh C 74.5 0.000 | + | 0.000 D/V |
| # | 2 Main Street-OR11/ 12th Ave | F | 152.9 0.000 | F | 152.9 0.000 | + | 0.000 D/V |
| # | 3 Main Street - OR 11/ 10th Ave | E | 36.4 0.000 | Ę | 36.4 0.000 | + | 0.000 D/V |
| # | 4 Main Street - OR 11/ 9th Ave | E | 49.5 0.000 | . E | 49.5 0.000 | + | 0.000 D/V |
| # | 5 Main Street-OR11/ 8th Ave | F | 76.8 0.000 | F | 76.8 0.000 | + | 0.000 D/V |
| # | 6 OR 11/7th Ave - Eastbound | F | 86.4 0.000 | . F | 86.4 0.000 | + | 0.000 D/V |
| # | 7 OR 11/7th Avenue - Westbound | D | 33.7 0.000 | D | 33.7 0.000 | + | 0.000 D/V |
| # | 8 OR 11/ 4th Avenue | F | 97.8 0.000 | F | 97.8 0.000 | + | 0.000 D/V |
| # | 9 Main Street/OR11/ 2nd Ave | С | 23.6 0.552 | . C | 23.6 0.552 | + | V\d 0000.0 |

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AM-3Lane

ApproachLOS:

Kittelson & Associates, Inc. Project #6743 Milton-Freewater STP and TSP Update - Milton-Freewater, OR 2025 Three-Lane Alternative, Weekday PM Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection #1 OR 11/ 14th A | Ve Libertaria de Aparta | 医食养液体 计专业中间 计中间 计 | **** |
|---|---|--|---|
| Average Delay (sec/veh): | | e Level Of Service | |
| Approach: North Sound Movement: L - T - R | South Bound L T R | East Bound L - T - R | West Bound |
| Control: Uncontrolled Rights: Include Lanes: 0 0 0 1 0 | Uncontrolled Include 1 0 0 0 | Stop Sign Include 0 0 0 0 0 | Stop Sign Include 0 0 1! 0 0 |
| Volume Module: >> Count Date: Base Vol: 0 323 13 Growth Adj: 1.32 1.56 1.32 Initial Bse: 0 503 17 User Adj: 1.00 1.00 1.00 PHF Adj: 0.70 0.70 0.70 PHF Volume: 0 719 25 Reduct Vol: 0 0 0 Final Vol: 0 719 25 | 1 Dec 2004 << 108 259 0 1.32 1.56; 1.32 143 403 0 1.00 1.00 1.00 0.70 0.70 0.70 204 576 0 0 0 0 204 576 0 | 1.32 1.32 1.32 0 0 0 1.00 1.00 1.00 0.70 0.70 0.70 0 0 0 0 | 12 0 152 1.32 1.32 1.32 16 0 201 1.00 1.00 1.00 0.70 0.70 0.70 23 0 287 0 0 0 0 23 0 287 |
| Critical Gap Module: Critical Gp:xxxxx xxxx xxxx FollowUpTim:xxxxx xxxx xxxxx | | XXXXX XXXX XXXXX XXXXX XXXX XXXXX | 6.4 xxxx 6.2 3.5 xxxx 3.3 |
| Capacity Module: Cnflict Vol: xxxx xxxx xxxxx Potent Cap:: xxxx xxxx xxxx Move Cap:: xxxx xxxx xxxx Volume/Cap: xxxx xxxx xxxx | 743 xxxx xxxxx 864 xxxx xxxxx 864 xxxx xxxxx 0.24 xxxx xxxx | XXXX XXXX XXXXX | 1715 xxxx 731 100 xxxx 425 82 xxxx 425 0.28 xxxx 0.67 |
| Level Of Service Module: Queue: xxxxx xxxx xxxxx Stopped Del:xxxxx xxxx xxxxx LOS by Move: * * * Movement: LT - LTR - RT Shared Cap.: xxxx xxxx xxxx xxxx SharedQueue:xxxxx xxxx xxxx xxxx x Shrd StpDel:xxxxx xxxx xxxx xxxx x ApproachDel: xxxxxx | 10.4 xxxx xxxxx B * * LT - LTR - RT xxxx xxxx xxxxx xxxx xxxx xxxxx | XXXXX XXXX XXXXX | XXXXX XXXX XXXXX LT - LTR - RT XXXX 326 XXXXX XXXXX 9.8 XXXX |
| ApproachLOS: * | 777000 * | * | F |

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Kittelson & Associates, Inc. Project #6743 Milton-Freewater STP and TSP Update - Milton-Freewater, OR 2025 Three-Lane Alternative, Weekday PM Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection | #2 Ma | in St | reet-(| DR11/ | 12th / | | | *** | tan din din din | | e de sale de sale de | *** |
|---|---|--|---|--|-------------------------------|---|------------------------------|-----------------------------|---|--|-----------------------------|---|
| Average Delay | (sec | /veh) | * | 7.1 | Wors | t Case | Leve | l Of | Service |) (| F [| 52.91 |
| Approach: Movement: | | th Bo | - 'R | , L - | th Bo T | - R | . L | ast Bo | - R | | st Bo | |
| Control: Rights: Lanes: | | ontro Inclu | lled ide | Und | ontro Incli | olled ude 10 | S | top S Incli 0 1! | īgn ude | | top Si Inclu | ıde |
| Volume Module Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol.: | 1.32 5 1.00 0.80 7 | 450 1.56 701 1.00 0.80 876 0 | Date: 2 1.32 3 1.00 0.80 3 0 | 1.32 1.33 1.00 0.80 | 358 1.56 558 1.00 | 7 1.32 9 1.00 0.80 12 0 | 48 1.00 | | | 3 1.32 4 1.00 0.80 5 0 | | 15 1.32 20 1.00 0.80 25 0 |
| Critical Gap Critical Gp: FollowUpTim: | 4.1 2.2 | XXXX | XXXXX | 2.2 | | XXXXX | 7.1 3.5 | 6.5 4.0 | | 7.1 3.5 | 6.5 4.0 | 6.2 3.3 |
| Capacity Modu Cnflict Vol: Potent Cap.: Move Cap.: | le: 709 890 890 | XXXX XXXX XXXX | XXXXX XXXXX | 879 768 768 | XXXX XXXX XXXX | XXXXX XXXXX XXXXX XXXX | 81 73 | 1628 103 100 0.03 | 703 441 441 0.02 | 82 76 | 1633 102 99 0.02 | 878 350 350 0.07 |
| Level Of Serv Queue: Stopped Del: LOS by Move: Movement: Shared Cap.: SharedQueue: Shrd StpDel: Shared LOS: ApproachDel: | 0.0 9.1 A LT - XXXX XXXX XXXX XXXX | LTR | XXXXX XXXXX + - RT XXXXX XXXXX | 9.8 A LT XXXX XXXXX XXXXX | XXXX - LTR XXXX XXXX | XXXXX - RT XXXXX XXXXX | LT XXXX XXXXX XXXXX | ***** - LTR 83 4.6 | XXXXX XXXXX - RT XXXXX XXXXX XXXXX | LT XXXX | XXXX - LTR 206 0.5 | XXXXX - RT XXXXX XXXXX |

Kittelson & Associates, Inc. Project #6743 Milton-Freewater STP and TSP Update - Milton-Freewater, OR 2025 Three-Lane Alternative, Weekday PM Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| 高月海南省東海市市東海市東海南東南東市会社会 (中央のようなのは、東京のは20、東京等、東京できた。 | ******* | ************** | ***** | ***** |
|---|---|--|--|--------------------------------------|
| Intersection #3 Main S | STreet - UR 11/ 1 | | ***** | ****** |
| Average Delay (sec/ver | 0.8 Wo | rst Case Level Of | Service: | E[36.4] |
| Approach: North E Movement: L | | | | est Bound - T - R |
| Control: Uncontr Rights: Incl Lanes: 1 0 0 | lude Inc | | .ude | top Sign Include 0 1! 0 0 |
| Volume Module: >> Cour Base Vol: 5 495 Growth Adj: 1.32 1.52 Initial Bse: 7 751 User Adj: 1.00 1.00 PHF Adj: 0.88 0.88 PHF Wolume: 8 854 Reduct Vol: 0 0 Final Vol: 8 854 | 1 4 36 2 1.32 1.32 1.5 1 5 56 0 1.00 1.00 1.0 1 0.88 0.88 0.8 4 2 63 | 9 8 7 2 1.32 1.32 1.32 0 11 9 0 1.00 1.00 1.00 8 0.88 0.88 0.88 7 12 11 6 | 7 1 0 1.00 1.00 3 0.88 0.88 2 8 2 | ō ō |
| Critical Gap Module: Critical Gp: 4.1 xxxx FollowUpTim: 2.2 xxxx | | | | |
| Capacity Modúle: Cnflict Vol: 649 xxxx Potent Cap.: 937 xxxx Move Cap.: 937 xxxx Volume/Cap: 0.01 xxxx | C XXXXX 785 XXX C XXXXX 785 XXX | x xxxxx 96 119 x xxxxx 90 117 | 9 477 97 7 477 93 | |
| Level Of Service Modul Queue: 0.0 xxxx Stopped Del: 8.9 xxxx LOS by Move: A * Movement: LT - LTR Shared Cap.: xxxx xxxx SharedQueue:xxxxx xxxx Shrd StpDel:xxxxx xxxx | XXXXX 0.0 XXX XXXXX 9.6 XXX X A * X - RT LT - LT XXXXX XXXX XXX XXXXX XXXX XXX | x xxxxx xxxx 134 x xxxxx xxxxx 0.5 x xxxxx xxxxx 36.4 | * ***** ***** - RT | - LTR - RT 261 xxxxx 0.2 xxxxx |
| Shared LOS: * * ApproachDel: xxxxxx ApproachLOS: * | * * * xxxx * | x * * E x 36.4 | * * | C * 19.9 C |

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Kittelson & Associates, Inc. Project #6743 Milton-Freewater STP and TSP Update - Milton-Freewater, OR 2025 Three-Lane Alternative, Weekday PM Peak Hour

| 本本本本本本本本本本本在在企業工程的工程的工程的工程的工程的工程的工程的工程的工程的工程的工程的工程的工程的工 | ***** |
|--|---|
| Average Delay (sec/veh): 1.4 Worst Case Level Of Service: E | [49.5] |
| Approach: North Bound South Bound East Bound West Hovement: L - T - R L - T - R L - T - R L - T | ound R |
| Control: Uncontrolled Uncontrolled Stop Sign Stop Rights: Include Include Include Include Include: 1 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 | l ude |
| Volume Module: >> Count Date: 22 Dec 2004 << Base Vol: 1 508 5 15 371 19 11 1 6 4 Growth Adj: 1.32 1.61 1.32 1.32 1.61 1.32 1.32 1.32 1.32 1.32 1.32 1.31 Initial Bse: 1 818 7 20 597 25 15 1 8 5 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0 | 17 1.00 |
| Critical Gap Module: Critical Gp: 4.1 xxxx xxxxx | |
| Capacity Module: Cnflict Vol: 684 xxxx xxxxx 906 xxxx xxxxx 163D 1623 670 1624 1633 Potent Cap.: 909 xxxx xxxxx 751 xxxx xxxxx 82 104 460 83 103 Move Cap.: 909 xxxx xxxxx 751 xxxx xxxxx 75 101 460 79 99 Volume/Cap: 0.00 xxxx xxxx 751 xxxx xxxxx 0.21 0.01 0.02 0.07 0.0 | 339 339 |
| | R - RT XXXXX XXXXX XXXXX XXXXX XXXXX |

AM-3Lane

Kittelson & Associates, Inc. Project #6743 Milton-Freewater STP and TSP Update - Milton-Freewater, OR 2025 Three-Lane Alternative, Weekday PM Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| 有有有主要中国中国的政治的主义的政治的主义的企业的企业的企业的企业的企业的企业的企业的企业的企业的企业的企业的企业的企业的 | 经有效的有效的 |
|---|------------------------------|
| Intersection #5 Main Street-OR11/ 8th Ave | **** |
| Average Delay (sec/veh): 2.9 Worst Case Level Of Service: | F[76.8] |
| - No | st Bound T - R |
| Control: Uncontrolled Uncontrolled Stop Sign Stor Rights: Include Include Include | op Sign Include 1! 0 0 |
| Volume Module: >> Count Oate: 29 Nov 2004 << Base Vol: 8 522 2 3 392 15 25 1 11 2 Growth Adj: 1.32 1.52 1.32 1.52 1.32 1.32 1.32 1.32 1.32 1.32 1.32 1.3 | |
| Critical Gap Module: Critical Gp: 4.1 xxxx xxxxx 4.1 xxxx xxxxx 7.1 6.5 6.2 7.1 followUpTim: 2.2 xxxx xxxxx 2.2 xxxx xxxxx 3.5 4.0 3.3 3.5 | 6.5 6.2 4.0 3.3 |
| Capacity Module: Cnftict Vol: 699 xxxx xxxxx 903 xxxx xxxxx 1632 1624 687 1631 Potent Cap.: 898 xxxx xxxxx 753 xxxx xxxxx 82 104 450 82 Move Cap.: 898 xxxx xxxxx 753 xxxx xxxxx 76 102 450 77 Volume/Cap: 0.01 xxxx xxxx 0.01 xxxx xxxx 0.50 0.01 0.04 0.04 | 102 339 100 339 |
| Levet Of Service Module: | |
| Queile: 0.0 xxxx xxxxx 0.0 xxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxx | |
| Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - Shared Cap:: xxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxx | C * |
| ApproachDel: xxxxxx xxxxxx 76.8 ApproachLOS: * * F | 24.1 C |

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Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection #6 OR 11/7th Ave | e - Eastbound | ; ******* | |
|---|---|---|--|
| Average Delay (sec/veh): | | Level Of Service | f [86.4] |
| Approach: North Bound Movement: L - T - R | South Bound L - T - R | East Bound L - T - R | West Bound L - T - R |
| Control: Uncontrolled Rights: Include Lanes: 1 0 0 1 0 | Uncontrolled Include 1 0 0 1 0 | Stop Sign Include 0 0 1! 0 0 | Stop Sign Include 0 0 1! 0 0 |
| Volume Module: Base Vol: 2 556 0 Growth Adj: 1.32 1.56 1.32 Initial Bse: 3 866 0 User Adj: 1.00 1.00 1.00 PHF Adj: 0.70 0.70 0.70 PHF Volume: 4 1237 0 Reduct Vol: 0 0 0 Final Vol.: 4 1237 0 | 0 408 13 1.32 1.56 1.32 0 636 17 1.00 1.00 1.00 0.70 0.70 0.70 0 908 25 0 0 0 0 908 25 | 7 1 2 1.32 1.32 1.32 9 1 3 1.00 1.00 1.00 0.70 0.70 0.70 13 2 4 0 0 0 13 2 4 | 0 0 0 0 0 1.32 1.32 0 0 0 0 1.00 1.00 1.00 1.00 0.70 0.70 0 |
| Critical Gap Module: Critical Gp: 4.1 xxxx xxxxx FollowUpTim: 2.2 xxxx xxxxx | XXXXX XXXX XXXXX XXXXX XXXX XXXXX | | xxxxx xxxx xxxxx |
| Capacity Module: Cnflict Vol: 932 xxxx xxxxx Potent Cap.: 734 xxxx xxxxx Move Cap.: 734 xxxx xxxx Volume/Cap: 0.01 xxxx xxxx | XXXX XXXX XXXXX XXXX XXXX XXXXX | 2165 2165 920 53 48 331 52 48 331 0.25 0.04 0.01 | XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX |
| Level Of Service Module: Queue: 0.0 xxxx xxxxx Stopped Del: 9.9 xxxx xxxxx LOS by Move: A * * Movement: LT - LTR - RT Shared Cap.: xxxx xxxx xxxxx SharedQueue:xxxxx xxxx xxxxx Shrd StpDel:xxxxx xxxx xxxx Shared LOS: * * | ***** **** ***** | XXXXX XXXX XXXXX LT - LTR - RT XXXX 62 XXXXX XXXXX 1.1 XXXXX XXXXX 86.4 XXXXX F ** | XXXXX XXXX XXXX LT - LTR - RT XXXX 0 XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX XXXXX XXXX XXXXX XXXX XXXX XXXX |
| ApproachDel: xxxxxx ApproachLOS: * | xxxxx * | 86.4 F | xxxxx * |

AM-3Lane

Kittelson & Associates, Inc. Project #6743 Milton-Freewater STP and TSP Update - Milton-Freewater, OR 2025 Three-Lane Alternative, Weekday PM Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection #7 OR 1 | 1/7th Avenue - We | STOOLING | 李有斯夫克洛市市市市市市市市市市市大大市市市市 |
|--|---|--|--|
| Average Delay (sec/v | 2h): 0.6 W | Jorst Case Level Of S | ervice: D[33.7] |
| | Bound South | Bound East Bo | |
| Rights: In | clude In | ntrolled Stop Si iclude Inclu 0 1 0 0 0 1! | ide Include |
| Growth Adj: 1.32 1. | 56 1.32 1.32 1. 66 1 9 6 00 1.00 1.00 1. 70 0.70 0.70 0. 37 2 13 9 0 0 0 | 536 0 0 0 .00 1.00 1.00 1.00 | 0 2 0 16 1.32 1.32 1.32 1.32 0 3 0 21 1.00 1.00 1.00 1.00 0.70 0.70 0.70 0.70 0 4 0 30 0 0 0 0 0 0 4 0 30 |
| Critical Gap Module: Critical Gp:xxxxx xx FollowUpTim:xxxxx xx | xx xxxxx 2.2 xx | **** ***** ***** **** *** ***** ***** **** | ***** 3.5 **** 3.3 |
| Potent Cap.: xxxx xx Move Cap.: xxxx xx | xx xxxxx | *** ***** **** **** **** *** ***** **** **** *** ***** **** **** | xxxxx 52 xxxx 216 xxxxx 51 xxxx 216 |
| Stopped Del:xxxxx xx LOS by Move: * Movement: LT - L Shared Cap.: xxxx xx SharedQueue:xxxxx xx | XX XXXXX | XXX XXXX XXXX XXXX | XXXXX XXXX 159 XXXX |

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Level Of Service Computation Report

| e: F[97.8] |
|--|
| West Bound L - T - R |
| Stop Sign Include 0 0 1! 0 0 |
| 1 1 13 1.00 1.00 1.00 0.78 0.78 0.78 |
| 7.1 6.5 6.2 3.5 4.0 3.3 |
| 47 62 253 45 61 253 |
| XXXXX XXXX XXXXX XXXXX XXXX XXXX X |
| |

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Kittelson & Associates, Inc. Project #6743 Milton-Freewater STP and TSP Update - Milton-Freewater, OR 2025 Three-Lane Alternative, Weekday PM Peak Hour

Cycle (sec): 100 Critical Vol./Cap. (X): 0.552
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 23.6
Optimal Cycle: 44 Level Of Service: C

| Approach: Movement: | No! L · | rth Bo - T | und - R | , L - | ith Bo | ound - R | Ea L - | st 8o | ound ~ R . | . L . | est Bo | ound - R | |
|------------------------|----------------|-----------------|------------|--------|---------------|-------------|-----------|----------------|---------------|-------|-----------------|-------------|--|
| Control: Rights: | , | Permit Ignor | | F | ermi Incli | | Spl | it Ph Inclu | | Spl | lit Ph Inclu | | |
| Min. Green: | 0 | 0 | 0 | 0 | 0 | 0. | 0 | 0 | 0 | 0 | | 0 | |
| Lanes: | 0 ′ | 10 | 0 1: | 0 (| 0 0 | 1 0 | 0 0 | 11 | 0 0 | 1 (| 0 0 | 1 0 | |
| | - · | | | | | | | | | | | 1 | |
| Volume Module | 2: >> | Count | : Date: | '30 No | ov 200 | 04 << ' | | | | 1 | | ı | |
| Base Vol: | 14 | 170 | 407 | 0 | 159 | 1 | 7 | 0 | 11 | 262 | 19 | 1 | |
| Growth Adj: | 1.32 | 1.61 | 1.61 | 1.32 | 1.61 | 1.32 | 1.32 | 1.32 | 1.32 | 1.61 | 1.32 | 1.32 | |
| Initial Bse: | 18 | 274 | 655 | 0 | 256 | 1 | 9 | 0 | 15 | 422 | 25 | 1 | |
| User Adj: | 1.00 | 1,00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 0.90 | 0.90 | 0.00 | 0.90 | 0.90 | 0.90 | | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | |
| PHF Volume: | 21 | 304 | 0 | Ö | 285 | 1 | 10 | ŏ | 16 | .469 | | 0.70 | |
| Reduct Vol: | O | 0 | Ō | Ŏ | 0 | Ó | Ŏ | ň | ň | 0 | - ñ | 'n | |
| Reduced Vol: | 21 | 304 | 0 | Ó | 285 | 1 | 1Ŏ | ŏ | 16 | 469 | 2 8 | ĭ | |
| PCE Adj: | 1.00 | 1.00 | 0.00 | 1.00 | 1.DO | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.0D | |
| MLF Adj: | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Final Vol.: | . 21 | 304 | 0 | . 0 | 285 | 1 | 10 | Ö | 16 | 469 | 28 | 1 | |
| | } - - | | | | | | | | | 1 | | 1 | |
| Saturation F | low Mo | odule: | | • | | ' | 1 | | | • | | ' | |
| Sat/Lane: | | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | |
| Adiustmant | 0.00 | 0.05 | 1 00 | 4 00 | 0.00 | 0.00 | | | | | | | |

Green/Cycle: 0.34 0.34 0.00 0.00 0.34 0.34 0.03 0.00 0.03 0.51 0.51 0.51 Volume/Cap: 0.55 0.55 0.00 0.00 0.47 0.47 0.55 0.00 0.55 0.55 0.03 0.03 Delay/Veh: 27.8 27.8 0.0 0.0 26.3 26.3 61.0 0.0 61.0 17.7 12.4 User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 AdjDel/Veh: 27.8 27.8 0.0 0.0 26.3 26.3 61.0 0.0 61.0 17.7 12.4 HCM2kAvg: Ò 0 . 7

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Thu Jun 2, 2005 14:54:33 PM-3Lane

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Kittelson & Associates, Inc. #6743 Milton-Freewater STP and TSP Update - Milton-Freewater, OR 2025 Three-Lane Alternative, Weekday PM Peak Hou

Scenario Report

Scenario:

PM-3Lane

Command: Volume:

Routes:

PM-3Lane

Geometry: Impact Fee:

Trip Generation: Trip Distribution: Paths: .

PM
3-lane
Default Impact Fee
Default Trip Generation
Default Trip Distribution
Default Paths
Default Paths

Default Routes

Configuration: Default Configuration Kittelson & Associates, Inc. #6743 Milton-Freewater STP and TSP Update - Milton-Freewater, OR 2025 Three-Lane Alternative, Weekday PM Peak Hou

Impact Analysis Report Level Of Service

| Intersection | | Future Del/ V/ | Change in |
|-----------------------------------|-----------------|------------------------|--------------|
| # 1 OR 11/ 14th Ave | | OS Veh C 66.9 0.000 | + 0.000 D/V |
| # 2 Main Street-OR11/ 12th Ave | F 150.4 0.000 F | 150.4 0.000 | + 0.000 D/V |
| # 3 Main Street - OR 11/ 10th Ave | F 237.8 0.000 F | 237.8 0.000 | + 0.000 D/V |
| # 4 Main Street - OR 11/ 9th Ave | F 86.8 0.000 F | 86.8 0.000 | + 0.000 D/V |
| # .5 Main Street-OR11/ 8th Ave | F 442.6 0.000 F | 44 2. 6 0.000. | + 0.000 D/V |
| # 6 OR 11/7th Ave - Eastbound | F 250.8 0.000 F | 250.8 0.000 | '+ 0.000 D/V |
| # 7 OR 11/7th Avenue - Westbound | C 24.4 0.000 C | 24.4 0.000 | + 0.000 D/V |
| # 8 OR 11/ 4th Avenue | F 144_3 0.000 F | 144.3 0.000 | + 0.000 D/V |
| # 9 Main Street/DR11/ 2nd Ave | c 31.9 0.811 c | 31.9 0.811 | + 0.000 D/V |

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PM-3Lane

ApproachLOS:

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Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| ******* | ***** | ***** | **** | PARKET | HARRA | TERRER | **** | | マモノ 数字字字号 | **** | · www.milejejeje |
|---|---|---------------------------------|----------------------------|---|--|------------------------|--|--|-------------------------------|--|--|
| Intersection | #1 OR 11/ | 14th / | ve | | | | Market I | | | | ***** |
| Average Delay | (sec/veh |);); | 10.2 | More | t Case | Leve | Of | Servic | e; | .F[| 66.9] |
| Approach: Movement: | North B | ound | Sot | uth Bo | | Ea | ast Be | | W | est Bo | |
| Control: Rights: % Lanes: | Uncontr Incl 0 0 0 | ude | | contro Inclu | ıde | | | ign ude 0 0 | | top S Incli | ∟ďe |
| Volume Module Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol.: | 0 333 1.32 1.56 0 519 1.00 1.00 0.71 0.71 0 731 0 0 | 1.32 8 1.00 0.71 11 | 145 1.32 191 1.00 | 2004 339 1.56 528 1.00 0.71 744 0 744 | 0 1.32 0 1.00 0.71 0 0 | 1.00 | 0 1.32 0 1.00 0.71 0 0 | 0 1.32 0 1.00 0.71 0 0 | 11 1.00 0.71 15 0 | 0 1.32 0 1.00 0.71 0 0 | 134 1.32 177 1.00 0.71 249 0 |
| Critical Gap Critical Gp:x FollowUpTim:x | XXXX XXXX XXXX XXXX | | 2.2 | XXXX | | XXXXX | XXXX | XXXXX XXXXX | | XXXX XXXX | 6.2 3.3 |
| Cnflict Vol: Potent Cap.: Move Cap.: Volume/Cap: | XXXX XXXX XXXX XXXX XXXX XXXX | XXXXX XXXXX XXXX | 865 865 | XXXX XXXX | XXXXX XXXXX XXXXX | XXXX XXXX | XXXX | XXXXX XXXXX XXXXX XXXX | 65 49 | XXXX XXXX XXXX XXXX | 736 422 422 0 59 |
| Stopped Del:x LOS by Move: | ***** **** ***** | ***** | 11.0 B | XXXX * | xxxxx | *xxxx | xxxx * | *xxx | XXXXX | XXXX * | * |
| Movement: Shared Cap.: SharedQueue:x Shrd StpDel:x Shared LOS: | **** **** ***** | XXXXX | XXXX XXXXX XXXXX | XXXX XXXX * | XXXXX XXXXX | XXXX XXXXX XXXXX | XXXX * | XXXXX XXXXX | XXXX XXXXX | 8.2 66.9 F | XXXXX |
| ApproachDel: | XXXXXX | | X | XXXXX | | X) | XXXXX | | | 66.9 | |

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Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection | #2 Main S | treet-0 | R11/ 1 | 2th A | Ve | (4344 | **** ******************************** | | ***** | | **** |
|--|--|--|---|--|--|----------------------------|--|---|-------------------------------------|-------------------|---|
| Average Delay | / (sec/veh |): ****** | 3.4 | Wors | | Level | | Service | | F.[1 | 50.4] |
| Approach: Movement: | North B L - T | | L | ith Bo | - R | | st Bo | | | st Bo | |
| Control: Rights: Lanes: | Uncontr Incl 1 0 0 | ude | Und | incli Incli 0 | lled ¹ ide | | top Si Inclu) 1! | ıde | | op Si Inclu | ıde |
| Volume Module Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol.: | 1 466 1.32 1 <u>.</u> 56 | 1 1.32 1 1.00 0.86 2 0 | 37 1.32 49 | 482 1.56 751 1.00 0.86 873 0 | 21 1.32 28 1.00 0.86 32 0.32 | 24 1.00 | 3 1.32 4 1.00 0.86 5 0 | 1 1.32 1 1.00 0.86 2 0 2 | 1.32 3 1.00 0.86 3 0 | 1.00 0.86 3 | 11 1.32 15 1.00 0.86 17 0 |
| Critical Gap Critical Gp: FollowUpTim: | 4.1 xxxx | | | | XXXXX XXXXX | 7.1 3.5 | 6.5 4.0 | 6.2 | 7.1 3.5 | 6.5 4.0 | 6.2 |
| Capacity Modu Cnflict Vol: Potent Cap.: Move Cap.: Volume/Cap: | 905 xxxx 751 xxxx | XXXXX | 791 791 | XXXX | XXXXX XXXXX XXXXX XXXX | 57 49 | 75 69 | 889 345 345 0.00 | 57 | 73 68 | 845 366 366 0.05 |
| Level Of Serv Queue: Stopped Del: LOS by Move: Movement: Shared Cap.: Shared Queue:> Shrd StpDel:> Shared LOS: ApproachDel: ApproachLOS: | 0.0 xxxx 9.8 xxxx A * LT - LTR xxxx xxxx | XXXXX XXXXX - RT XXXXX XXXXX XXXXX XXXXX | 9.9 A LT - XXXX XXXXX XXXXX * | LTR XXXX XXXX | XXXXX * - ŘT XXXXX XXXXX | LT - xxxx xxxxx xxxxx xxxx | XXXX + LTR 54 2.5 | XXXXX | LT - | LTR 152 0.5 | XXXXX - RT XXXXX XXXXX |

ApproachLOS:

Kittelson & Associates, Inc. #6743 Milton-Freewater STP and TSP Update - Milton-Freewater, OR 2025 Three-Lane Alternative, Weekday PM Peak Hou

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| · 有有有有有法者或者或者 | ***** | **** | .125U P | re unou | L L DOG | e Anim | | ternat | 1467 | rau. | | |
|---|---|--|---|--|---|------------------------|--------------------------|------------------------|---------------------------|---------------------------|---|--|
| Intersection | #3 Main S | treet | OR 11 | 1/ 10: | h Ave | **** | | - | **** | **** | ***** | |
| Average Dela | / (sec/ver |); | 5.8 | Hors | t Cas | e Yeve | of : | Service | e: | | 237.81 | |
| Approach: Movement: | North E L - T | ound R | Sou L | ith Bo | | L · | ast Bo | ound - R | ₩ L | est Bo | - R | |
| Control: Rights: Lanes: | Uncontr Incl | olled | Und | incli | olled ude 10 | . i Si | top S Incl | ign ude 0 0 | 1, S | top S Incli | ign ude | |
| Volume Module Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol.: | 5 | 1.32 3 1.00 0.80 3 | 18 No 7 1.32 9 1.00 0.80 | 531 1.52 806 1.00 0.80 1008 | 04 << 17 1.32 22 1.00 0.80 28 | 0.80 | 1.00 0.80 3 | 0.80 7 0 | 7 1.00 0. 80 | | 17 1.32 22 1.00 0.80 28 0 | |
| Critical Gap Critical Gp: FollowUpTim: | 4.1 xxxx | XXXXX | | | xxxx xxxx | 7.1 3.5 | 6.5 4.0 | | | | 6.2 3.3 | |
| Capacity Mode Cnflict Vol: Potent Cap: Move Cap: Volume/Cap: | 1036 xxxx 671 xxxx 671 xxxx | XXXXX | 736 736 | XXXX | XXXXX XXXXX XXXXX XXXX | 45 38 | 1990 61 60 0.06 | 289 | 46 42 | 2003 60 59 0.06 | 928 328 328 0.09 | |
| Level Of Servaue: Stopped Del: LOS by Move: Movement: Shared Cap.: SharedQueue: Shrd StpDel:x Shared LOS: | 0.0 xxxx 10.4 xxxx B * LT - LTR xxxx xxxx | XXXXX XXXXX - RT XXXXX XXXXX | 10.0 A LT - xxxx xxxx | LTR XXXX XXXX | XXXXX - RT XXXXX XXXXX | XXXX XXXXX XXXXX | XXXX LTR 46 3.6 | XXXXX - RT XXXXX XXXXX | LT - XXXX | XXXX LTR 117 1.3 | XXXXX - RT XXXXX XXXXX | |
| ApproachDel: | ×××××× | | | XXXX | | 2 | 37.8 | | | 50.9 | | |

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Kittelson & Associates, Inc. #6743 Milton-Freewater STP and TSP Update - Milton-Freewater, OR 2025 Three-Lane Alternative, Weekday PM Peak Hou

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection | #4 Main Street | - OR 11/ 9t | | ecitariania esia araban araban | Kakaban kakaban dalam di Susiasi |
|--|---|--|--|-----------------------------------|--|
| Average Dela | y (sec/veh): | 2.2 Wor | st Case Level Of | Service: | F.L. 86, 8) |
| Approach: Movement: | North Bound L - T - R | South B | ound East | Bound (| Vest Bound |
| Control: Rights: Lanes: | Uncontrolled Include 1 0 0 1 0 | Uncontrol Incl | olled Stop ude Inc | . 11 | Stop Sign Include 0 1! 0 0 |
| Volume Modul Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol.: | e: >> Count Date 1 522 2 1.32 1.52 1.32 1 792 3 1.00 1.00 1.00 0.89 0.89 1 890 3 0 0 0 0 1 890 3 | 31 542 1.32 1.52 41 823 1.00 1.00 0.89 0.89 46 924 0 0 | 14 9 1.32 1.32 1.3 18 12 1.00 1.00 1.0 0.89 0.89 0.8 21 13 0 0 | 1 7 1 ² 0 1.00 1.00 | 2 1.32 1.32 1 1 15 0 1.00 1.00 7 0.89 0.89 2 1 16 0 0 0 |
| Critical Gap Critical Gp: FollowUpTim: | 4.1 xxxx xxxxx | | | | |
| Potent Cap.: | 945 xxxx xxxxx 726 xxxx xxxxx 726 xxxx xxxxx | 759 xxxx 759 xxxx | xxxxx 51 6 xxxxx 45 6 | 3 325 51 3 325 47 | |
| LOS by Move: Movement: Shared Cap.: SharedQueue: | 0.0 xxxx xxxxx 10.0 xxxx xxxxx A * * * LT - LTR - RT xxxx xxxx xxxxx xxxx xxxx xxxxx xxxxx xxxx xxxxx | 10.0 xxxx B * LT - LTR xxxx xxxx xxxxx xxxx | xxxxx xxxx 6 | X XXXXX XXXXX | - LTR - RT 91 xxxxx 1.2 xxxx |

PM-3Lane

Kittelson & Associates, Inc. #6743 Milton-Freewater STP and TSP Update - Milton-Freewater, OR 2025 Three-Lane Alternative, Weekday PM Peak Hou

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection | #5 Main S | treet-Oi | R11/_8 | th Av | e | ***** | | **** | | **** | HANKE Likeran |
|--|--|----------------------------------|---|----------------------------|---|---|--------------------------|---|--|----------------------|---------------------------------|
| Average Detay | (sec/veh |): ******* | 11.2 | Wors | t Case | Level | Of S | ervice | 元》表示表示(原) : : : :::::::::::::::::::::::::::::: | 7.77₹₹ F[4 | 42.6] |
| Approach: Movement: | North B L - T | - R . | <u> </u> | ith Bo T | - R . | . L ~ | T | und R | | st Bo | |
| Control: Rights: Lanes: | Uncontr Incl 1 0 0 | olledi ude | Und | ontro Inclu | lled ' de | St | op Si Inclu | gn I Ide | | op Si Inclu 1! | de |
| Volume Module Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol: | 6 527 1.32 1.52 8 800 1.00 1.00 0.81 0.81 10 988 0 0 10 988 | 1.32 12 1.00 0.81 15 | 13 1.32 17 1.00 0.81 21 0 | 578 1.52 877 1.00 | 4 << 43 1.32 57 1.00 0.81 70 0 | 24 1.32 32 1.00 0.81 39 0 | 1.00 0.81 5 0 | 6 1.32 8 1.00 0.81 10 0 | 3 1.32 4 1.00 0.81 5 0 | 1.00 | 1.32 1.00 0.81 2 0 |
| Critical Gap Critical Gp: FollowUpTim: | 4.1 xxxx 2.2 xxxx | XXXXX XXXXX | | | XXXXX XXXXX | 7.1 3.5 | 6.5 4.0 | 6.2 3.3 | 7.1 3.5 | 6.5 | 6.2 |
| | 1153 xxxx | XXXXX | 691 691 | XXXX | XXXXX XXXXX XXXXX XXXX | 34 32 | 2182 47 44 0.11 | 1118 254 254 0.04 | 2182 33 28 0.17 | 45 43 | 995 300 300 0.01 |
| Level Of Serv Queue: Stopped Del: LOS by Move: | 0.0 xxxx 11.0 xxxx | XXXXX | | XXXX XXXX | xxxxx * | xxxxx ***** | xxxx xxxx | xxxxx * | xxxxx xxxxx | XXXX XXXX | xxxxx *xxxx |
| Movement: Shared Cap.: SharedQueue: Shrd StpDel: Shared LOS: | LT - LTR XXXX XXXX XXXX XXXX | XXXXX | LT XXXX | XXXX | XXXXX | **** **** **** | 5.5 443 F | - RT XXXXX XXXXX XXXXX | XXXX | 0.7 | - RT XXXXX XXXXX XXXXX |
| ApproachDel: ApproachLOS: | XXXXXX * | (| X | xxxxx | | 4 | 442.6 F | | | 124.6 | |

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Kittelson & Associates, Inc. #6743 Milton-Freewater STP and TSP Update - Milton-Freewater, OR 2025 Three-Lane Alternative, Weekday PM Peak Hou

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Atternative)

| intersection | #6 OR 11/7 | th Ave - E | astboun | d d | | | THE PERSON | 企業出生企业 |
|---|--|--|---|---|----------------------------------|--|--|--------------------------------------|
| Average Delay | (sec/veh) | | Wors | t Cose | Level Of | Service | \$ P[2 | 50.8) |
| Approach: Movement: | North Bou | | outh Bo | | East L - T | Bound R | West Bo | |
| Control: Rights: Lanes: | Uncontro Includ 1 0 0 | de | ncontro Inclu 0 0 | ide | | Sign lude ! 0 0 | Stop Si Inclu | ide |
| Volume Module Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol.: | 6 544 1.32 1.56 8 847 1.00 1.00 0.86 0.86 9 985 0 0 9 985 | 1.32 1.3 0 1.00 1.0 0.86 0.8 0 | 0 631 2 1.56 0 983 0 1.00 6 0.86 0 1143 0 0 | 20 1.32 26 1.00 0.86 31 0 | 1.32 1.3 | 4 4 0 1.00 | 0 0 1.32 1.32 0 0 1.00 1.00 0.86 0.86 0 0 0 0 | 0 1.32 0 1.00 0.86 0 |
| Critical Gap Critical Gp: FollowUpTim: Capacity Mode Cnflict Vol. Potent Cap.: Move Cap.: Volume/Cap: | 4.1 xxxx 2.2 xxxx | xxxxx xxxx xxxxx xxx xxxxx xxx | x xxxx x xxxx x xxxx x xxxx x xxxx x xxxx | XXXXX XXXXX XXXXX XXXXX | | 0 3.3 2 1158 8 241 7 241 | XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX | XXXXX XXXXX XXXXX XXXXX |
| Level Of Servaueue: Stopped Del: LOS by Move: Movement: Shared Cap.: SharedQueue: Shrd StpDel: Shared LOS: ApproachDel: ApproachLOS: | 0.0 xxxx 11.1 xxxx 8 * LT - LTR xxxx xxxx xxxx xxxx | XXXXX XXXX XXXXX XXXX * - RT LT XXXXX XXX | X XXXX + - LTR X XXXX X XXXX X XXXX | XXXXX + RT XXXXX XXXXX | LT - LT xxxx - S xxxxx - 4 | R - RT 55 xxxxx 7 xxxxx 1 xxxxx | * · * LT - LTR | XXXXX * - RT XXXXX XXXXX |

Intersection #8 OR 11/ 4th Avenue

Kittelson & Associates, Inc. #6743 Milton-Freewater STP and TSP Update - Milton-Freewater, OR 2025 Three-Lane Alternative, Weekday PM Peak Hou

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection | #7 OR 11/7 | th Avenue - | Westbour | areessas d | ***** | **** |
|---|---|---|--|--|----------------------------|--|
| Average Delay | / (sec/veh) | ************************************** | Worst (| ase Level | Of Service | C[24.4] |
| Approach: Movement: | North Bo L - T | R L | uth Bound | | t Bound T - R | West Bound L T R |
| Control: Rights: Lanes: | Uncontro Inclu 1 0 0 | iled ^{II} Un de | controlle Include 0 0 1 | I | p Sign nclude 1! 0 0 | Stop Sign Include 0 0 1! 0 0 |
| Volume Module Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol.: | 0 544 1.32 1.56 0 847 1.00 1.00 0.86 0.86 0 985 0 0 | 3 22 1.00 1.00 0.86 0.86 3 26 0 0 | 1.56 1. 983 1.00 1. 0.86 0. 1143 | 0 0 0 32 1.32 1 0 0 0 1.00 1 86 0.86 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0 0 | 1 0 9 1.32 1.32 1.32 1 0 12 1.00 1.00 1.00 0.86 0.86 0.86 2 0 14 0 0 0 0 2 0 14 |
| Critical Gap Critical Gp:: FollowUpTim:: Capacity Modu Cnflict Vol: Potent Cap.: | <pre>KXXXX XXXX KXXXX XXXX [Jle: XXXX XXXX</pre> | xxxxx 2.2 xxxxx 988 | XXXX XXX XXXX XXX | | xxx xxxxx xxx xxxxx | 6.4 xxxx 6.2 3.5 xxxx 3.3 |
| Move Cap.: Volume/Cap: | XXXX XXXX XXXX XXXX | xxxxx 699 xxxx 0.04 | XXXX XX | XX XXXX X | XXX XXXXX | 51 xxxx 303 50 xxxx 303 0.03 xxxx 0.05 |
| Level Of Service: Stopped Del: LOS by Move: Movement: | KXXXX XXXX | xxxxx 0.1 xxxxx 10.3 * B | * * * * * * * * * * * * * * * * * * * | XX XXXXX X | * * * . | XXXXX XXXX XXXXX |
| Shared Cap.: SharedQueue:: | XXXX XXXX | XXXX XXXX XXXXX XXXXX XXXXX XXXXX | - LTR - F XXXX XXX XXXX XXX XXXX XXX XXXXX | (XX XXXX (XX XXXXX X (XX XXXXX X | XXXXX 0 | LT - LTR - RT XXXX 201 XXXX XXXXX 0.2 XXXXX XXXXX 24.4 XXXX * C * |

Kittelson & Associates, Inc. #6743 Milton-Freewater STP and TSP Update - Milton-Freewater, OR 2025 Three-Lane Alternative, Weekday PM Peak Hou

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative) · 本中自由有专业主义企业主义的,并有主义的,并不是自己的,并不是一个的,并不是一个的,并不是一个的,并不是一个的,并不是一个的。

Average Delay (sec/veh): Worst Case Level Of Service: Approach: North Bound South Bound East Bound West Bound Movement: L - T - R L - T - R L - T - R ------|| |-------Control: Uncontrolled Uncontrolled Stop Sign Stop Sign Rights: Include Include Include Include Lanes: 1 0 0 1 0 1,0010 0 0 1! 0 0 0 0 1! 0 0 Volume Module: Base Vol: Growth Adj: 1.32 1.52 1.32 1.32 1.52 1.32 1.32 1.32 1.32 1.32 1.32 1.32 Initial Bse: 5 876 11 1013 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 PHF Adj: PHF Volume: 6 1007 12 1**16**4 6 Reduct Vol: 0 0 0 0 Final Vol.: 6 1007 12 1164 Critical Gap'Module: Critical Gp: 4.1 xxxx xxxxx 4.1 xxxx xxxxx 7.1 6.5 FollowUpTim: 2.2 xxxx xxxxx 2.2 xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 Capacity Module: Cnflict Vol: 1170 xxxx xxxxx 1011 xxxx xxxxx 2226 2215 1167 2214 2215 1009 Potent Cap.: 597 xxxx xxxxx 685 xxxx xxxxx 31 44 238 32 44 294 Move Cap.: 597 xxxx xxxxx 685 xxxx xxxxx 27 43 238 Volume/Cap: 0.01 xxxx xxxx 0.02 xxxx xxxx 0.22 0.04 0.01 0.05 0.04 0.09 Level Of Service Module: Queue: LOS by Move: B * В LT - LTR - RT LT ~ LTR - RT LT - LTR - RT LT - LTR - RT SharedQueue:xxxxx xxxx xxxxx xxxxx xxxxx xxxxx 0.9 xxxxx xxxxx 0.6 xxxxx Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxxx xxxxx 144 xxxxx xxxxx 31.1 xxxxx Shared LOS: n ApproachDel: 31.1 ApproachLOS:

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Level Of Service Computation Report 2000 HCM Operations Method (Base Volume Alternative)

| 200 |) HCM Operat | ions Method (| Base Volume | Alternative | 2) (前者有用或者的现在分词 | | | | | | |
|---|----------------------------------|------------------------|-------------------------|----------------------------|----------------------------------|--|--|--|--|--|--|
| Intersection #9 Main Street/OR11/ 2nd Ave | | | | | | | | | | | |
| <pre>Eycle (sec): Loss Time (sec):</pre> | 100 12 (Y+R | | itical Vol. | /Cap. (X): / (sec/veh): | 0.811 31.9 | | | | | | |
| Optimal Cycle: | 80 80 | - 4 Sec) A | vel Of Serv | /ice: | C | | | | | | |
| Approach: N Movement: L | orth Bound | South Boo | | st Bound | West Bound L - T - R | | | | | | |
| | | [[| 2 - 11 - 2 | | | | | | | | |
| Control: Rights: | Permitted Ignore | Permiti Includ | | it Phase Include | ' Split Phase Include | | | | | | |
| |) | 0 0 0 | 0 0 | 0 0 | 0 0 0 | | | | | | |
| A'4.4 | | -111 | | | | | | | | | |
| Volume Module: >: Base Vol: | > Count Date 7 187 398 | | 12 5 | 0 9 | 481 31 6 | | | | | | |
| | 2 1.61 1.61 9 301 641 | 1.32 1.61 0 304 | 1.32 1.32 16 7 | 1.32 1.32 0 12 | 1.61.1.32 1.32 775 41 8 | | | | | | |
| User Adj: 1.0 | 1.00 0.00 | 1.00 1.00 | 1.00 1.00 | 1.00 1.00 | 1.00 1.00 1.00 | | | | | | |
| PHF Volume: 1 | | | 0.92 0.92 17 7 | 0 13 | 842 44 9 | | | | | | |
| Reduct Vol: Reduced Vol: 1 | 0 0 0 0 327 0 | 0 0 0 33 1 | 0 0 17 7 | 0 0 | 0 0 0 842 44 9 | | | | | | |
| PCE Adj: 1.0 | 0 1.00 0.00 0 1.00 0.00 | 1.00 1.00 | 1.00 1.00 | | 1.00 1.00 1.00 1.00 1.00 1.00 | | | | | | |
| Final Vol.: 1 | | 0 331 | 17. 7 | 0 13 | 842 44 9 | | | | | | |
| Saturation Flow | Module: | | | |] | | | | | | |
| | 0 1800 1800 7 0.97 1.00 | 1800 1800 1.00 0.97 | 1800 1800 0.97 0.88 | 1800 1800 1.00 0.88 | 1800 1800 1800 0.93 0.96 0.96 | | | | | | |
| Lanes: 0.0 | 3 0.97 1.00 | 0.00 0.95 | 0.05 0.36 | | 1.00 0.84 0.16 1676 1442 279 | | | | | | |
| Final Sat : 5 | 2 1696 1800 | 0 1665 | 87 565 | | | | | | | | |
| Capacity Analysi Vol/Sat: 0.1 | s Module: 9 0.19 0.00 | 0.00 0.20 | 0.20 0.01 | 0.00 0.01 | 0.50 0.03 0.03 | | | | | | |
| Crit Moves: | | *** | *** | | 青宝青青 | | | | | | |
| | 9 0 79 0 00 | 0.00 0.81 | 0.24 0.02 0.81 0.81 | 0.00 0.81 | 0.81 0.05 0.05 | | | | | | |
| Delay/Veh: 44. User DelAdj: 1.0 | 7 44.7 0.0 0 1.00 1.00 | 0.0 46.7 1.00 1.00 | 46.7 149.1 1.00 1.00 | 0.0 149.1 1.00 1.00 | 19.5 7.5 7.5 1.00 1.00 1.00 | | | | | | |
| | 7 44.7 0.0 | 0.0 46.7 | 46.7 149.1 | 0.0 149.1 | 19.5 7.5 7.5 23 1 1 | | | | | | |
| 表示是可能基準等中午年中午中 2017年12日 15 | **** | ***** | ********* | ********** | ****** | | | | | | |

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Appendix G

2004 Traffic Operations Analysis Worksheets – Recommended Plan Page 1-1

AM-3Lane-Reco

Thu Jun 2, 2005 14:57:23
Kittelson & Associates, Inc. Project #6743

Milton-Freewater STP and TSP Update - Milton-Freewater, OR

2004 Recommended Three-Lane Alternative, Weekday AM Peak Hour

Page 2-1

Kittelson & Associates, Inc. Project #6743 Milton-Freewater STP and TSP Update - Milton-Freewater, OR 2004 Recommended Three-Lane Alternative, Weekday AM Peak Hour

Scenario Report

Scenario:

AM-3Lane-Reco

Command: Volume: Geometry: AM-3Lane-Reco

Al

3-lane-Reco

Impact Fee: Trip Generation: Default Impact Fee Default Trip Generation Default Trip Distribution

Trip Distribution: Paths: Routes:

Default Paths Default Routes

Configuration:

Default Configuration

Impact Analysis Report Level Of Service

Intersection Base Change Future V/ Del/ Del/ V/ în-LOS Veh С LOS Veh # 1 OR 11/ 14th Ave C 17.3 0.000 C 17.3 0.000 + 0.000 D/V # 2 Main Street-OR11/ 12th Ave E 38.4 0.000 E 38.4 D.000 + 0.000 D/V 3 Main Street - OR 11/ 10th Ave 21.4 0.000 C 21.4 0.000 + 0.000 D/V 4 Main Street - OR 11/ 9th Ave 25.2 0.000 D 25.2 0.000 + 0.000 D/V # 5 Main Street-OR11/ 8th Ave 17.7 0.000 C 17.7 0.000 :+ 0.000 D/V 6 OR 11/7th Ave - Eastbound 24,5 0.000 $C = 24.5 \ 0.000 + 0.000 \ D/V$ # 7 OR 11/7th Avenue - Westbound 14.0 0.000 B 14.0 0.000 + 0.000 D/V 8 OR 11/ 4th Avenue 26.2 0.000 D 26.2 0.000 + 0.000 D/V # 9 Main Street/OR11/ 2nd Ave C 20.4 0.239 C 20.4 0.239 + 0.000 D/V

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Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 OR 11/ 14th Ave

| Intersection #1 OR 11/ 14th A | Ve | | |
|--|---|---|---|
| Average Delay (sec/veh): | 3.9 Worst Case | Level Of Servic | e: [C[17.3] |
| Approach: North Bound Movement: L - T - R | South Bound L T R | East Bound L - T - R | West Bound |
| Control: Uncontrolled Rights: Include Lanes: 0 0 0 1 0 | Uncontrolled Include 1 0 1 0 0 | Stop Sign Include 0 0 0 0 0 | Stop Sign I Include |
| Volume Module: >> Count Date: Base Vol: 0 323 13 Growth Adj: 1.00 1.18 1.00 Initial Bse: 0 381 13 User Adj: 1.00 1.00 1.00 PHF Adj: 0.70 0.70 0.70 PHF Volume: 0 544 19 Reduct Vol: 0 0 0 Final Vol.: 0 544 19 | 108 259 0 1.00 1.18 1.00 108 306 0 1.00 1.00 1.00 0.70 0.70 0.70 154 437 0 | 0 0 0 1.00 1.00 1.00 0 0 0 1.00 1.00 1.0 | 12 0 152 1.00 1.00 1.00 12 0 152 1.00 1.00 1.00 0.70 0.70 0.70 17 0 217 0 0 0 |
| Critical Gap Module: Critical Gp:xxxxx xxxx xxxxx FollowUpTim:xxxxx xxxx xxxxx | 4.1 xxxx xxxxx 2.2 xxxx xxxxx | XXXXX XXXX XXXXX XXXXX XXXX XXXXX | 6.4 xxxx 6.2 3.5 xxxx 3.3 |
| Capacity Module: Cnflict Vol: xxxx xxxx xxxxx Potent Cap.: xxxx xxxx xxxx Move Cap.: xxxx xxxx xxxx Volume/Cap: xxxx xxxx xxxx | 563 XXXX XXXXX 1008 XXXX XXXXX 1008 XXXX XXXX 0.15 XXXX XXXX | XXXX XXXX XXXXX XXXX XXXX XXXX | 1299 xxxx 554 180 xxxx 536 159 xxxx 536 0.11 xxxx 0.41 |
| Level Of Service Module: Queue: XXXXX XXXX XXXXX Stopped Del:XXXXX XXXX XXXXX LOS by Move: * * * Movement: LT - LTR - RT Shared Cap.: XXXX XXXX XXXXX SharedQueue:XXXXX XXXX XXXXX Shared LOS: * * | 9.2 xxxx xxxxx A * * LT - LTR - RT xxxx xxxx xxxxx xxxx xxxx xxxxx | XXXX XXXX XXXX XXXXX XXXX | 30.4 xxxx 16.2 0 * C LT - LTR - RT xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx |
| ApproachDel: xxxxxx ApproachLOS: * | XXXXXX | XXXXXX * | 17.3 C |

Kittelson & Associates, Inc. Project #6743 Milton-Freewater STP and TSP Update - Milton-Freewater, OR 2004 Recommended Three-Lane Alternative, Weekday AM Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 Main Street-OR11/ 12th Ave Average Delay (sec/veh): 2.1 Worst Case Level Of Services North Bound South Bound Movement: L - T - R L - T - R L - T - R L - T - R .-----||------| Control: Uncontrolled Uncontrol Led Stop Sign Stop Sign Rights: Include Include Include Include 1 0 0 1 0 0 0 1! 0 0 Lanes: 1 0 0 1 0 0 0 1! 0 0 Volume Module: >> Count Date: 7 Dec 2004 << 4 450 10 358 Growth Adj: 1.00 1.18 1.00 1.00 1.18 1.00 1.00 1.00 1.00 1.00 1.00 Initial Bse: 4 531 10 422 36 1,00 1,00 1.00 1.00 1.00 1.00 User Adi: 1.00 1.00 1.00 1.00 1.00 PHF Adj: PHF. Volume: 5 664 13 528 9 45 3 Я ۵ Reduct Vol: 0 0 0 Ω n Final Vol.: 5 664 13 528 9 45 3 Critical Gap Module: Critical Gp: 4.1 xxxx xxxxx 4.1 xxxx xxxxx 7.1 6.5 6.2 FollowUpTim: 2.2 xxxx xxxxx 2.2 xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3 Enflict Vol: 537 xxxx xxxxx 666 xxxx xxxxx 1242 1234 Potent Cap.: 1031 xxxx xxxxx 923 xxxx xxxxx 153 178 Move Cap.: 1031 xxxx xxxxx 923 xxxx xxxxx 144 175 551 154 177 464 551 148 174 464 Volume/Cap: 0.00 xxxx xxxx 0.01 xxxx xxxx 0.31 0.01 0.01 0.03 0.01 0.04 Level Of Service Module: Queue: 0.0 xxxx xxxxx Stopped Del: 8.5 xxxx xxxxx LOS by Move: A * * LT - LTR - RT LT - LTR - RT LT - LTR - RT Movement: SharedQueue:xxxxx xxxx xxxxx xxxxx xxxxx xxxxx 1.4 xxxxx xxxxx 0.2 xxxxx Shared LOS: E С 16.9 ApproachDel: XXXXXX XXXXXX 38.4 ApproachLOS:

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Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| を可求を支出を支出を支出を支出を支出を支出を支出を支出を支出を支出を支出を支出を支出を | 1911年11220 PECHOO (BAS | s volume atternat | 1 VC) |
|---|--|--|---|
| Intersection #3 Hain Stro | get - OR 11/ 10th Ave | | |
| Average Delay (sec/veh): | 0.5 Worst Cas | e Level Of Servic | e; C[21.4] |
| Approach: North Bour Movement: L - T - | nd South Bound | East Bound L - T - R | West Bound |
| Control: Uncontroll Rights: Include Lanes: 1 0 0 1 | e Include | Stop Sign Include 0 0 1! 0 0 | Stop Sign Include 0 0 1! 0 0 |
| Initial Bse: 5 569 User Adj: 1.00 1.00 1 | 1 4 369 8 1.00 1.00 1.15 1.00 1 4 424 8 1.00 1.00 1.00 1.00 0.88 0.88 0.88 1 5 482 0 0 0 0 | 1.00 1.00 1.00 7 1 5 1.00 1.00 1.00 0.88 0.88 0.88 8 1 6 | 1 1 1 11 |
| Critical Gap Module: Critical Gp: 4.1 xxxx xx FollowUpTim: 2.2 xxxx xx | | | 7.1 6.5 6.2 3.5 4.0 3.3 |
| Capacity Module: Cnflict Vol: 491 xxxx xx Potent Cap.: 1D72 xxxx xx Move Cap.: 1072 xxxx xx Volume/Cap: 0.01 xxxx x | xxxx 938 xxxx xxxx | 1 7 4 198 585 167 196 585 | 1158 1159 647 175 197 474 171 195 474 0.01 0.01 0.03 |
| Level Of Service Module: Queue: 0.0 xxxx xx Stopped Del: 8.4 xxxx xx LOS by Move: A * | | XXXXX XXXX XXXXX | XXXXX XXXX XXXXX |
| Movement: LT - LTR - Shared Cap: xxxx xxxx xx SharedQueue:xxxxx xxxx xx Shared LOS: * * | ***** ***** **** ***** ***** ***** **** ***** | xxxx 234 xxxxx xxxxx 0.2 xxxxx xxxxx 21.4 xxxxx * C * | xxxxx 0.1 xxxxx xxxxx 14.8 xxxxx * B * |
| ApproachDel: xxxxxx ApproachLOS: * | × xxxxx | 21.4 C | 14.8 B |

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection | | - OR 11/ 9th Ave | 大中大大衛衛衛衛衛衛衛衛衛衛衛 | · · · · · · · · · · · · · · · · · · · |
|---|--|--|---|---|
| Average Delay | (sec/veh): | 0.8 Worst Cas | e Level Of Service | o: 0[25.2] |
| Approach: Movement: | North Bound L - T - R | South Bound L - T - R | East Bound L - T - R | West Bound L - T - R |
| Control: Rights: Lanes: | Uncontrolled Include 1 0 0 1 0 | Uncontrolled Include 1 0 0 1 0 | Stop Sign Include 0 0 1! 0 0 | Stop Sign Include 0 0 1! 0 0 |
| Base Vol: Growth Adj: Initial Bse: User Adj: | : >> Count Date 1 508 5 1.00 1.22 1.00 1 620 5 1.00 1.00 1.00 0.91 0.91 0.91 1 681 5 0 0 0 1 681 5 | 22 Dec 2004 << 15 371 19 1.00 1.22 1.00 15 453 19 1.00 1.00 1.00 0.91 0.91 0.91 16 497 21 0 0 0 | 1.00 1.00 1.00 11 1 6 1.00 1.00 1.00 0.91 0.91 0.91 12 1 7 0 0 0 | 4 1 13 1.00 1.00 1.00 4 1 13 1.00 1.00 1.00 0.91 0.91 0.91 4 1 14 0 0 0 0 4 1 14 |
| Critical Gap N Critical Gp: FollowUpTim: | 4.1 xxxx xxxxx | | | 7.1 6.5 6.2 3.5 4.0 3.3 |
| Potent Cap.: 'Move Cap.: | le: 518 xxxx xxxxx 1048 xxxx xxxxx 1048 xxxx xxxxx J.00 xxxx xxxx | 687 xxxx xxxxx 907 xxxx xxxxx 907 xxxx xxxxx 902 xxxx xxxx | 155 179 569 147 17 6 569 | 1231 1237 684 156 177 452 151 174 452 0.03 0.01 0.03 |
| · SharedQueue:xx | 0.0 xxxx xxxxx 8.4 xxxx xxxxx A * * LT - LTR - RT xxx xxxx xxxx xxx xxxx xxxxx | 9.0 xxxx xxxxx A * * LT - LTR - RT XXX XXXX XXXXX XXXX XXX XXXX XXXX XXX | | XXXXX XXXX XXXXX |

ApproachLOS:

AM-3Lane-Reco

ApproachLOS:

Kittelson & Associates, Inc. Project #6743 Milton-Freewater STP and TSP Update - Milton-Freewater, OR 2004 Recommended Three-Lane Alternative, Weekday AM Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Main Street-OR11/ 8th Ave

| Intersection | | i Street-C | | | | | ***** | ***** | **** | **** | |
|--|--|---|--|--|---|-----------------------------------|--|---|-------------------------------------|---------------------------|---|
| Average Delay | | and a supplemental district | 0.9 | Wors | t Cas | Leve | Of S | | | | 17.7] |
| Approach: Movement: | | Bound T - R | , L - | ith Bo | - R | | st Bo | | | st Bo | |
| Control: Rights: Lanes: | In | ntrolled ' nclude 0 1 0 | Und | inclu Inclu | illed ide | | iop Si Incli 1! | ıde | | op Si Inclu | ıde |
| Volume Module Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol: | 8 5 1.00 1. 8 6 1.00 1. 0.88 0. | 522 2 15 1.00 500 2 00 1.00 88 0.88 582 2 0 0 | 29 No 3 -1.00 3 1.00 0.88 3 0 | 392 1.15 451 1.00 0.88 512 0 | 15 1.00 15 1.00 0.88 17 0 | 25 1.00 0.88 28 0 | 1 1.00 1 1.00 0.88 1 0 | 11 1.00 11 1.00 0.88 13 0 | 1.00 2 1.00 0.88 2 0 | 1.00 0.88 1 | 12 1.00 12 1.00 0.88 14 0 |
| Critical Gap Critical Gp: FollowUpTim: | 4.1 xx | XXXXX XXX | | | XXXXX | | 6.5 4.0 | 6.2 3.3 | 7.1 3.5 | 6.5 4.0 | 6.2 3.3 |
| Volume/Cap: | 529 xx 1038 xx 1038 xx xxxx xx 0.01 xx | XX XXXX XX XXXX XX XXXX XX XXXX | 909 909 xxxx | XXXX XXXX | XXXXX XXXXX XXXXX XXXXX | 1236 154 147 277 0.10 | | 521 560 560 ××××× 0.02 | 1236 154 149 280 0.01 | 177 175 296 | 683 453 453 ×xxxx 0.03 |
| Level Of Servane Comped Oel: LOS by Move: Movement: Shared Cap.: SharedQueue: Shrd StpDel: Shared LOS: ApproachOel: | 0.0 xx 8.5 xx A LT - L xxxx xx | XX XXXXX XX XXXXX X R RT XX XXXXX XX XXXXX XX XXXXX XX XXXXX XX XXXXX X XXXXX | 9.0 A LT - XXXX XXXXX XXXXX | LTR XXXX XXXX | XXXXX - RT XXXXX XXXXX | XXXX XXXXX XXXXX | XXXX * LTR 326 0.4 | XXXXX - RT XXXXX XXXXX | LT - | **** LTR 405 0.1 | XXXXX - RT XXXXX XXXXX |
| 4 | 7174711 | | ,,, | ., | | | | | | | |

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Kittelson & Associates, Inc. Project #6743 Milton-Freewater STP and TSP Update - Milton-Freewater, OR 2004 Recommended Three-Lane Alternative, Weekday AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Mase Volume Alternative)

Intersection #6 OR 11/7th Ave - Eastbound Average Delay (sec/veh): 0.2 Worst Case Level Of Services Approach: North Bound South Bound East Bound Movement: L - T - K L - T - R L - T - R L - T - R |------| -------Uncontrolled Uncontrolled Control: Stop Sign Stop Sign Rights: Include Include Include Include 0 0 1! 0 0 0 1 0 1 0 0 1 0 1 0 0 0 11 0 0 Lanes: Volume Module: Base Vol: 2 556 0 408 Growth Adj: 1.00 1.18 1.00 1.00 1.18 1.00 1.00 1.00 1.00 1.00 1.00 1.00 Initial Bse: 2 656 0 481 13 User Adj: 1.00 1.00 1.0Ò 1.00 1.00 1.00 1.00 1.00 1.00 0.70 0.70 0.70 0.70 0.70 0.70 0.70 0.70 PHF Adj: 0.70 0.70 0.70 0.70 PHF Volume: 3 937 19 0 688 10 n Reduct Vol: 0 0 n 0 n 3 937 0 688 Final Vol.: 19 10 Critical Gap Module: Critical Gp: 4.1 xxxx xxxxx xxxxx xxxxx xxxxx 6.8 6.5 6.9 xxxxx xxxx xxxxx FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3 xxxxx xxxx xxxxx Cnflict Vol: 706 xxxx xxxxx xxxx xxxx xxxx 1171 1640 353 XXXX XXXX XXXXX Potent Cap.: 888 xxxx xxxxx xxxx xxxx xxxx 189 101 649 xxxx xxxx xxxxx Move Cap.: 888 xxxx xxxxx xxxx xxxx xxxx 188 101 649 xxxx xxxx xxxx xxxxx Volume/Cap: 0.00 xxxx xxxx xxxx xxxx xxxx 0.05 0.01 0.00 xxxx xxxx xxxx Level Of Service Module: LOS by Move: A Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT IT - LTR - RT SharedQueue: 0.0 xxxx xxxxx Shrd StpDel: 9.1 xxxx xxxxx 9.0 xxxx xxxxx xxxxx 24.5 xxxxx xxxxx xxxx xxxxx Shared LOS: Α С ApproachOel: XXXXXX XXXXXX XXXXXX

Intersection #8 OR 11/ 4th Avenue

Thu Jun 2, 2005 14:57:23

Kittelson & Associates, Inc. Project #6743 Milton-Freewater STP and ISP Update - Milton-Freewater, OR 2004 Recommended Three-Lane Alternative, Weekday AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 OR 11/7th Avenue - Westbound

| As a first of the second secon | and the second second | 444 874 | | | | |
|--|------------------------|--|---------------------------------------|-----------------------|--|------------------------------------|
| Averago Delay (so | se Fireh Ya | 0.7 | Heret Cone | 10401 06 | C | D . 4/ 01 |
| (0) | Charles Telling | 0.5 | worst tase | Level Of | zervice: | BI 14.UI |
| 在我自己也也没有我们就不会在这个 | 化自有复食 食會企业 | · 英国本语的 10 10 10 10 10 10 10 10 10 10 10 10 10 | | | ت کرنے کا بھا کا تھا تھا تھا تھا تھا تھا | والمتعالم المتحالة المالية المالية |
| the manner of the agreement where we are because it | ARL DESIGNATION OF THE | rational and activities | out the second of the contract of the | DESCRIPTION OF STREET | 思想中世界思思 克鲁克德克 | |
| | | | | | | |

| Approach: Movement: | North Bo L - T | | South Bo L - T | | | ist Bo | | | st Bo | |
|--|--|-------------|---|-------------------------------------|-------------------------------------|----------------|-------------------------------------|-------------------------------------|------------------|---|
| Control: Rights: Lanes: | Uncontro Inclu | ıde | Uncontro Inclu 0 1 0 | ıde | | op Si Incli | ıde | | op Si Inclu | ıde |
| Volume Module Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol: | 0 556 1.00 1.18 0 656 1.00 1.00 0.70 0.70 0 937 0 0 937 | 1 1.00 1 | 7 408 .00 1.18 7 481 .00 1.00 .70 0.70 10 688 0 0 10 688 | 0 1.00 0 1.00 0.70 0 | 0 1.00 0 1.00 0.70 0 | 1.00 | 0 1.00 0 1.00 0.70 0 | 1.00 2 1.00 0.70 3 0 | 1.00 | 16 1.00 16 1.00 0.70 23 0 |
| Critical Gap Critical Gp:: FollowUpTim:: | XXXX XXXX | xxxxx (| 4.1 xxxx 2.2 xxxx | | | | | | xxxx xxxx | 6.9 3.3 |
| Capacity Modu Cnflict Vol: Potent Cap.: Move Cap.: Volume/Cap: | XXXX XXXX XXXX XXXX XXXX XXXX | XXXXX | 939 xxxx 726 xxxx 726 xxxx 726 xxxx | XXXXX | XXXX | XXXX | XXXXX XXXXX XXXXX XXXXX | | XXXX XXXX | 469 546 546 0.04 |
| Level Of Serv Queue: Stopped Del: LOS by Move: Movement: Shared Cap.: | XXXXX XXXX XXXXX XXXX LT - LTR | XXXXX 1 | 0.0 xxxx 0.0 xxxx B * LT - LTR | XXXXX * - RT | ***** | XXXX LTR | XXXXX | LT - | XXXX * LTR | xxxxx |
| SharedQueue: Shrd StpDel: Shared LOS: ApproachDel: ApproachLOS: | XXXX 0.0 | XXXXX | 0.0 xxxx 0.0 xxxx 8 * xxxxxx | XXXXX | XXXXX XXXXX | XXXX | XXXXX | | 0.2 | XXXXX |

Kittelson & Associates, Inc. Project #6743 Milton-Freewater STP and TSP Update - Milton-Freewater, OR 2004 Recommended Three-Lane Alternative, Weekday AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

| **** | **** | ******* | **** | ***** | ***** | *********** |
|---|---|---|---|--|---|--|
| y (sec/veh |): | 0.4 Nor | st Case | Level | Of Service | e: D[Z6.2] |
| L - T | - R . | L - T. | - R | . L - | T - R | |
| Uncontr Incl | olled ' ude | Uncontr Incl | olled ude 10 | Sto I | p Sign nclude | ! |
| 1.00 1.15 3 662 1.00 1.00 0.78 0.78 4 849 0 0 | 1.00 1.00 0.78 1 0 | 1.00 1.15 5 490 1.00 1.00 0.78 0.78 6 628 0 0 | 1.00 1.00 1.00 0.78 | 5 1.00 1 | 1 .00 .00 1.00 .78 0.78 | 1 1 1 10 0 1.00 1.00 1.00 |
| Module: 4.1 xxxx 2.2 xxxx | XXXXX XXXXX | 4.1 xxxx 2.2 xxxx | XXXXX | 7.5 3.5 | | |
| 949 xxxx 949 xxxx | XXXXX | 784 xxxx 784 xxxx | XXXXX | 177 170 | 123 68 122 68 | 7 147 123 583 7 144 122 583 |
| 0.0 xxxx 8.8 xxxx A * LT - LTR xxxx xxxx 0.0 xxxx 8.8 xxxx A * | XXXXX XXXXX - RT XXXXX XXXXX XXXXX | 9.6 xxxx A = LT - LTR xxxx xxxx 0.0 xxxx 9.6 xxxx A * | XXXXX + - RT XXXXX XXXXX XXXXX * | LT - xxxx xxxxx xxxxx xxxxx | LTR - RT 179 xxxxx 0.2 xxxxx 6.2 xxxxx | X XXXXX XXXX XXXX |
| | North B L - T Uncontrol 1 0 1 0 1 3 576 1.00 1.00 0.78 4.849 0 0 4 4.849 0 0 4 4.1 xxxx 2.2 xxxx Ule: 629 xxxx 949 xxxx 949 xxxx 949 xxxx 949 xxxx 949 xxxx 1 - LTR xxxx xxxx 0.00 xxxx A * LT - LTR xxxx xxxx 0.00 xxxx 8.8 xxxx A * | North Bound L - T - R | North Bound South B L - T - R L - T - T - R L - T - T - R L - T - T - R - T - T - T - T - T - T - T | North Bound L - T - R Uncontrolled Include 0 1 0 1 0 0 1 0 1 0 1 0 0 1 0 1 0 0 1 0 1 | North Bound | Uncontrolled Include I |

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Level Of Service Computation Report 2000 HCM Operations Method (Base Volume Alternative)

| 2000 HCM Op | perations Mo | ethod (Base | Volume Alter | native) | alidas (Mestes caption can tils e | | | | | | |
|--|--------------|-------------------------|-------------------------------|-------------------|-----------------------------------|--------------|--|--|--|--|--|
| Intersection #9 Main Street/OR11/ 2nd Ave | | | | | | | | | | | |
| Cycle (sec): 100 Loss Time (sec): 12 | (Y+R = 4 s | Critica sec) Average | l Vol./Cap. | (X): | 0.239 | | | | | | |
| Optimal Cycle: 29 | | | f Service: | ven): | 20.4 | , , | | | | | |
| Approach: North Bou Movement: L - T | - R L | uth Bound T - R | East Bou | R L | Weşt Bo | | | | | | |
| Control: Permiti | ted '' F | Permitted ' Include | Split Pha Includ | se !! | Split Pha Includ | | | | | | |
| Min. Green: 0 0 Lanes: 0 1 1 (| 0 1 1 0 0 | 0 1 1 0 | 00110 | 0 1 | 0 0 | 0 0 | | | | | |
| Volume Module: >> Count | | | | | | | | | | | |
| Base Vol: 14 170 Growth Adj: 1.00 1.22 Initial Bse: 14 207 | | 159 1 1.22 1.00 | 1.00 1.00 | 1.00 1. | | . 1 1.00 | | | | | |
| User Adj: 1.00 1.00 PHF Adj: 0.90 0.90 | | 194 1 1.00 1.00 | 7 0 | 1.00 1. | | 1.00 | | | | | |
| PHF Volume: 16 230 Reduct Vol: 0 0 | 0 0 | | 0.90 0.90 | | 55 21 | 0.90 | | | | | |
| Reduced Vol: 16 230 PCE Adj: 1.00 1.00 | 0 0 | 216 1 | 0 0 8 0 | | 0 0 55 21 | 1 | | | | | |
| MLF Adj: 1.00 1.00 Final Vol.: 16 230 | | 1.00 1.DO | 1.00 1.00 1.00 1.00 8 0 | | 00 1.00 00 1.00 55 21 | 1.00 | | | | | |
| Saturation Flow Module: | | | | | | | | | | | |
| Sat/Lane: 1800 1800 Adjustment: 0.87 0.87 | | 1800 1800 0.93 0.93 | 1800 1800 0.88 1.00 | | 00 1800 94 0.94 | 1800 | | | | | |
| Lanes: 0.13 1.87 Final Sat.: 198 2926 | 1.00 0.00 | 1.99 0.01 3331 17 | 0.39 0.00 618 0 | 0.61 1. 971 31 | 89 0.10 | 0.94 0.01 | | | | | |
| Capacity Analysis Module | | | | 11 | | | | | | | |
| Vol/Sat: 0.08 0.08 Crit Moves: **** | | 0.06 0.06 | 0.01 0.00 | 0.01 0. | 11 0,12 | 0.12 | | | | | |
| Green/Cycle: 0.33 0.33 Volume/Cap: 0.24 0.24 | | 0.33 0.33 0.20 0.20 | 0.05 0.00 0.24 0.00 | | 50 0.50 22 0.24 | 0.50 0.24 | | | | | |
| Delay/Veh: 24.5 24.5 User DelAdj: 1.00 1.00 | | 24.1 24.1 | 46.9 0.0 1.00 1.00 | 46.9 14 | .3 14.4 | 14.4 | | | | | |
| AdjDel/Veh: 24.5 24.5 HCM2kAvg: 3 3 | | 24.1 24.1 | 46.9 0.0 | 46.9 14 | .3 14.4 | 1.00 14,4 | | | | | |
| ********** | ****** | | | *** | 3 4 ******* | 4 ***** | | | | | |

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Page 1-1

PM-3Lane-Reco

Thu Jun 2, 2005 14:57:45 Kittelson & Associates, Inc. Project #6743 Page 2-1

Kittelson & Associates, Inc. Project #6743 Milton-Freewater STP and TSP Update - Milton-Freewater, DR 2004 Recommended Three-Lane Alternative, Weekday PM Peak Hour

Scenarjo Report

Scenario:

PM-3Lane-Reco

Command: Volume:

PM-3Lane-Reco

Geometry: Impact Fee:

Configuration:

Trip Generation:

Trip Distribution: Paths: Routes:

3-lane-Reco Default Impact Fee

Default Trip Generation Default Trip Distribution Default Paths

Default Routes Default Configuration 2004 Recommended Three-Lane Alternative, Weekday PM Peak Hour Impact Analysis Report Level Of Service

Milton-Freewater STP and TSP Update - Milton-Freewater, DR

Intersection Base Future Change Del/ Del/ V/ in LOS Veh LOS Veh # · 1 OR 11/ 14th Ave C 16.9 0.000 C 16.9 0.000 + 0.000 D/V # 2 Main Street-DR11/ 12th Ave E 44.8 0.000 44.8 0.000 + 0.000 D/V # 3 Main Street - OR 11/ 10th Ave F 52.4 0.000 52.4 0.000 + 0.000 D/V 4 Main Street - OR 11/ 9th Ave D 34.6 0.000 34.6 0.000 + 0.000 D/V # 5 Main Street-OR11/ 8th Ave D 25.4 0.000 25.4 0.000 + 0.000 D/V # 6 OR 11/7th Ave - Eastbound D 34.6 0.000 D 34.6 0.000 + 0.000 D/V # 7 OR 11/7th Avenue - Westbound. B 12.4 0.000 B 12.4 0.000 + 0.000 D/V # 8 DR 11/ 4th Avenue D 34.8 0.000 D $34.8 \ 0.000 + 0.000 \ D/V$ # 9 Main Street/OR11/ 2nd Ave B 19.6 0.345 + 0.00D D/V B 19.6 0.345

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection #1 OR 11/ 14th Ave | ,一一一万里,不可不可可可可可可可可可可可可可可可可可可可可可可可可可可可可可可可可可可 | **** |
|---|--|---|
| Average Delay (sec/veh): | 3.5 Worst Case Level Of Service: C[16 | |
| Approach: North Bound Movement: L - T - R | South Bound East Bound West Bour | nd R |
| Control: Uncontrolled Rights: Include Lanes: 0 0 0 1 0 | Uncontrolled Stop Sign Stop Sign Include Include Include 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | e |
| Base Vol: 0 333 6 Growth Adj: 1.00 1.18 1.00 Initial Bse: 0 393 6 User Adj: 1.00 1.00 1.00 | 1.00 1.18 1.00 1.00 1.00 1.00 1.00 1.00 | 134 1.00 134 1.00 0.71 189 |
| Critical Gap Module: Critical Gp:xxxxx xxxx xxxxx FollowUpTim:xxxxx xxxx xxxxx Capacity Module: | 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 xxxx 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 xxxx | 6.2 3.3 |
| Conflict Vol: xxxx xxxx xxxxx Potent Cap.: xxxx xxxx xxxxx Move Cap.: xxxx xxxx xxxxx | 562 XXXX XXXXX XXXX XXXX XXXXX 1530 XXXX 1009 XXXX XXXXX XXXX XXXX 130 XXXX 1009 XXXX XXXX XXXX XXXX XXXX 110 XXXX 0.20 XXXX XXXX XXXX XXXX XXXX 0.10 XXXX | 558 533 533 0.35 |
| Shared Cap.: xxxx xxxx xxxxx xxxxx xxxxx xxxxx xxxxx | 0.8 xxxx xxxxx xxxxx xxxx xxxxx 0.3 xxxx 9.5 xxxx xxxxx xxxxx xxxx xxxx 41.4 xxxx A | XXXX |

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Kittelson & Associates, Inc. Project #6743 Milton-Freewater STP and TSP Update - Milton-Freewater, OR 2004 Recommended Three-Lane Alternative, Weekday PM Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection # | 2 Main Street-C | 0811/ 12th Av | 8 ******** | ********* |
|---|--|--|---|--|
| Average Delay | (sec/veh): | 1.3 Worst | Case Level Of S | ervice: E(44.8) |
| Approach: | North Bound L - T - R | South Bour L - T - | nd East Bo | und West Bound |
| Control: Rights: Lanes: | Uncontrolled Include 1 0 0 1 0 | Uncontrol Include 1 0 0 1 | e Inclu | de Include |
| Base Vol: Growth Adj: 1 Initial Bse: User Adj: 1 PHF Adj: 0 PHF Volume: Reduct Vol: | >> Count Date 1 466 | 37 482 1.00 1.18 37 569 1.00 1.00 0.86 0.86 43 661 0 0 | 21 18 3 1.00 1.00 1.00 21 18 3 1.00 1.00 1.00 0.86 0.86 0.86 24 21 3 0 0 0 24 21 3 | 1 2 2 11 1.00 1.00 1.00 1.00 1 2 2 11 1.00 1.00 1.00 1.00 0.86 0.86 0.86 0.86 1 2 2 13 0 0 0 0 0 1 2 2 13 |
| Critical Gap M Critical Gp: FollowUpTim: | Module: 4.1 xxxx xxxxx 2.2 xxxx xxxxx | 4.1 xxxx x: 2.2 xxxx x: | | 6.2 7.1 6.5 6.2 3.3 3.5 4.0 3.3 |
| Potent Cap.: Move Cap.: | e: 686 xxxx xxxxx 908 xxxx xxxxx 908 xxxx xxxxx).00 xxxx xxxx | 944 xxxx x: 944 xxxx x: | xxxx 117 141 | 674 1404 1414 640 458 118 139 479 458 111 132 479 0.00 0.02 0.02 0.03 |
| Stopped Del: LOS by Move: Movement: Shared Cap.: x SharedQueue:xx | 0.0 xxxx xxxxx 9.0 xxxx xxxxx A * * LT - LTR - RT xxx xxxx xxxx xxx xxxx xxxx | 9.0 xxxx x A ·* LT - LTR - xxxx xxxx x xxxx xxxx x | XXXX XXXXX XXXX RT LT - LTR XXXX XXXX 116 XXXX XXXXX 0.8 | ****** ***** ************************* |

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 Main Street - OR 11/ 10th Ave

| ******** | ***** | *** | LERRY | 1 N F A A | | **** | () () () () | **** | *** | 有有有有 | *** |
|---|--|---|----------------------------------|--|--|--------------------------|--------------------------------|---------------------------------|--|-------------------|---|
| Average Delay | (Sec/Ve | h): ad±eeas | 1.6 | Wor! | st Case | e Leve | Of : | Servici |); | FL | 52.4) |
| Approach: Movement: | North L - T | Bound - R | | սth B։ T | | ., L | ast Bo | - R | We L | st Bo | und R |
| Control: Rights: Lanes: | | rolled lude 1 0 | | incli | ude | S1 | top S Inclu | ign Jde | | op Si Inclu | ıde |
| Volume Module Base Vol: Growth Add: Initial Bse: User Add: PHF Add: PHF Volume: Reduct Vol: Final Vol.: | 5 48 1.00 1.1 5 56 1.00 1.0 0.80 0.8 6 70 | 8 2 5 1.00 1 2 0 1.00 0 0.80 1 3 0 0 | 7 1.00 7 | 531 1.15 611 1.00 0.80 763 0 | 04 << 17 1.00 17 1.00 0.80 21 0 | 19 | 1.00 2 1.00 0.80 3 | 1.00 4 1.00 0.80 5 | 5 1.00 5 1.00 0.80 6 0 | 1.00 | 17 1.00 17 1.00 0.80 21 0 |
| Critical Gap Critical Gp: FollowUpTim: | Module: 4.1 xxx 2.2 xxx | | | | XXXXX XXXXX | 7.1 3.5 | 6.5 4.0 | 6.2 3.3 | 7.1 3.5 | 6.5 4.0 | 6.2 |
| Capacity Mode Cofflict Vol: Potent Cap.: Move Cap.: Volume/Cap: | 10: 785 xxx 834 xxx 834 xxx 0.01 xxx | XXXXX X | 894 894 | XXXX | XXXXX XXXXX XXXXX XXXX | 1519 98 91 0.26 | 1508 122 120 0.02 | 774 402 402 0.01 | 1510 100 96 0.07 | 120 118 | 703 441 441 0.05 |
| Level Of Serv Queue: Stopped Del: LOS by Move: Movement: Shared Cap.: SharedQueue:> Shrd StpDel:> Shared LOS: | 0.0 xxx 9.3 xxx A * LT - LT xxxx xxx xxxx xxx | X XXXXX X XXXXX T R - RT X XXXXX X XXXXX | 9.1 A LT - xxxx xxxx | LTR XXXX XXXX | XXXXX - RT XXXXX XXXXX | LT - | XXXX LTR 106 1.1 | AXXXX - RT XXXXX XXXXX | XXXX XXXXX | LTR 223 0.5 | XXXXX . |
| ApproachLOS: | XXXXX | x | XX | xxxx * | | • | 52.4 F | | | 23.7 C | |

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Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| AND THE STREET WAS A STREET, | my min (1) - | | | | | 200 | | | | |
|--|---|-----------------------------------|---|---|--------------------------------|-------------------------|-------------------------------------|--|----------------------|---|
| Intersection | #4 Main S | treét - C | 12 11/ 9t | | erice a mirro | ***** | | g a k a k i | r ne ne ne ne | ***** |
| Average Delay | (sec/veh |): | .0 Wor | st Case | Level | Of S | ervice | | Df | 34.6) |
| Approach: Movement: | North Bo L T | | South B L - T | | | st Boi | | | est Bo | |
| Control: Rights: Lanes: | Uncontro Incli 1 0 0 | | Uncontr Incl 1 0 0 | ude | | op Sig Includ | de | | op Si Incli 1! | ıde |
| Initial Bse: User Adj: | 2: >> Count 1 522 1.00 1.15 1 600 1.00 1.00 0.89 0.89 1 674 0 0 1 674 | 1.00 1 1.00 1 | 22 Nov 20 31 542 .00 1.15 31 623 .00 1.00 0.89 0.89 35 700 0 0 | 04 << 14 1.00 14 1.00 0.89 16 0 | 9 1.00 9 1.00 0.89 | 1 1.00 | 1.00 5 1.00 0.89 6 0 | 8 1.00 8 1.00 0.89 9 0 | 1.00 | 11 1.00 11 1.00 0.89 12 0 |
| Critical Gap Critical Gp: FollowUpTim: | 4.1 xxxx | | 4.1 xxxx 2.2 xxxx | | 7.1 3.5 | 6.5 4.0 | 6.2 3.3 | 7.1 3.5 | 6.5 4.0 | 6.2 |
| Capacity Modu Cnflict Vol: Potent Cap: Move Cap: Volume/Cap: | le: 716 xxxx 885 xxxx 885 xxxx 0.00 xxxx | XXXXX XXXXX | 677 xxxx 915 xxxx 915 xxxx 915 xxxx | XXXXX | 1462 108 101 0.10 | 131 126 | 708 438 438 0.01 | 1459 108 103 0.09 | 130 125 | 676 457 457 0.03 |
| Level Of Serv Queue: Stopped Del: LOS by Move: Movement: Shared Cap.: Shared Queue:x Shrd StpDel:x Shared LOS: ApproachDel: ApproachLOS: | 0.0 xxxx 9.1 xxxx A * LT - LTR xxxx xxxx xxxx xxxx | XXXXX XXXXX - RT XXXXX X | | XXXXX - RT XXXXX XXXXX | LT - xxxx xxxxx xxxxx * | LTR - 138 > 0.4 > | CXXXX * RT CXXXX CXXXX | XXXXX LT - XXXX XXXXX | LTR 182 0.4 | - RT xxxxx |
| | | | | | | | | - | | |

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Main Street-OR11/ 8th Ave *************** Average Delay (sec/veh): 0.8 Worst Case Level Of Service: Approach: North Bound South Bound Movement: L - T - R L - T - R L - T - R ------------------Uncontrolled Uncontrolled Stop Sign Stop Sign Rights: Include Include Include Include lanes: 1 0 0 1 0 1 0 0 1 0 0 0 1! 0 0 0 0 1! 0 0 Volume Module: >> Count Date: 29 Nov 2004 << Base Vol: 6 527 9 13 578 Growth Adi: 1.00 1.15 1.00 1.00 1.15 1.00 1.00 1.00 1.00 1.00 1.00 Initial Bse: 9 6 606 13 665 43 24 - 3 User Adj: 1.00 1,00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 PHF Adj: 0.81 0.81 0.81 0.81 0.81 0.81 0.81 0.81 0.81 0.81 0.81 PHF Volume: 7 748 11 16 821 53 30 Reduct Vol: 0 n 0 n 0 O Final Vol.: 11 16 821 53 30 Critical Gap Module: Critical Gp: 4.1 xxxx xxxxx 4.1 xxxx xxxxx 7.1 6.5 6.2 FollowUpTim: 2.2 xxxx xxxxx 2.2 xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3 Capacity Module: Cnflict Vol: 874 xxxx xxxxx Potent Cap.: 772 xxxx xxxxx Move Cap.: 772 xxxx xxxxx 759 xxxx xxxxx 1649 1653 852 xxxx xxxxx 80 99 365 79 413 852 xxxx xxxxx 77 97 365 413 Total Cap: XXXXX XXXX XXXXX XXXXX XXXXX 197 215 xxxxx 194 213 xxxxx Volume/Cap: 0.01 xxxx xxxx 0.02 xxxx xxxx 0.15 0.02 0.02 0.02 0.01 0.00 |-----| Level Of Service Module: Stopped Del: 9.7 xxxx xxxxx LOS by Move: A Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT Shared Cap.: xxxx xxxx xxxx xxxx xxxx xxxx xxxx 217 xxxxx 221 xxxxx SharedQueue:xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.7 xxxxx xxxxx 0.1 xxxxx Shared LOS: D С ApproachDel: XXXXXX 21.7 ApproachLUS: C

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Kittelson & Associates, Inc. Project #6743
Milton-Freewater STP and TSP Update - Milton-Freewater, OR
2004 Recommended Three-Lane Alternative, Weekday PM Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #6 OR 11/7th Ave - Eastbound

| **** | **** | ********* | ***** | ***** | ********** |
|---|---|---|--|--|--|
| Average Delay | | 0.9 Wors | t Cose Leve | 1 Of Service | D[34.6] |
| Approach: Movement: | North Bound L - T - | | - R L | ast Bound - T - R | West Bound |
| Control: Rights: Lanes: | Uncontroll Include 0 1 0 1 | Inclu | olled ^{II} S ude | top Sign Include 0 1!0 0 | Stop Sign Include 0 0 1! 0 0 |
| Initial Bse: User Adj: | 6 544 1.00 1.18 1 6 642 1.00 1.00 1 | 0 0 631 .00 1.00 1.18 0 0 745 .00 1.00 1.00 .86 0.86 0.86 0 0 866 0 0 0 0 | 20 31 1.00 1.00 | 1.00 1.00 3 3 1.00 1.00 5 0.86 0.86 3 3 0 0 | 0 0 0 1.00 1.00 1.00 0 0 0 1.00 1.00 1.0 |
| Critical Gap Critical Gp: FollowUpTim: | 4.1 xxxx xx 2.2 xxxx xx | XXX XXXXX XXXX | | | XXXXX XXXX XXXXX |
| Capacity Modu Cnflict Vol: Potent Cap.: Move Cap.: Volume/Cap: | | XXX XXXX XXXX XXX XXXX XXXX | XXXXX 164 XXXXX 163 | | XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX |
| Level Of Serv Queue: Stopped Del: LOS by Move: Movement: Shared Cap.: SharedQueue: Shrd StpDel: Shared LOS: ApproachUel: ApproachLOS: | 0.0 xxxx xx 9.8 xxxx xx A * LT - LTR - xxxx xxxx xx | XXX XXXXX XXXX RT LT - LTR XXX XXXX XXXX XXX 0.0 XXXX | - RT LT xxxxx xxxx xxxxx xxxx xxxxx xxxx | C XXXX XXXXX * LTR - RT C 164 XXXXX C 1.0 XXXXX | XXXXX XXXX XXXXX XXXXX XXXX XXXX LT - LTR - RT XXXX |

Shared, LOS:

ApproachDel:

ApproachLOS:

A

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Kittelson & Associates, Inc. Project #6743 Milton-Freewater STP and TSP Update - Milton-Freewater, OR 2004 Recommended Three-Lane Alternative, Weekday PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 OR 11/7th Avenue - Westbound

Average Dctay (sec/veh): 0.2 Worst Case Level Of Service: B[12.4]

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R

Uncontrolled Stop Sign Uncontrolled Control: Stop Sign Rights: Include Include Include Include 0 1 0 1 0 0 1 0 1 0 0 0 1! 0 0 Lanes: 0 0 1! 0 0 Volume Modulė: Base Vol: 0 544

Initial Bse: 0 642 2 17 745 n n 0 Ω User Adi: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 PHF Adj: 0 746 PHF Volume: 20 866 0 10 Reduct Vol: Ω n n n n . 0 0 746 Final Vol.: 20 866 0 0 10 n

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Kittelson & Associates, Inc.:Project #6743 Milton-Freewater STP and TSP Update - Milton-Freewater, OR 2004 Recommended Three-Lane Alternative, Weekday PM Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #8 OR 11/ 4th Avenue Average Delay (sec/veh): 0.4 Worst Case Level Of Service: Approach: North Bound South Bound West Bound East Bound Movement: L - T - R L - T - R L - T - R L - T - R Control: Uncontrolled Uncontrolled Stop Sign Rights: Include -Include Include Include 0 1 0 1 0 0 1 0 1 0 0 0 1! 0 0 Lanes: 0 0 1! 0 0 Volume Module: Base Vol: Growth Adi: 1.00 1.15 1.00 1.00 1.15 1.00 1.00 1.00 1.00 1.00 1.00 1.D0 Initial Bse: 4 664 3 8 767 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 User Adj: PHF Adj: 5 763 9 882 PHF Volume: 3 5 5 20 Reduct Vol: 0 0 0 0 5 763 9 882 Final Vol.: 3 Critical Gap Module: Critical Gp: 4.1 xxxx xxxxx 4.1 xxxx xxxxx 7.5 6.5 FollowUpTim: 2.2 xxxx xxxxx 2.2 xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3 Capacity Module: 1233 1678 Chflict Vol: 886 xxxx xxxxx 766 xxxx xxxxx 1293 1678 843 xxxx xxxxx 122 96 568 135 96 621 843 xxxx xxxxx 116 94 568 132 94 621 Potent Cap.: 760 xxxx xxxxx Move Cap.: **760 XXXX XXXXX** Volume/Cap: 0.01 xxxx xxxx 0.01 xxxx xxxx 0.04 0.01 0.00 0.01 0.01 0.03 Level Of Service Module: Queue: 0.0 xxxx xxxxx Stopped Oel: 9.8 xxxx xxxxx LOS by Move: A * * LT - LTR - RT LT - LTR - RT LT - LTR - RT Movement: 0.0 xxxx xxxxx xxxxx 0.0 xxxxx xxxxx 0.2 xxxxx SharedQueue: 0.0 xxxx xxxxx 9.3 xxxx xxxxx xxxxx 34.8 xxxxx xxxxx 14.1 xxxxx Shrd StpDel: 9.8 xxxx xxxxx

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tevel Of Service Computation Report 2000 HCM Operations Method (Base Volume Alternative)

| 建中产电影进步市共济进中 市 | 海港用 东 | to the state | *** | **** | **** | **** | *** | and a | **** | ***** | ***** | |
|---------------------------|--------------|----------------|--------------|---------------|----------|---------------------------|-------------|-------|----------------|------------------------|---------------|--|
| Intersection | #9 H | oin St | reet/0 | R 11/ 2 | nd Av | e | | **** | ***** | **** | ***** | |
| Cycle (sec): | | 100 | | | | ritica | l Vol. | /Cap. | (X): | 0. | 345 | |
| Loss Time (se | c): | 12 | (Y+R : | = 49 | ec) Ā | verage | Delay | (sec | /veh): | 19.6 | | |
| Optimal Cycle | .z | 5.5 | | | Ł | evet O | f Serv | /ice: | 'S. 282 282 28 | . В | | |
| | | | | Anti- carrier | ith Bo | a service and a service a | अन्यसम्बद्ध | st Bo | enere unal | | ***** | |
| Approach: Movement: | L v | rth Boi - T | | 1 - | , T | - R | E | . T | - R | West I | | |
| | | | | 1 | | | 1 | · | | | | |
| Control: | | | | | | ted | | | ase ' | Split F | | |
| Rights: | | Ignor | e 0 | | Inclu | ide 0 | 0 | Inclu | de | Incl | | |
| Min. Green: Lanes: | ۔ ن | 0 1 1 1 | | -0 0 | 0 | 1 0 | |) 1! | 0 | 1 0 1 | | |
| | | | | | | | | | | | | |
| Volume Modulė | : >> | Count | Date: | 30 No | v 200 | 14 << | ' | | | | | |
| | 7 | | 398 | . 0 | 189 | | | . 0 | 9 | 481 3 | | |
| | | 1.22 | 1.22 | | 1.22 | 1.00 | 1.00 | 1.00 | 1.00 | 1.22 1.00 587 31 | | |
| Initial Bse: User Adi: | | 228 1.00 | 486 0.00 | 1 00 | 231 | 1.00 | _ | 1.00 | 1.00 | 1.00 1.00 | | |
| | | 0.92 | 0.00 | 0.92 | | 0.92 | | 0.92 | 0.92 | 0.92 0.97 | | |
| | | 248 | 0.00 | 0.72 | | 13 | 5 | | 10 | 638 3 | | |
| Reduct Vol: | | 0 | Õ | Ŏ | 0 | Õ | 0 | 0 | Õ | - 0 (| 0 | |
| | | 248 | 0 | 0 | | 13 | | 0 | 10 | 638 34 | | |
| | | 1.00 | 0.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 1.00 | | |
| MLF Adj: | 1.00 | 1.00 248 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 1.00 638 34 | | |
| Final Vol.: | | | | 1 | | | | | | 030 34 | • | |
| Saturation Fl | ow Mo | odule: | ı | 1 | | | ı | | 1 | t | , | |
| | | 1800 | 1800 | | 1800 | 1800 | | 1800 | 1800 | 1800, 1800 | | |
| | | 0.88 | 1.00 | | 0.92 | 0.92 | | 1.00 | 0.88 | 0.93 0.93 | | |
| Lanes: Final Sat.: | 0.06 | 1.94 3073 | 1.00 1800 | 0.00 | 3164 | 0.10 1 165 | 565 | 0.00 | 0.64 1017 | 1.89 0.09 3177 158 | | |
| | | | | | 3104 | | | | | 177 (30 | | |
| Capacity Anal | ysis | Modul | e: ' | ı | | | I | | . ' | • | ı | |
| | 0.08 | 0.08 | 0.00 | 0.00 | 0.08 | 0.08 | 0.01 | 0.00 | 0.01 | 0.20 0.2 | | |
| Crit Moves: | | **** | | | 0 37 | 0.07 | 0 07 | | **** | **** | | |
| Green/Cycle: | | 0.23 | 0.00 | 0.00 | | 0.23 0.34 | | 0.00 | 0.03 | 0.62 0.62 0.32 0.35 | | |
| | | 32.2 | 0.0 | 0.0 | | 32.1 | 52.4 | 0.0 | 52.4 | 9.2 9.4 | | |
| User DelAdi: | | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 1.00 | | |
| | | 32.2 | 0.0 | | 32.1 | 32.1 | 52.4 | 0.0 | 52.4 | 9.2 9.4 | | |
| HEM2kavg: | 4 | 4 | D | ٥ | 4 | 4. | an all 1 | 0 | 1 | 5 6 | 6 | |
| 在政策的自由申请申申申申 | TEST. | F 2 4 4 6 | 有现象的 市市 | 用声声客 音 | [[] 南京市。 | 罗克罗克克克 | 黄 电 电 电 首 1 | | 正有法式 水市 | "同学主会背害有害力 " | 8.म±क्त्रेन न | |

Appendix H

2025 Traffic Operations Analysis Worksheets -Recommended Plan Page 1-1

AM-3Lane-Reco

Thu Jun 2, 2005 14:55:20

Kittelson & Associates, Inc. - Project #6743 Miton-Freewater STA and TSP Update - Milton-Freewater, OR 2025 Recommended Three-Lane Traffic Condition, Weekday AM Peak Hour

Scenario Report

Scenario:

AM-3Lane-Reco

Command:

AM-3Lane-Reco

Volume:

AM

Geometry: Impact Fee: 3-lane-Reco

Trip Generation: Trip Distribution:

Default Impact Fee Default Trip Generation Default Trip Distribution

Paths:

Default Paths Default Routes

Routes: Configuration:

Default Configuration

2025 Recommended Three-Lane Traffic Condition, Weekday AM Peak Hour Impact Analysis Report Level Of Service

Kittelson & Associates, Inc. - Project #6743 Miton-Freewater STA and TSP Update - Milton-Freewater, OR

Intersection Base Future Change Del/ Del/ V/ in LOS Veh LOS Veh # 1 OR 11/ 14th Ave D 31.9 0,000 $D = 31.9 \ 0.000 + 0.000 \ D/V$ # 2 Main Street-OR11/ 12th Ave F 152.9 0.000 F 152.9 0.000 + 0.000 D/V # 3 Main Street - OR 11/ 10th Ave E 36.4 0.000 E 36.4 0.000 + 0.000 p/V # 4 Main Street - OR 11/ 9th Ave E 49.5 0.000 E 49.5 0.000 + 0.000 D/V # 5 Main Street-OR11/ 8th Ave 0 25.2 0.000 D 25.2 0.000 + 0.000 p/V # 6 OR 11/7th Ave - Eastbound E 44.1 0.000 E 44.1 0.000 + 0.000 D/V # 7 OR 11/7th Avenue - Westbound C 18.9 0.000 C 18.9 0.000 + 0.000 D/V # 8 OR 11/ 4th Avenue E 47.4 0.000 E 47.4 0.000 + 0.000 D/V 9 Main Street/OR11/ 2nd Ave C 21.1 0.316 C 21.1 0.316 + 0.000 D/V

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Intersection #1 OR 11/ 14th Ave

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Level Of Service Computation Report
2000, HCM Unsignalized Method (Base Volume Alternative)

| 有有有自由的类似的复数形式的 | | | | | | | | | | | | |
|--|----------------|------|------------|-----|--------------|----------------------|------------------|--|---------------|-------------------|-------------------------|-------|
| Average Delay | (se | C/V6 | ih): | *** | 6.5 | Worst | Case | Level | of s | ervice: | DJ | 31.91 |
| A CONTRACTOR CONTRACTOR AND ADMINISTRATION OF THE PERSON O | greater, sells | | 1 1 1 1 A. | | 1.15, 601.13 | Malaman, publication | eren ere er er e | 100 CO 10 | 21.1.20 March | লং বিশেষ করিবলৈ ব | 1997 C 1. E N. E. E. S. | W |
| | | | | | | | | | | | | |

| ***** | 兴兴的安全大学大声大声的有关大会大 。 | ********** | ************ | ********* |
|--|---|--|---|---|
| Approach: | | South Bound | East Bound | West Bound |
| Movement: | | L - T - R | L - T - R | L T R |
| Control: | Uncontrolled | Uncontrolled Include 1 0 1 0 0 | Stop Sign | Stop Sign |
| Rights: | Include | | Include | Include |
| Lanes: | 0 0 0 1 0 | | 0 0 0 0 0 | 1 0 0 0 1 |
| Base Vol: Growth Adj: Initial Bse: | 1.32 1.56 1.32 0 503 17 1.00 1.00 1.00 0.70 0.70 0.70 0 719 25 0 0 0 0 719 25 | 108 259 0 1.32 1.56 1.32 143 403 0 1.00 1.00 1.00 0.70 0.70 0.70 204 576 0 0 0 | 0 0 0 1.32 1.32 1.32 0 0 0 1.00 1.00 1.00 0.70 0.70 0.70 0 0 0 0 0 0 0 0 0 | 12 0 152 1.32 1.32 1.32 16 0 201 1.00 1.00 1.00 0.70 0.70 0.70 23 0 287 0 0 0 23 0 287 |
| Critical Gp: | xxxx xxxx xxxx | 4.1 xxxx xxxxx | ***** **** ***** | 6.4 xxxx 6.2 |
| | | 2.2 xxxx xxxxx | | 3.5 xxxx 3.3 |

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Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 Main Street-OR11/ 12th Ave

| ********** | · 大声图 电新年卡卡卡卡卡卡 电影的复数单位 | 涂有有有的产品的有效的企业有效有效 | ********** |
|--|---|--|--|
| Average Delay (sec/veh): | 7.1 Worst Cas | e Level Of Service | es F(152.9) |
| Approach: North Bour | nd South Bound | East Bound L - T - R | West Bound L - T - R |
| Control: Uncontroll Rights: Include Lanes: 1 0 0 1 | e Include | Stop Sign Include 0 0 1! 0 0 | Stop Sign Include 0 0 1! 0 0 |
| Initial Bse: 5 701 User Adj: 1.00 1.00 1 PHF Adj: 0.80 0.80 (| Date: 7 Dec 2004 << 2 10 358 7 1.32 1.32 1.56 1.32 3 13 558 9 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1. | 2 1.32 1.32 1.32 7 48 3 8 9 1.00 1.00 1.00 1.00 0.80 0.80 2 59 3 10 0 0 0 0 | 4 1 20 1.00 1.00 1.00 0.80 0.80 0.80 5 2 25 |
| Critical Gap Module: Critical Gp: 4.1 xxxx xx FollowUpTim: 2.2 xxxx xx | xxxx 4.1 xxxx xxxx xxxx 2.2 xxxx xxxx | | |
| Capacity Module: Cnflict Vol: 709 xxxx xx Potent Cap.: 890 xxxx xx Move Cap.: 890 xxxx xx Volume/Cap: 0.01 xxxx xx | xxxx 768 xxxx xxxxx xxxx 768 xxxx xxxxx | k 81 103 441 k 73 100 441 | 82 102 350 76 99 350 |
| Level Of Service Module: Queue: 0.0 xxxx x: Stopped Del: 9.1 xxxx x: LOS by Move: A * Movement: LT - LTR - Shared Cap.: xxxx xxxx x: SharedQueue:xxxxx xxxx x: Shared LOS: * * ApproachDel: xxxxx x ApproachDel: xxxxxx x ApproachLOS: * | * A * * RT LT - LTR - RT XXXX XXXX XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX | K XXXXX XXXX XXXXX LT - LTR - RT K XXXX 83 XXXXX X XXXXX 4.6 XXXXX | LT - LTR - RT |
| Approacheos: | • * | ' | . • |

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| ********* | *** | *** | | - | *** | **** | *** | | *** | **** | **** |
|---|---|---|--|-----------------------------|---------------------------------|--------------------------|-------------------------------------|---|--|----------------------------|---|
| Intersection | #3 Main S | treet - | OR 11 | / 101 | h Ave | ***** | remagn | (Kasan) | 《 * * * * * * * * * * * * * * * * * * * | **** | ***** |
| Average Delay | (sec/veh |): ****** | 0.8 | Wars | t Case | Leve | . Of | ervic | : | Ε[| 36.43 |
| Approach: Movement: | North B L - T | ound - R | Sou | ith Bo | ound R | E i | st Bo | ound | | st Bo | |
| Control: Rights: Lanes: | Uncontr Incl 1 0 0 | olled ' ude | ' Und | ontro Incli | olled ude | i si | top S Incli) 1! | ign ude | | op Si Inclu) 1! | ide |
| Initial 8se: User Adj: | : >> Coun 5 495 1.32 1.52 7 751 1.00 1.00 0.88 0.88 8 854 0 0 8 854 | 1 1.32 1 1.00 0.88 2 0 | 1.32 5 1.00 | 369 1.52 560 | 1.32 11 1.00 | 1. 3 2 | 1.32 1.00 0.88 2 0 2 | 5 1.32 7 1.00 0.88 8 0 8 | 1.32 1.00 1.00 0.88 2 0 | 1.00 0.88 2 0 | 11 1.32 15 1.00 0.88 17 0 |
| Critical Gap's Critical Gp: FollowUpTim: | 4.1 xxxx | | | | XXXXX | 7.1 3.5 | | 6.2 3.3 | 7.1 3.5 | 6.5 4.0 | 6.2 |
| | 649 xxxx | XXXXX | 785 785 | XXXX | XXXXX XXXXX XXXXX XXXX | 1533 96 90 0.12 | 1525 119 117 0.01 | 643 477 477 0.02 | 97 | 1530 118 116 0.01 | 855 361 361 0.05 |
| Level Of Serv Queue: Stopped Del: LOS by Move: Movement: Shared Cap.: SharedQueue:x Shrd StpDel:x Shared LOS: ApproachLOS: | 0.0 xxxx 8.9 xxxx A LT - LTR xxxx xxxx xxxx xxxx | XXXXX XXXXX - RT XXXXX XXXXX XXXXX | 9.6 A LT - XXXX XXXXX XXXXX | XXXX LTR XXXX XXXX | XXXXX XXXXX | LT - XXXX XXXXX XXXXX | XXXX + LTR 134 0.5 | XXXXX - RT XXXXX XXXXX | LT XXXX | XXXX LTR 261 0.2 | XXXXX - RT XXXXX XXXXX |

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Level Of Service **Computat**ion Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection #4 Main Str | eet - OR 11/ 9th | AVE | ****** | ******** |
|---|--|---|---|--|
| Average Delay (sec/veh): | 1.4 Wors | t Case Level Of | Service: | E[49.5] |
| Approach: North Bou Movement: L - T | nd South Ba | ound East Bo - R L - T | ound W | est Bound - T - R |
| Control: Uncontrol Rights: Include Lanes: 1 0 0 1 | led Uncontro e Inclu | olled Stop S ude Incl | ude | top Sign Include 0 1! 0 0 |
| Initial Bse: 1 818 User Adj: 1.00 1.00 | Date: 22 Dec 200 5 15 371 1.32 1.32 1.61 7 20 597 1.00 1.00 1.00 0.91 0.91 7 22 657 0 0 0 7 22 657 | 19 11 1 1.32 1.32 1.32 25 15 1 1.00 1.00 1.00 0.91 0.91 0.91 28 16 1 0 0 0 28 16 1 | 8 5 1.00 1.00 | 1 13 1.32 1.32 1 17 1.00 1.00 0.91 0.91 1 19 0 0 1 19 |
| Critical Gap Module: Critical Gp: 4.1 xxxx xx FollowUpTim: 2.2 xxxx xx | | | | |
| Capacity Module: Cnflict Vol: 684 xxxx x: Potent Cap.: 909 xxxx x: Move Cap.: 909 xxxx x: Volume/Cap: 0.00 xxxx x: | xxxx 751 xxxx xxxx 751 xxxx | xxxxx 82 104 xxxxx 75 101 | 460 83 460 79 | 1633 903 102 339 99 339 0.01 0.06 |
| Level Of Service Module: Queue: 0.0 xxxx x: Stopped Del: 9.0 xxxx x: LOS by Move: A * Movement: LT - LTR - Shared Cap.: xxxx xxxx x: SharedQueue:xxxxx xxxx x: Shared LOS: * ApproachDel: xxxxx | xxxx 9.9 xxxx * A * RT LT - LTR xxxx xxxx xxxx xxxx xxxx xxxx | XXXXX XXXX 106 XXXXX XXXXX 0.9 | XXXXX XXXXX - RT LT XXXXX XXXX XXXXX XXXX | * * * * * * * * * * * * * * * * * * * |
| ApproachLOS: * | * | E | | D |

Level Of Service Module:

Shrd StpDel: 10.0 xxxx xxxxx

Α

XXXXXX

LT - LTR - RT

LOS by Move: A

Queue:

Shared LOS:

ApproachDel:

ApproachLOS:

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Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Main Street-OR11/ 8th Ave

| ******** | *** | ARRY. | *** | *** | | *** | ***** | ****** | **** | 海中市市市 | **** | ***** | |
|--|---------------------------|---|-----------------------------|--------------------------------|------------------------------------|--|-------------------------------|----------------------------|-----------------------------|---------------------------------|------------------------|------------------------------------|---|
| Average Delay | / (se | /veh |): ****** | 1.2 | | st Case | | | Service | | D[| 252] | |
| Approach: Movement: | | rth Bo - T | | | uth Bo | ound - R | L · | ast Bo | - R. | L, | est Bo - T | - R | • |
| Control: Eights: Lames: | 1 (| ontro Incli | ude 1 0 | Und | ontro Incli | olled ude | S. | top S Incl | ign | s: 0 (| top Si | ign Jde | |
| Volume Module Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: | : >> 8 | Count 522 1.52 792 1.00 0.88 900 0 | 1.32 1.00 0.88 | 3 1.32 4 1.00 0.88 | 1.52 595 1.00 0.88 676 | 04 << 15 1.32 20 1.00 0.88 23 0 23 | 33 1.00 0.88 38 0 | | | 1.00 0.88 3 | 0.88 2 0 | | |
| Critical Gap Critical Gp: FollowUpTim: | 4.1 | XXXX | | | | | | 6.5 4.0 | 6.2 3.3 | 7.1 3.5 | | 6.2 3.3 | |
| Potent Cap.: Move Cap.: Total Cap: | 699 898 898 xxxx | XXXX XXXX XXXX | XXXXX | 753 753 xxxx | XXXX XXXX | XXXXX XXXXX XXXXX XXXX XXXX | 82 76 193 0.19 | 0.01 | 450 450 xxxxx | 1631 82 77 197 0.02 | | 902 339 339 xxxxx 0,05 | |
| Level Of Serv Queue: Stopped Del: | 0.0 9.1 | XXXX XXXX | XXXXX XXXXX | 9.8 | | XXXXX | L⊈: -XXXXX | XXXX | XXXXX | XXXXX | | | |
| LOS by Move: Movement: Shared Cap.: SharedQueue:x Shird StpDel:x Shared LOS: | A LT - XXXX XXXX | + LTR XXXX XXXX | + - RT XXXXX XXXXX | A LT XXXX XXXXX | + LTR XXXX XXXX XXXX | + - RT XXXXX XXXXX | LT XXXX XXXXX | , * - LTR 233 0.9 | + - RT XXXXX XXXXX | LT - XXXX XXXXX | * LTR 299 0.2 | * - RT XXXXX XXXXX | |
| ApproachDel: ApproachLOS: | XX | (XXXX | | XX | (XXXX | | | 25.2 D | | | 18.0 C | | |

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Kittelson & Associates, Inc. - Project #6743
Miton-Freewater STA and TSP Update - Milton-Freewater, OR
2025 Recommended Three-Lane Traffic Condition, Weekday AM Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #6 OR 11/7th Ave - Eastbound

0.4 Worst Case Level Of Service: Average Delay (sec/veh): Approach: North Bound South Bound East Bound Movement: L - T - R L - T - R L - T - R L - T - R [------i----i--||-----i--||-----i-||-----i-||-i----i-||-i-----i-| Control: Uncontrolled Uncontrolled Stop Sign Stop Sign Rights: Include Include Include Include 0 1 0 1 0 0 1 0 1 0 0 0 1! 0 0 0 0 1! 0 0 Lanes: Volume Modulė: Base Vol: Growth Adj: 1.32 1.56 1.32 1.32 1.56 1.32 1.32 1.32 1.32 1.32 1.32 1.32 Initial Bse: 3 866 0 0 636 17 0 3. 1.00 1.00 1.00 1.00 1.00 User Adj: 1.00 1.00 1.00 1.00 1.0D 1.00 PHF Adi: PHF Volume: 4 1237 0 0 908 25 13 0 Reduct Vol: 0 0 0 0 0 4 1237 0 908 Final Vol.: 25 13 Critical Gap Module: Critical Gp: 4.1 xxxx xxxxx xxxxx xxxxx xxxxx 6.8 6.5 6.9 xxxxx xxxxx xxxxx FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxxx xxxxx 3.5 4.0 3.3 xxxxx xxxx xxxxx Capacity Module: Cnflict Vol: 932 xxxx xxxxx xxxx xxxx xxxx 1546 2165 466 XXXX XXXX XXXXX Potent Cap.: 730 xxxx xxxxx xxxx xxxx xxxx 107 48 549 xxxx xxxx xxxxx Move Cap.: 730 xxxx xxxxx xxxx xxxx xxxx 107 48 549 XXXX XXXX XXXXX Volume/Cap: 0.01 xxxx xxxx xxxx xxxx xxxx 0.12 0.04 0.01 xxxx xxxx xxxx xxxx XXXX XXXX XXXX

LT - LTR - RT

Α

XXXXXX

LT - LTR - RT LT - LTR - RT

XXXXXX

Ε

44.1

Shared LOS:

ApproachDel:

ApproachLOS:

XXXXXX

C

18.9

Final Vol.:

Critical Gap Module:

Intersection #8 OR 11/ 4th Avenue

5 1121

Kittelson & Associates, Inc. - Project #6743 Miton-Freewater STA and TSP Update - Milton-Freewater, OR 2025 Recommended Three-Lane Traffic Condition, Weekday AM Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 OR 11/7th Avenue - Westbound

| 方点有有有效性的 (1011 P) | ***** | HOC NOS | | **** | | ****** | |
|---|---|---|----------------------------|-------------------------------|-----------------|-----------------------------|--------------------|
| Average Delay (se | c/veh): | 0.4 Wor | st Case | Level Of | ANNING STATE OF | C[| 18.9] |
| Movement: L | rth Bound - T - R | South E | - R | East B | ound . | West Bo L T | ound |
| Control: Un Rights: | controlled ¹ Include 1 0 1 0 | Uncontr Incl | olled ¹ .ude | Stop S | ign Jde | Inclu | ıde |
| | | 0 1 0 | | | 0 0 0 |), U 11 | |
| | 556 1 1.56 1.32 | 1.32 1.56 | 1.32 | 0 0 1.32 1.32 | | 2 0 .32 1.32 | 16 1.32 |
| User Adj: 1.00 PHF Adj: D.70 | 866 1 1.00 1.00 0.70 0.70 1237 2 | 9 636 1.00 1.00 0.70 0.70 13 908 | 1.00 | 0 0 1.00 1.00 0.70 0.70 | 0.70 0. | 3 0 .00 1.00 .70 0.70 | 21 1.00 0.70 |
| Reduct Vol: 0 | 0 0 | 0 0 13 908 | Ō | 0 0 | 0 0 0 | 4 0 0 0 4 0 | 30 0 30 |
| Critical Gap Modu Critical Gp:xxxxx FollowUpTim:xxxxx | XXXX XXXXX | | | xxxx xxxx | | | 6.9 |
| Capacity Module: | | | | | | 3.5 xxxx | 3.3 |
| Cnflict Vol: xxxx Potent Cap.: xxxx Move Cap.: xxxx | XXXX XXXXX | 1239 xxxx 558 xxxx 558 xxxx | XXXXX | XXXX XXXX | XXXXX | 718 xxxx 82 xxxx | 620 436 |
| Votume/Cap: xxxx | | 0.02 xxxx | | XXXX XXXX | | 81 xxxx .05 xxxx | 436 0.07 |
| | XXXX XXXXX | | | XXXXX XXXX | | | |
| Stopped Del:xxxxx LDS by Move: * | * * | В *∙ | * | * * * * * | * | * * . | . * |
| Movement: LT Shared Cap.: xxxx | | LT - LTR | | | _ | T - LTR | - RT xxxxx |

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Shird StpDel: 9.0 xxxx xxxxx 11.6 xxxx xxxxx xxxxx xxxxx xxxxx xxxxx 18.9 xxxxx

XXXXXX

В

XXXXXX

Kittelson & Associates, Inc. - Project #6743 Miton-Freewater STA and TSP Update - Milton-Freewater, OR 2025 Recommended Three-Lane Traffic Condition, Weekday AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Average Oelay (sec/veh): Approach: South Bound Movement: L - T - R L - T - R L - T - R L - T - R Control: Uncontrolled Uncontrolled Stop Sign Rights: Include Include Include Include Lanes: 0 1 0 1 0 0 1 0 1 0 0 0 1! 0 0 0 0 1! 0 0 |-----| Volume Modulė: Base Vol: Growth Adj: 1.32 1.52 1.32 1.32 1.52 1,32 Initial Bse: 4 874 7 647 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 PHF Adj: 0.78 0.78 0.78 0.78 0.78 0.78 0.78 0.78 0.78 0.78 PHF Volume: . 2 8 829 5 1121 2 8 Reduct Vol: 0 0 O 0 0 n n

Critical Gp: 4.1 xxxx xxxxx 4.1 xxxx xxxxx 7.5 6.5 6.9 7.5 6.5 6.9 FollowUpTim: 2.2 xxxx xxxxx 2.2 xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3 ... Capacity Module: Cnflict Vol: 831 xxxx xxxxx 1123 xxxx xxxxx 1418 1980 415 1564 1980 561 Potent Cap.: 797 xxxx xxxxx 618 xxxx xxxxx 99 62 592 77 62 476 Move Cap.: 797 xxxx xxxxx 618 xxxx xxxxx 92 61 592 74 61 476 Volume/Cap: 0.01 xxxx xxxx 0.01 xxxx xxxx 0.09 0.03 0.00 0.02 0.03 0.04

8

8 829

Final Sat.: 196 2898 1800

Kittelson & Associates, Inc. - Project #6743 Miton-Freewater STA and TSP Update - Milton-Freewater, OR 2025 Recommended Three-Lane Traffic Condition, Weekday AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative) Intersection #9 Main Street/OR11/ 2nd Ave Critical Vol./Cap. (X): Cycle (sec): Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 21.1

| Optimal Cycl | e: 32 | | | evel O | Service: | | | C. |
|--|--|---|--|--|------------------------------------|----------------|--|--|
| Approach: Movement: | | und | South Bo | und | East Bo L - T | | West Bo L - T | urid R |
| Control: Rights: Min. Green: Lanes: | Permit Ignor 0 0 0 1 1 | e 0 | | ide 0 1 0 | Split Ph Inclu 0 0 0 0 1! | de 0 0 0 | Split Ph Inclu 0 0 1 0 1! | de 0 |
| Volume Modul Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Reduced Vol: PCE Adj: Final Vol.: | 14 170 1.32 1.61 18 274 1.00 1.00 0.90 0.90 21 304 0 0 21 304 1.00 1.00 1.00 1.00 21 304 | 407 1.61 655 0.00 0.00 0 0.00 0.00 | 0 159 1.32 1.61 0 256 1.00 1.00 | 1 1.32 1 1.00 0.90 1 0 | 9 0 | | 262 19 1.61 1.32 422 25 1.00 1.00 0.90 0.90 469 28 0 0 469 28 1.00 1.00 1.00 1.00 469 28 | 1 1.32 1.00 0.90 1 1.00 1.00 |
| Saturation F Sat/Lane: Adjustment: | 1800 1800 | 1800 1.00 | 1800 1800 1.00 0.93 | 1800 0.93 | 1800 1800 0.88 1.00 | | 1800 1800 0.94 0.94 1 89 0 10 | 1800 0.94 0.01 |

Final Sat.: 196 2898 1800 0 3331 17 618 0 971 3182 178 9 Capacity Analysis Module: 0.10 0.10 0.00 0.00 0.09 0.09 0.02 0.00 0.02 0.15 0.16 0.16 Vol/Sat: Crit Moves: Votume/Cap: 0.32 0.32 0.00 0.00 0.26 0.26 0.32 0.00 0.32 0.30 0.32 0.32 0.0 24.5 24.5 47.8 0.0 47.8 15.0 15.2 15.2 Delay/Veh: 25.1 25.1 0.0 AdjDel/Veh: 25.1 25.1 0.0 0.0 24.5 24.5 47.8 0.0 47.8 15.0 15.2 Ó

PM-3Lane-Reco

Kittelson & Associates, Inc. Project # 6743 Milton-Freewater STP and TSP Update Plan, Milton-Freewater, OR 2025 Recommended Three-Lane Traffic Condition, Weekday PM Peak Hour

Scenario Report

Scenario:

PM-3Lane-Reco

Command: Volume: PM-3Lane-Reco

Volume: P Geometry: 3

Geometry: 3-lane-Reco

Trip Generation: Trip Distribution: Paths: Routes: 3-lane-Reco Default Impact Fee Default Trip Generation Default Trip Distribution Default Paths

Routes: Default Ro Configuration: Default Co

Default Routes Default Configuration

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Impact Analysis Report Level Of Service

| Intersection | Base Del/ V/ LOS Veh C | Future Del/ V/ | Change în |
|-----------------------------------|------------------------------|---------------------------|--------------|
| # 1 OR 11/ 14th Ave | D 29.7 0.000 | LOS Veh C D 29.7 0.000 | + 0.000 0/V |
| # 2 Main Street-OR11/ 12th Ave | F 150.4 0.000 | F 150.4 0.000 | + 0.000 D/V |
| # 3 Main Street - OR 11/ 10th Ave | F 23 7.8 0.000 | F 237:8 0.000 | + 0.000 0/V |
| # 4 Main Street - OR 11/ 9th Ave | F 86.8 0.000 | F 86,8 0.000 | + 0.000 D/V |
| # 5 Main Street-OR11/ 8th Ave | E 45.4 0.000 | E 45.4 0.000 | + 0.000 D/V |
| # 6 OR 11/7th Ave - Eastbound | F 102.4 0.000 | F 102.4 0.000 | + 0.000 DVV |
| # 7 OR 11/7th Avenue - Westbound | C 15.4 0.D00 | C 15.4 0.000 | + 0.000 D/V |
| # 8 OR 11/ 4th Avenue | F 74.5 0.000 | F 74.5 0.000 | + 0.000 D/V |
| # 9:Main Street/OR11/ 2nd Ave | C 20.6 0.456 | C 20.6 0.456 | + 0.000 D/V |

PM-3Lane-Reco

User Adj:

PHF Adi:

PHF Volume:

Reduct Vol:

Final Vol.:

1.00 1.00

2 844

1.00

0

0.86 0.86 0.86

845

366

366

Kittelson & Associates, Inc. Project # 6743 Milton-Freewater STP and TSP Update Plan, Milton-Freewater, OR 2025 Recommended Three-Lane Traffic Condition, Weekday PM Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| 不是使用用来或用于具有大型的有关的,并不是不完全的,但是不是一个的,但是是一个的,但是是一个的,但是是一个的,但是是一个的,但是是一个的,也是是一个的,也是是一个的,也是是一个的,也是是一个的,也是是一个的,也是是一个的,也是是一个的,也是是一个的,也是是一个的,也是是一个的,也是是一个的,也是是一个的,也是是一个的,也是是一个的,也是是一个的,也是是一个的,也是是一个的。 |
|---|
| Intersection #1 QR 11/ 14th Ave |
| Average Delay (sec/yeh): 5.4 Worst Case Level Of Service: D[29.7] |
| Approach: North Bound South Bound East Bound West Bound Movement: L - T - R L - T - R L - T - R |
| Control: Uncontrolled Uncontrolled Stop Sign Stop Sign Rights: Include Include Include Include Lanes: 0 0 0 1 0 1 0 1 0 0 0 0 0 0 0 0 0 1 |
| Volume Module: >> Count Date: 1 Dec 2004 << Base Vol: |
| Critical Gp:xxxxx xxxxx xxxxx 4.1 xxxx xxxxx xxxxx xxxxx xxxxx xxxx |
| Capacity Module: Cnflict Vol: xxxx xxxx xxxx |
| Level Of Service Module: Queue: XXXXX XXXX XXXXX 1.3 XXXX XXXX XXXXX XXXX |
| ApproachLos: * * * * * * * * * * * * * * * * * * * |

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> Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 Main Street-OR11/ 12th Ave Average Delay (sec/veh): 3.4 Worst Case Level Of Service: Approach: North Bound South Bound West Bound Movement: L - T - R L - T - R ----------Control: Uncontrolled Uncontrolled Stop Sign Rights: Include Include Include Include 1 0 0 1 0 Lanes: 10010 0 0 1! 0 0 0 0 1! 0 0 Volume Module: >> Count Date: 7 Dec 2004 << Base Vol: 1 466 37 482 21 Growth Adj: 1.32 1.56 1.32 1.32 1.56 1.32 1.32 1.32 1.32 1.32 1.32 Initial Bse: 49 751 1 726 28

57 873 32 17 Critical Gap Module: Critical Gp: 4.1 xxxx xxxxx 4.1 xxxx xxxxx 7.1 6.5 FollowUpTim: 2.2 xxxx xxxxx 2.2 xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3 Capacity Module:

0.86 0.86 0.86 0.86 0.86 0.86 0.86 0.86

57 873

0 0

1.00 1.00 1.00 1.00 1.00 1.00

28

a

32

, 0

Conflict Vol: 905 xxxx xxxxx 846 xxxx xxxxx 1860 1851 Potent Cap.: 751 xxxx xxxxx 791 xxxx xxxxx 57 75 345 57 Move Cap.: 751 XXXX XXXXX 791 XXXX XXXXX 49 69 345 51 Volume/Cap: 0.00 xxxx xxxx 0.07 xxxx xxxx 0.56 0.07 0.00 0.06 0.05 0.05 Level Of Service Module:

0.0 xxxx xxxxx Stopped Del: 9.8 xxxx xxxxx LOS by Move: A LT - LTR - RT LT - LTR - RT LT - LTR - RT´ LT - LTR - RT Shared Cap.: xxxx xxxxx xxxxx xxxxx xxxxx xxxx 54 xxxxx xxxx 152 xxxxx SharedQueue:xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 2.5 xxxxx xxxxx 0.5 xxxxx Shrd StpDel:xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 150 xxxxx xxxxx 32.8 xxxxx Shared LOS: ApproachDel: xxxxxx 150.4

32.8 ApproachLOS:

LOS by Move: B

Shared LOS: ApproachDel:

ApproachLOS:

LT - LTR - RT

XXXXXX

Kittelson & Associates, Inc. Project # 6743 Milton-Freewater STP and TSP Update Plan, Milton-Freewater, OR 2025 Recommended Three-Lane Traffic Condition, Weekday PM Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 Main Street - OR 11/ 10th Ave

| Average Dela | y (sec/veh): | 5.8 Worst Case | Level Of Service | F [237.8] |
|---|---|---|--|-------------------------|
| Approach: | North Bound L - T - R | South Bound L - T - R | East Bound L - T - R | West Bound L ~ T - R |
| Control: Rights: Lanes: | Uncontrolled ^t Include | Uncontrolled Include | | Stop Sign Include |
| Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: | 1.32 1.52 1.32 7 741 3 1.00 1.00 1.00 0.80 0.80 0.80 8 926 3 0 0 0 | 18 Nov 2004 << 7 7 531 17 1.32 1.52 1.32 9 806 22 1.00 1.00 1.00 0.80 0.80 12 1008 28 | 19 2 1.32 1.32 1.32 25 3 5 1.00 1.00 1.00 0.80 0.80 0.80 31 3 7 | 7 3 22 |
| FollowUpTim: Capacity Modu Cnflict Vol: Potent Cap.: Move Cap.: | 4.1 xxxx xxxxx 2.2 xxxx xxxxx Jle: 1036 xxxx xxxxx | 736 xxxx xxxxx | 3.5 4.0 3.3 | |
| Level Of Serv | vice Module: | [[| <u> </u> | |

LT - LTR: - RT

0.0 xxxx xxxxx 0.0 xxxx xxxxx xxxxx xxxx 0.0

LT - LTR - RT

LT - LTR - RT

50.9

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Milton-Freewater STP and TSP Update Plan, Milton-Freewater, OR
2025 Recommended Three-Lane Traffic Condition, Weekday PM Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection | #4 Main Street | - OR 11/ 9th | 1 ÂVO PARMARANAMENTALA | ********* | |
|--|---|--|---|--|---|
| Average Dela | y (sec/veh): | 2.2 Wors | t Case Level Of | Service: F(| 86.8] |
| Approach: Movement: | North Bound L - T - R | South Bo | ound East I | Bound West Bo | |
| Control: Rights: Lanes: | Uncontrolled Include 1 0 0 1 0 | Uncontro Inclu 1 0 0 | ude Inc | lude Inclu | Jďe |
| Volume Modul Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol.: | 1.32 1.52 1.3 1 792 1.00 1.00 1.0 0.89 0.89 0.8 1 890 0 0 | 2 31 542 2 1.32 1.52 3 41 823 0 1.00 1.00 | 14 9 1.32 1.32 1.33 18 12 1.00 1.00 1.00 0.89 0.89 0.89 21 13 0 0 0 | 2 1.32 1.32 1.32 1 7 11 1 0 1.00 1.00 1.00 | 11 1.32 15 1.00 0.89 16 0 |
| Critical Gap Critical Gp: FollowUpTim: | 4.1 xxxx xxxx | | | | 6.2 3.3 |
| Capacity Mod Cnflict Vol: Potent Cap.: Move Cap.: Volume/Cap: | 945 xxxx xxxx 726 xxxx xxxx 726 xxxx xxxx | x 759 xxxx x 759 xxxx | xxxxx 51 68 xxxxx 45 63 | 3 325 51 67 3 325 47 63 | 892 344 344 0.05 |
| LOS by Move: Movement: Shared Cap.: SharedQueue: | 0.0 xxxx xxxx 10.0 xxxx xxxx A * ± LT - LTR - RT xxxx xxxx xxxx xxxx xxxx xxxx | 10.0 xxxx B * LT - LTR x xxxx xxxx x xxxx xxxx x xxxxx xxxx | ****** ***** ************************* | 5 xxxxx xxxx 91 3 xxxxx xxxxx 1.2 8 xxxxx xxxxx 62.6 | XXXXX - RT XXXXX XXXXX |

D

Kittelson & Associates, Inc. Project # 6743 Milton-Freewater STP and TSP Update Plan, Milton-Freewater, OR 2025 Recommended Three-Lane Traffic Condition, Weekday PM Peak Hour

Level Of Service Computation Report
2000 BCM Unsignalized Method (Base Volume Alternative)

| intersection my Moin Street-f | JK L.I.A | DIN AVE | |
|--|--------------|--|--------------|
| · 共演也有两种政治的企会会会会会会会会会会会会会会会会会会会会会会会会会会会会会会会会会会会会 | in the Maria | BEN AVO Brandansansanskarrantansanskarrantare | · 大大大大大大大大大大 |
| MARKET BALLS FRANCISTA | 17 | Hanak Casa Lavel Of Casallas | E E / E / 3 |

| Average Dela | y (sec/veh): | 1.3 Mor | st Case Leve | l Of Service | : E[| 45.4] |
|---|--|---|---|--|--|-------|
| Approach: | North Bound L T - R | South B | ound 'E | ast Bound - T - R | West B | ound |
| Rights: | Uncontrolled Include 1 0 0 1 0 | Incl | ude | Include | Incli | ⊔de |
| Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: | 1.00 1.00 1.0 0.81 0.81 0.8 10 988 1 | 9 13 578 2 1.32 1.52 2 17 877 0 1.00 1.00 1 0.81 0.81 5 21 1083 0 0 0 | 43 24 1.32 1.32 57 32 1.00 1.00 0.81 0.81 70 39 0 0 | 3 6 1.32 1.32 4 8 1.00 1.00 0.81 0.81 5 10 0 0 | 1.32 1.32 4 1 1.00 1.00 0.81 0.81 5 2 0 0 | 1 |
| | Module: 4.1 xxxx xxxx 2.2 xxxx xxxx | | | 6.5 6.2 4.0 3.3 | 7.1 6.5 3.5 4.0 | |

Capacity Module: Cnflict Vol: 1153 xxxx xxxxx 1002 xxxx xxxxx 2177 2182 1118 2182: 2210 Potent Cap.: 606 xxxx xxxxx 691 xxxx xxxxx 34 47 254 33 Move Cap.: 606. xxxx xxxxxx 691 xxxx xxxxx 32 44 254 28 300 Total Cap: xxxx xxxx xxxxx xxxx xxxx xxxx 127 146 xxxxx 122 144 xxxxx Volume/Cap: 0.02 xxxx xxxx 0.03 xxxx xxxx 0.31 0.03 0.04 0.04 0.01 0.01

Level Of Service Module:

ApproachDel: xxxxxx xxxxxx ApproachLOS: * *

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2025 Recommended Three-Lane Traffic Condition, Weekday PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Atternative)

Intersection #6 OR 11/7th Ave - Easthound

| : | Intersection | #OUK 11/ | (TN.AVE | - Easi | tooun | () ***** | *** | | **** | | | **** |
|-----|---|--|---|---|--|---|-----------------------------------|----------------------------|-------------------------------------|-------------------------------------|-----------------------------|---------------------------------|
| | Average Dela | / (sec/veh |): ****** | 2.7 | | | Leve | Of | ervic | es Herman | | 02.41 |
| 1 1 | Approach: Movement: | North Bo L - T | - R | , L - | th Bo | - R | L | st Bo T | - R | | st Bo T | |
| | Control: Rights: Lanes: | Uncontro Incli 0 1 0 | olledi ⁱ ude | Unce | ontro Inclu | | St | top S Incli | | | op Si Inclu | ıde |
| | Volume Modulu Base Vol: Growth Adj: Initial Bse: User Adj: PHF Adj: PHF Volume: Reduct Vol: Final Vol.: | 6 544 1.32 1.56 8 847 1.00 1.00 0.86 0.86 | 1.32 0 1.00 0.86 0 | 1.32 1 1.00 1 0.86 0 | 1.56 983 1.00 0.86 1143 | 26 1.00 | 41 1.00 0.86 48 0 | 0.86 5 0 | 1.32 4 1.00 0.86 5 0 | 0 1.00 0.86 0 | 0 1.00 0.86 0 0 | 0 1.00 |
| | Critical Gap Critical Gp: FollowUpTim: | 4.1 xxxx | XXXXX. | XXXXX | XXXX | XXXXX | 3.5 | | 3.3 | XXXXX XXXXX | | XXXXX |
| | Capacity Mode Cnflict Vol: Potent Cap.: Move Cap.: Volume/Cap: | le: 1174 xxxx 591 xxxx 591 xxxx 0.02 xxxx | XXXXX XXXXX XXXXX XXXX | , XXXX) XXXX) | XXXX XXXX XXXX | XXXXX XXXXX XXXXX XXXX | 1669 89 88 | 2162 48 | 587 458 458 | XXXX XXXX XXXX | XXXX XXXX XXXX | XXXXX XXXXX XXXXX |
| | Level Of Servaueue: Stopped Del: LOS by Move: Movement: Shared Cap.: SharedQueue: Shrd StpDel: Shared LOS: ApproachDel: | vice Moduli 0.0 xxxx 11.2 xxxx B * LT - LTR xxxx xxxx 0.0 xxxx 11.2 xxxx | xxxxx xxxxx - RT xxxxx xxxxx xxxxx | XXXXX) XXXXX) LT - XXXX) 0.0) | XXXX XXXX £ LTR XXXX XXXX XXXX | XXXXX XXXXX * - RT XXXXX XXXXX | LT XXXX XXXX XXXXX XXXXX | XXXX - LTR 87 3.1 | XXXXX - RT XXXXX XXXXX | LT - XXXX XXXX XXXXX XXXXX | XXXX LTR 0 XXXX | XXXXX - RT XXXXX XXXXX |
| i | ApproachLOS: | | | | - | | • | г | | | | |

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| ******* | ******* | **** | *** | **** | ***** | *** | **** | *** |
|-----------------------------|--------------------|---------------------------|--------------------|------------------|------------------|---|--|------------|
| Intersection | #7 OR 11/ | | | | | *************************************** | and the late of the same | |
| 有自然的数据的第三人称单数 | 《中省市市市产业 市 | The state of the state of | | | ***** | 2-14-6-14-14-24 | THE RESIDENCE OF THE PARTY OF T | 2. W. C |
| Average Delay | / (sec/veh |): 0 | .2 Vor | si Cas | e Level Of | Service: | CT. | 15.4] |
| Approach: | North B | aund aund | South E | rananar Louad | East B | ernd ound | - Unat Da | |
| Movement: | | | L - T | | L - T | | West Bo | |
| | | | | | | · · · · · · | | • • • |
| Control: | Uncontr | alled (I | Uncontr | | Stop S | _ 11 | Stop Si | . 1 |
| Rights: | Incl | | Incl | | Incl | | Incli | |
| Lanes: | 0 1 0 | 1 0 | 0 1 0 | | 0 0 1! | | 0 1! | |
| | | | 4 | | | | | |
| Volume Module | | | | | | | | • |
| Base Vol: | 0 544 | | 17 631 | | 0 0 | | 1 0 | - 9 |
| Growth Adj: Initial Bse: | 1.32 1.56 0 847 | | .32 1.56 22 983 | | 1.32 1.32 | | 32 1.32 | 1.32 |
| User Adi: | 1.00 1.00 | | 22 983 .00 1.00 | | 0 0 1.00 1.00 | | 1 0 00 1.00 | 12 1.00 |
| PHF Adj: | 0.86 0.86 | | .86 0.86 | | | | 86 0.86 | 0.86 |
| PHF Volume: | 0 985 | | 26 1143 | | 0.00 0.00 | 0.00 | 2 0.00 | 14 |
| Reduct Vol: | 0 0 | | 0 0 | _ | ŏŏ | ŏ | ōŏ | ō |
| Final Vol.: | 0 985 | 3 | 26 1143 | . 0 | 0 0 | Ō | 2 0 | 14 |
| | | - | | | | | | |
| Critical Gap | | | , , | | | , , , | | 4 - |
| Critical Gp:> FollowUpTim:> | | | | | XXXX XXXX | | .8 xxxx | 6.9 |
| rottowopi ini:/ | | | XXXX | ***** | XXXX XXXX | ***** 3 | .5 xxxx | 3.3 |
| Capacity Modu | ile: | 11. | | | | | | 1 |
| Cnflict Vol: | | XXXXX | 988 xxxx | XXXXX | xxxx xxxx | xxxxx - 16 | 10 xxxx | 494 |
| Potent Cap.: | XXXX XXXX | | 695 xxxx | | | | 97 xxxx | 526 |
| | XXXX XXXX | | 695 xxxx | XXXXX | XXXX XXXX | | 94 xxxx | 526 |
| Volume/Cap: | XXXX XXXX | xxxx 0 | .04 xxxx | XXXX | XXXX XXXX | xxxx 0. | O2 xxxx | 0.03 |
| | | - | | |] [| | - - | |
| Level Of Serv | | | , , | | | | | |
| Queue: > Stopped Del:> | | | | | XXXXX XXXX | | | |
| LOS by Move: | `^^ ^ ^ | | 0.4 AAAA | · ^^X | XXXXX XXXX | **** | * ** | * |
| Movement: | LT - LTR | | LT - LTR | - RT | LT - LTR | - RT L | T - LTR | - RT |
| Shared Cap.: | | | XXX XXXX | *** | | | | XXXXX |
| SharedQueue: | 0.0 xxxx | XXXXX | 0.1 xxxx | XXXXX | XXXX XXXXX | | | XXXXX |
| Shrd StpDel: | | | 0.4 xxxx | XXXXX | XXXX XXXX | XXXXX XXX | xx 15.4 | XXXXX |
| Shared LOS: | Α * | | B. * | * | * * | * | *C | * |
| ApproachDel: | xxxxxx | | XXXXXX | | XXXXXX | | 15.4 | |
| ApproachLOS: | | | ₹. | | * | | G. | |

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Kittelson & Associates, Inc. Project # 6743 Milton-Freewater STP and TSP Update Plan, Milton-Freewater, OR 2025 Recommended Three-Lane Traffic Condition, Weekday PM Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative)

| Intersection #8 OR 11/ 4th Avenue | | | | | | |
|--|---|---|--|--|--|--|
| Average Delay (sec/veh); | 0.5 Worst Case Level Of | Service: F[74.5] | | | | |
| Approach: North Bound Movement: L - T - R | South Bound East I | Bound West Bound - R L - T - R | | | | |
| Control: Uncontrolled Rights: Include Lanes: 0 1 0 1 0 | Uncontrolled Stop | Sign Stop Sign Lude Include | | | | |
| Base Vol: 4 577 3 Growth Adj: 1.32 1.52 1.32 Initial Bse: 5 876 4 User Adj: 1.00 1.00 1.00 PHF Adj: 0.87 0.87 0.87 PHF Volume: 6 1007 Reduct Vol: 0 0 0 Final Vol.: 6 1007 5 | 11 1013 5 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 1 1 1 1 22 0 1.00 1.00 1.00 1.00 | | | | |
| Critical Gap Module: Critical Gp: 4.1 xxxx xxxxx FollowUpTim: 2.2 xxxx xxxxx | | | | | | |
| Capacity Module: Cnflict Vol: 1170 xxxx xxxxx Potent Cap.: 593 xxxx xxxxx Move Cap.: 593 xxxx xxxx Volume/Cap: 0.01 xxxx xxxx | 681 xxxx xxxxx 60 44 681 xxxx xxxxx 54 43 | 4 459 69 44 517 3 459 65 43 517 | | | | |
| Level Of Service Module: Queue: 0.0 xxxx xxxxx Stopped Del: 11.1 xxxx xxxxx LOS by Move: B * * Movement: LT - LTR - RT Shared Cap.: xxxx xxxx xxxx SharedQueue: 0.0 xxxx xxxxx Shrd StpDel: 11.1 xxxx xxxxx Shared LOS: B * * ApproachDel: xxxxxx ApproachLOS: * | 10.4 XXXX XXXXX XXXX XXXX B | X XXXXX XXXXX XXXX XXXX XXXX XXXX XXXX XXXX | | | | |

| Level Of Service Computation Report 2000 HCM Operations Method (Base Volume Alternative) | | | | | | | |
|--|---|--|--|--|--|--|--|
| 有水面水面的水面水面的水面的水面的水面的水面的水面。 | r | | | | | | |
| Intersection #9 Main Street/OR11/ 2nd Ave | , | | | | | | |
| Cycle (sec): 100 Critical Vol./Cap. (X): 0.456 | | | | | | | |
| Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 20.6 | | | | | | | |
| Optimal Cycle: 38 Level Of Service: C | | | | | | | |
| *************************************** | ŗ | | | | | | |
| Approach: North Bound South Bound East Bound West Bound Movement: L - T - R L - T - R | | | | | | | |
| Movement: L - T - R L - T - R L - T - R | | | | | | | |
| Control: Permitted Permitted Split Phase Split Phase | ! | | | | | | |
| Rights: Ignore Include Include Include | | | | | | | |
| Min. Green: 2 1 1 2 1 1 2 1 1 2 1 1 | | | | | | | |
| Lanes: 0 1 1 0 1 0 0 1 1 0 0 0 1! 0 0 1 0 1! 0 0 | | | | | | | |
| | | | | | | | |
| Volume Module: >> Count Date: 30 Nov 2004 << | | | | | | | |
| Bose Vol: 7 187 398 0 189 12 5 0 9 481 31 6 | | | | | | | |
| Grouth Adj: 1.32 1.61 1.61 1.32 1.61 1.32 1.32 1.32 1.32 1.61 1.32 1.32 1.32 1.61 1.32 1.32 1.32 1.32 1.32 1.32 1.32 1.3 | | | | | | | |
| User Ad: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.0 | | | | | | | |
| PHR AGE: 0.92 0.92 0.00 0.92 0.92 0.92 0.92 0.92 | | | | | | | |
| PHF Volume: 10 327 0 0 331 17 7 0 13 842 44 9 | | | | | | | |
| Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 | | | | | | | |
| Reduced Vol: 10 327 0 0 331 17 7 0 13 842 44 9 | | | | | | | |
| PCE Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.0 | | | | | | | |
| MLF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.0 | | | | | | | |
| Final Vol.: 10 327 0 0 331 17 7 0 13 842 44 9 | i | | | | | | |
| Saturation Flow Module: | Í | | | | | | |
| Sat/Lare: 1800 1800 1800 1800 1800 1800 1800 180 | | | | | | | |
| Adjustment: 0.88 0.88 1.00 1.00 0.92 0.92 0.88 1.00 0.88 0.93 0.93 0.93 | | | | | | | |
| Lanes: 0.06 1.94 1.00 0.00 1.90 0.10 0.36 0.00 0.64 1.89 0.09 0.02 | | | | | | | |
| Final Sat.: 94 3060 1800 0 3164 165 565 0 1017 3177 158 31 | | | | | | | |
| - 100 miles | ĺ | | | | | | |
| Capacity Analysis Module: Vol/Sat: 0.11 0.11 0.00 0.00 0.10 0.10 0.01 0.00 0.01 0.26 0.28 0.28 | | | | | | | |
| Vol/Sat: 0.11 0.11 0.00 0.00 0.10 0.10 0.01 0.00 0.01 0.26 0.28 0.28 Crit Hoves: **** | | | | | | | |
| Green/Cycle: 0.23 0.23 0.00 0.00 0.23 0.23 0.03 0.00 0.03 0.62 0.62 0.62 | | | | | | | |
| Volume/Cap: 0.46 0.46 0.00 0.00 0.45 0.45 0.46 0.00 0.46 0.43 0.46 0.46 | | | | | | | |
| petay/Veh: 33.3 33.3 0.0 0.0 33.1 33.1 55.2 0.0 55.2 10.1 10.3 10.3 | | | | | | | |
| User Delad: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0 | | | | | | | |
| Adibe Ven: 33.3 33.3 0.0 0.0 33.1 33.1 55.2 0.0 55.2 10.1 10.3 10.3 | | | | | | | |
| HEM2LAVg: 5 5 0 0 5 8 1 0 1 7 8 8 | k | | | | | | |

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Appendix I

Queuing Analysis Results

Project #: 6743

Analysis Scenario: Existing Conditions

Analysis Period:

0.25

(peak 15 minute analysis)

Analyst: JRP

Date: June 2, 2005

V = flow rate for movement

C = capacity of movement

Q = 95th percentile queue (veh)

5 = storage need (ft)

of Int: - 8 Veh. Length (ft): 25

* Queue length calculated using Equation (17-37) presented in Highway Capacity Manual 20C

| | | | WB | 2000 | STORESTORE |
|---------|----------|-----------|--------|-------|------------|
| | | EB Shared | Shared | WB RT | WB LT |
| ORE 11/ | | | | 189 | 11 |
| 5W 14th | Ċ | | | 529 | 158 |
| Ave. | Q. | | | 1.6 | 0.2 |
| | S | | | 50 | 25 |
| ORE 11/ | | 25 | 17 | | , |
| 5W 12th | Ç | 161 | 344 | į | |
| . Ave. | Q | 0.5 | 0.2 | | |
| | S | 25 | 25 | | |
| ORE 11/ | | 32 | 30 | | |
| 5W 10th | C | 159 | 317 | | |
| Ave. | Q. | 0.7 | 0.3 | | |
| | S | 25 | 25 | | |
| ORE 11/ | | 17 | 22 | | |
| 5W 9th | <i>C</i> | 200 | 266 | | |
| Ave. | Q | 0.3 | 0.3 | · | |
| | 5 | 25 | 25 | | |
| ORE 11/ | | 41 | 6 | | |
| SW 8th | C | 137 | 140 | ! | |
| Ave. | Q | 1.2 | 0.1 | ŀ | |
| | 5 | 50 | 25 | | |
| ORE 11/ | | 42 | | | |
| SW 7th | C | 218 | | | |
| Ave. | ଦ | 0.7 | | | |
| | Ś | 25 | | | |
| ORE 11/ | } | 7 | 22 | | |
| 5W 4th | C | 169 | 486 | | |
| Ave. | Q | 0.1 | 0.1 | | |
| [| 5 | 25 | 25 | | |
| | | | | | |

Project #: 6743

Analysis Scenario: 2004 Conditions - Three Lanes

Analysis Period:

0.25

(peak 15 minute analysis)

Analyst: JRP

Date: June 2, 2005

Q = 95th percentile queue (veh) S = storage need (ft)

V = flow rate for movement

C = capacity of movement

Veh. Length (ft):

of Int: 8

* Queue length calculated using Equation (17-37) presented in Highway Capacity Manual 20C

| | | EB Shared | WB "Shared | WB RT | WB LT |
|--------------------|-----|-----------|---------------|---------------------------------------|-------------|
| ORE 11/ | С | | | 189 533 | 11 110 |
| SW 14th | Q | | | 1.6 | 0.3 |
| Ave. | S | | | 50 | 25 |
| | | 25 | 17 | | |
| ORE 11/ | С | 116 | 268 | | |
| 5W 12th Ave. | Q | 0.8 | 0.2 | | |
| AVE. | 5 | 25 | 25 | | |
| ODE 117 | | 32 | 30 | | |
| ORE 11/ SW 10th | · c | 106 | 223 | | |
| Ave. | Q | 1.2 | 0.5 | | |
| , , , | *5 | 50 | 25 | | |
| ORE 11/ | | 17 | 22 | | |
| 5W 9th | G | 138 | 182 | <u> </u> | , :- |
| Ave. | Q | 0.4 | 0.4 | | , |
| 1,7.7 | 5 | 25 | 25 | | |
| ORE 11/ | • | 41 | 6 | | |
| SW 8th | C | 92 | 93 | | |
| Ave. | Q | 1.9 | 0.2 | ; | |
| | S | 50 | 25 | | |
| ORE 11/ | · | 42 | | | - |
| SW 7th | С | 164 | | | en i |
| Ave. | Q | 1.0 | | | |
| | 5 | 25 | <u> </u> | · · · · · · · · · · · · · · · · · · · | |
| ORE 11/ | | 7 | 22 | | ¢ |
| SW 4th | С | 119 | 352 | | |
| Ave. | Q | 0.2 | 0.2 | | |
| | 5 | 25 | 25 | | |

Project #: 6743

Analysis Scenario: 2025 Conditions - Four Lones

Analysis Period:

0.25

(peak 15 minute analysis)

Analyst: JRP

Date: June 2, 2005

of Int: 8 Veh. Length (ft):

V = flow rate for movement

C = capacity of movement

Q = 95th percentile queue (veh)

S = storage need (ft)

* Queue length colculated using Equation (17-37) presented in Highway Capacity Manual 20C

| | • | EB Shared | WB Shared | WB RT | WB LT |
|-------------------|--------|-----------|--------------|---|------------------------------------|
| ORE 11/ | | | | 249 | 15 |
| 5W 14th | C. | | | 419 | 78 |
| Ave. | Q | , | | 3.7 | 0.7 |
| | 5 | | | 100 | 25 |
| ORE 11/ | | 35⁻ | 23 | | |
| 5W 12th | С | 84 | 209 | | |
| Ave. | Q. | 1.7 | 0.4 | | |
| | 5 | 50 | 25 | | |
| ORE 11/ | | 41 | 39 | | · . |
| 5W 10th | С | 81 | 188 | ٠, | |
| Ave. | Q | 2.2 | 0.8 | | |
| | - 5 | 75 | 25 | | |
| ORE 11/ | | 21 | 29 | | |
| 5W 9th | C | 108 | 153 | | 1 1 N N |
| Ave. | Q S | 0.7 | 0.7 | | |
| | 5 | 25 | 25 | | |
| ORE 11/ SW 8th | | 54 | 9 | | |
| | C | 67 | 66 | | |
| Ave. | Q | 3.8 | 0.4 | | |
| | 5 | 100 | 25 | ' | • |
| ODE 117 | | 58 | | | |
| ORE 11/ 5W 7th | С | 129 | | | į |
| Ave. | Q | 2.0 | | | |
| AVE. | 5 | 50 | | e a service e e en en anción de la castella | |
| | | 10 | 30 | | region or supplying the production |
| ORE 11/ 5W 4th | C | 90 | 341 | | |
| Ave. | Q | 0.4 | 0.3 | | |
| Ave. | 5 | 25 | 25 | | |

Project #: 6743

Analysis Scenario: 2025 Conditions - Three Lanes

Analysis Period:

0.25

(peak 15 minute analysis)

Analyst: JRP

Date: June 2, 2005

V = flow rate for movement

C = capacity of movement

Q = 95th percentile queue (veh)

S = storage need (ft)

of Int: Veh. Length (ft):

* Queue length calculated using Equation (17-37) presented in Highway Capacity Manual 20C

| | | Control of the Contro | STATE OF THE STATE OF | Nazasa sa kulula arak as | ATTOCK CONTRACTOR |
|----------------------------|-------------|--|------------------------|--------------------------|-----------------------|
| | • | EB Shared | W8 Shared | WB RT | WB LT |
| ORE 11/ SW 14th Ave. | c Q s | | | 249 422 3.7 100 | 15 49 1.1 50 |
| ORE 11/ SW 12th Ave. | c Q s | 35 54 26 75 | 23 152 0.5 25 | · | |
| ORE 11/ SW 10th Ave. | c Q s | 41 46 3.6 100 | 39 117 1.3 50 | - | · |
| ORE 11/ SW 9th Ave. | c Q s | 21 65 1.2 50 | 29 91 1.2 50 | | |
| ORE 11/ SW 8th Ave. | c Q s | 54 141 1,6 50 | 9 144 0.2 25 | | E |
| ORE 11/ SW 7th Ave. | C Q s | 58 87 3.2 100 | | | , |
| ORE 11/ SW 4th Ave. | c Q S | 10 61 0.5 25 | 30 266 0.4 25 | | |

SIGNALIZED QUEUE ANALYSIS

Project Name: Project Number: Analyst: Date:

H: profile 6743 exceNSig Queue2025 Four xis SIGQUEUE



KITTELSON & ASSOCIATES, INC. 610 SW Alder, Suite 700 Portland, Oregon 97205 (503) 228-5230 Fax: (503) 273-8169

Filename:

Intersection: Conditions (yr, alt., etc.): ORE 11/ SW 2nd Ave. 2004 Four-Lane:

GENERAL INPUT PARAMETERS:

| ENERGY OF TANKELETON | American Artist Control of Contro |
|--------------------------|--|
| Cycle Length: | 100 sec |
| Confidence Level (C.L.): | 95% |
| Storage length/vehicle: | 25 feet |

| | APPROACH/MOVEMENT. | | | | | | | |
|-------------------------------|--------------------------|---------------|------------|---------------|------------|-----------------|-----------------|---------------------|
| | #1 NELT | #2 NETHALT | #3 SBLT | #4 SBTH/RT | #5 EBUT | #6 EB-Shared | #7 W8-Shared | #8 |
| INPUT PARAMETERS: | | | | | | | | and a second second |
| Valume (pre-PHF) (vph): | Programme and the second | 256 | | 284 | 200 | 15 | 679 | |
| G/C for movement: | | 0.24 | | 0.24 | | 0.02 | 0.62 | |
| Number of lanes: | | 2 | | 2 | | 1 | 2 | |
| CALCULATIONS: | | | | | | | | |
| Length of red interval (sec): | ł | 76.0 | | 76.0 | | 98.0 | 38.0 | ļ |
| Average total queue (veh): | - 1 | 5.4 | | 5.6 | | 0.4 | 7.2 | Ī |
| Maximum total queue (veh): | 1 | 9 | l | 10. | | 2 | 12 | ! |
| Total queue length (feet): | H | 225 | | 250 | 1 | . 50 | 300 | |
| Required storage/lane (feet): | | 125 | | 125 | | 50 | 150 | |
| PERMITTED LEFT TURNS: | | | | | | | , | |
| Opposing votume (pre-PHF): | | | 300 | | | | | |
| Opposing sat, flow rate: | | | | | 400 | | | |
| CALCULATIONS: | •} | } | | | | | | |
| Opposing flow ratio (Yo): | | ŀ | | , i | | | | |
| Unblocked G/C: | | | | | ``` | | | • |
| Effective red interval (sec): | 1 | | | | | | | |
| Average total queue (veh): | | | | | | | | |
| Maximum total queue (veh): | | | | | | | , | |
| Total queue length (feet): | 1 | | ı | | | | | |
| Required storage/lane (feet): | | | | | | | | |

METHODOLOGY AND FORMULAS USED:

Length of red interval = (1 $+ \widetilde{CDC}$) * Oyele length

Avange specialism w Volume "Red Stanger 1900)

Random arrivals behave according to a Person distribution There is a personality transfer to control to make the page 1616) that the quoue formed during each red interval will be less than or copie to the maximum quaus

(Prob. of arrivals + [7] a plast branch N * each NO/N* (the Position deschation) (Picto ditarrieda i a fi) a i desir di populación del validada de 1, ..., N-1 Max N. Highest N such man the sum of pricked littles & (1 - scriptures level)

Quoun hongh is Mondream beauth of Course service pay works

Required Makage per lates a Coloque langua i Microser of Certal exception up to the could be from the Color of the

Opposing from ratio Your copposing waters in a recovery set from the

Unblocker (\$1) (g/C - Yo)/(1-Yo)

SIGNALIZED QUEUE ANALYSIS

Project Name: Project Number: Analyst:

Date: Filename:



KITTELSON & ASSOCIATES, INC.

610 SW Alder, Suite 700 Portland, Oregon 97205 (503) 228-5230 Fax: (503) 273-8169

Intersection: Conditions (yr, alt., etc.):

GENERAL INPUT PARAMETERS:

Cycle Length: Confidence Level (C.L.): Storage length/vehicle:

| | APPROACH/MOVEMENT | | | | | | | |
|---|-------------------|---------------------------------------|-------------|---|--------------------|------------------------------|-------------------------|------------|
| | #i NBLT | VBIHIT. | :3 580.T | #4 Sethert | #S EBLT | #6 E6-Shared | #7 WB Shared | eB WEAT |
| INPUT PARAMETERS: Volume (pre-PHF) (vph): G/C for movement: Number of lanes: | | 0 24 1 2 2 1 | | 264 0124 | The street section | 15 0.02 1 | 879 0.62 2 | |
| CALCULATIONS: Length of red interval (sec): Average total queue (veh): Maximum total queue (veh): Total queue length (feet): Required storage/lane (feet): | | 76.0 5.4 9 225 225 | | 76.0 5.6 1 0 250 2 50 | | 98.0 0.4 2 50 50 | 7.2 12 300 | |
| PERMITTED LEFT TURNS: Opposing volume (pre-PHF): Opposing sat. flow rate: | | | | | | · | a i | • |
| CALCULATIONS: Opposing flow ratio (Yo): Unblocked G/C: Effective red interval (sec): Average total queue (veh): Maximum total queue (veh): Total queue length (feet): Required storage/lane (feet): | | | | | | | | |

METHODOLOGY AND FORMULAS USED:

Lawren of red moment - (1 - GeC) * Cycle: langer

Acquisco igenialisto a Yolisto 1 Perf Islandi (1900

Thora is a processor segment the confedence book deciral (seg. \$6%) that the queue formed during each told everyone and the seas there or equal to the maximum quous.

Proper amonds a file of the Intercent this many the file Property Contract of the Amond of the Amond of the Intercent of the Prior of animals with a 1 - Sum of processors to benefits 0.1..., Wit the in August March that we want frequently a fit to delivered being

Required image part large a Costan benyth / Name up to the next highest which which

Unblecking OC (per Ci v (p.C. Yoy/1-Yo)

SIGNALIZED QUEUE ANALYSIS

Project Name: Project Number: Analyst:

Date:



KITTELSON & ASSOCIATES, INC.

610 SW Alder, Suite 700 Portland, Oregon 97205 (503) 228-5230 Fax: (503) 273-8169

Filename:

H profes of a round Saj Consecution on in Statute LE

Intersection:

Conditions (yr, alt., etc.):

CRE 11/SW 2nd Ave. 2025 Four-lane

GENERAL INPUT PARAMETERS:

Cycle Length: Confidence Level (C.L.): Storage length/vehicle: 160 sec 96% 25 leet

| y. | APPROACH/MOVEMENT | | | | | | | |
|---------------------------------|-------------------|---------------|------------|---------|-----------|--------------------|-----------------|-------------------------------|
| | #1 NELT | #2 NBTHALT | #3 SBLT | SBIH/AT | #5 | #6 EB-Shared | #7 WB-Shared | #8 WETHAT |
| INPUT PARAMETERS: | | | 2 | | | ar hadren ta taari | | erstend füre gleingen er ange |
| Volume (pre-PHF) (vph): | | 337 | 157 | 346 | | 26 | 895 | 1925 20 40 50 |
| G/C for movement: | | 0.24 | | 0.24 | | 0.02 | | |
| Number of lanes; | | | | 2 | | 7 | 2 | |
| CALCULATIONS: | | ı | | | | | | |
| Length of red interval (sec): | | 76.0 | | 76.0 | | 98.0 | . 38.0 | |
| Average total queue (veh): | | 7.1 | | 7.3 | | 0.5 | 9.4 | |
| Maximum total queue (veh): | | 12 | | 12 | | 2 | 15 | 1 |
| Total queue length (feet): | 1 | 300 | | 300 | | 50 | | |
| Required storage/lane (feet): . | | 150 | | 150 |] | 50 | 200 | |
| PERMITTED LEFT TURNS: | | | | | | | | |
| Opposing volume (pre-PHF): | | | | | | | | r |
| Opposing sat, flow rate: | | | | | | | | |
| CALCULATIONS: | | | • | | | | | |
| Opposing flow ratio (Yo): | 1 | | | | | | | |
| Unblocked G/C: | | | | | | - | | |
| Effective red interval (sec): | | | | | | | | ٠ |
| Average total queue (veh): | | | | | | | | |
| Maximum total queue (veh): | · | | | | | | | |
| Total queue length (feet): | | | | | | | | |
| Required storage/lane (feet): | | | | | | | | |

METHODOLOGY AND FORMULAS USED:

Larger of and atmost a (1 - GFC) * Oftic larger

Anthrope proceedings of Visional 1 Port Many all 1800

Maximum queue; Flandom arrival/Constant service Renders armais between according to a Paisson distribution. There is a probability equal to the confidence level desired (a.g. 30%) The transfer leaves to the less than te provid to the marketion queue

Profe of arrelat a N a Red Secretary 'espects' [For Projector Section] Photo of animals we let s 1. For all proceedings for relation 0 , $1,\dots,p_{k+1}$ Max 18 Highest House State that special probabilism > (1 - continues invol)

Oscar action a University opens," Stronge bengin par week to

Proposed attempt (no leave a Channe brought ! Harthard of lateral marries) un to the ment include extend with the

Opposing flow rates You represely released and expressing last firm step and

Unblocked G/C (gu/C) = (g/C - Yo)/(1-Yo)

SIGNALIZED QUEUE ANALYSIS

Project Name: Project Number:

Project Numbe Analyst: Date:

Filename:

Mitton-Freewaler STA and TSP Update 6749 gep

6/2/2005

Intersection: Conditions (yr, alt., etc.): H:projfile:6743:exceNSig Queue2025Four.xis)SIGQUEUE

ORE 1:17.5W 2nd Ave.
2025 Three-lane.

KITTELSON & ASSOCIATES, INC. 610 SW Alder, Suite 700

610 SW Alder, Suite 700 Portland, Oregon 97205 (503) 228-5230 Fax: (503) 273-8169

GENERAL INPUT PARAMETERS:

Cycle Length: Confidence Level (C.L.): Storage length/vehicle: 100 sec

| | APPROACH/MOVEMENT | | | | | | | |
|-------------------------------|--|---------------|-----------------|--------------|--|--|--|--|
| | #1 NELT | #2 NBTH/LT | SBLT | #4 SBTWHT | #5 EBLTS | #6 EB-Shared | #7 WBLT | #8 Weth/ht |
| INPUT PARAMETERS: | | | | | | (************************************* | ************************************** | , 11, 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |
| Volume (pre-PHF) (vph): | n circuit suctors | 337 | | 348 | in the second | 20 | 895 | |
| G/C for movement: | 10000 | 0.24 | 100 | 0.24 | A STATE OF THE STA | 0.02 | | |
| Number of lanes: | | | | | | - 1 | 7 | |
| CALCULATIONS: | - T | | | | | | | |
| Length of red interval (sec): | ļ | 76.0 | | 76.0 | | 98.0 | 38.0 | |
| Average total queue (veh): | | 7.1 | | 7.3 | | 0.5 | | |
| Maximum total queue (veh): | Į. | 12 | | 12 | | 2 | 15 | |
| Total queue length (feet): | l l | 300 | | 300 | 1 | 50 | 375 | |
| Required storage/lane (feet): | | 300 | | 300 | [| 50 | 200 | |
| PERMITTED LEFT TURNS: | | | | | | | | - |
| Opposing volume (pre-PHF): | 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 | | To the state of | | T- 44 7 7 6 | | | |
| Opposing sat, flow rate: | | į. | | | | | | |
| CALCULATIONS: | 1 . | { | | | | | | |
| Opposing flow ratio (Yo): | | İ | | İ | • | | i . ' | ĺ |
| Unblocked G/C: | - 1 | | | | i | | | |
| Effective red interval (sec): | ı | | | | | |] | |
| Average total queue (veh): | 1 . | | | | | | | |
| Maximum total queue (veh): | 1 | | · · | | | | | |
| Total queue length (feet): | | | | | | , | | |
| Required storage/lane (feet): | ı | 1 | Ī | | | | 1 | |

METHODOLOGY AND FORMULAS USED:

Length of red interval = (1 - G/C) * Cycle length

Average queve/lane ≈ Volume * Registrati/ 3600

Maximum queue: Random envirol/Constant pervice
Rendom entires between gesconting on a Polemen Catholistic
Thomas is a professy organic to the Constant broad recording (e.g. 95%)
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Proof of armining within (front transaction) " and (4) (No. (Franchisco) of the business of the following o

Quouo longth = Maximum queue * Stanga south per verade

Required stresses per larse * Queue langth / Number of lanes, rounded up to the next highest whote vehicle

Opposing flow ratio Yo = copyright to the second property and flow rate sep-

Unblocked G/C (gu/C) = (g/C - Yo)/(1-Yo)

Memorandum



17355 SW Boones Ferry Rd Lake Oswego, OR 97035 Phone (503) 635-3618

Fax (503) 635-5395

To:

Milton Freewater Client

From:

Kay Van Sickel, Kate Schwarzler

Copies:

Milton-Freewater TAC

Date:

June 6, 2005

Subject:

Funding Memorandum

Project #:

12679

Funding Options

The Milton-Freewater streetscape improvement project can be funded by a variety of sources, including urban renewal funds and Community Development Block Grant (CBDG) grants and other federal and state program which are identified in this memo. Federal funds for transportation and infrastructure improvements are derived through the Economic Development Administration (EDA), the Housing and Urban Development Administration (HUD), and through the US Department of Transportation, Federal Transportation Administration (FTA). Access to federal grants is typically obtained through county or state governmental bodies, such As the Oregon Economic Development Department and Oregon Department of Transportation.

State funding, financing, and technical assistance are provided through Oregon Economic Development (OEDD), Oregon Department of Transportation (ODOT) and other programs. The following matrix provides a comprehensive list of funding "possibilities" available for consideration on the streetscape project.

| Funding Source / Contact | Program Description |
|--|--|
| The state of the s | Grants |
| | The Transportation Enhancement program provides federal highway funds for projects that strengthen the cultural, aesthetic, or environmental value of our transportation system. The funds are available for twelve "transportation enhancement activities" specifically identified in the Transportation Equity Act for the 21st Century (TEA-21). These activities fall into four main groups: Pedestrian and Bicycle Projects Historic Preservation related to surface transportation |
| Transportation Enhancement Program | Landscaping and Scenic Beautification Environmental Mitigation (highway runoff and wildlife protection only) The intent of the program is to fund special or additional activities not |
| Contact: Pat Rogers Fisher 503-986-3528 | normally required on a highway or transportation project. So far, Oregon has funded more than 150 projects for a total of \$63 million. Transportation Enhancement or "TE" projects are selected through a |
| 100 000 0020 | competitive process. The funds are provided through reimbursement, not grants. Participation requires matching funds from the project sponsor, at a minimum of 10.27%. Applications are accepted only from public agencies. Private organizations may apply in partnership with a local, state or federal agency, or Indian tribe. All projects must have a direct relationship to surface transportation. (\$ of grant awards: vary) |
| | www.odot.state.or.us/techserv/engineer/pdu/enhancement/progrm%20informetion/enhanceoct02.htm |
| Pedestrian and Bicycle Improvement Grant Program Contact: Michael Ronkin, (503) 986-3555 | ODOT's Bicycle and Pedestrian Program administers two grant programs to assist in the development of walking and bicycling improvements: local grants and Small-Scale Urban Highway Pedestrian Improvement programs. For both these grants, cities that have adopted plans with identified project will be in the best position. Grant funds for highways, county roads and local streets where improvements are needed for bicycle and pedestrians and/or bicyclists. Eligible project types include: ADA upgrades; completing short sections of missing sidewalks or bike lanes; street crossing improvements; intersection improvements; and minor widening for bike lanes or shoulders. Grant awards up to \$100,000 based on past trends. |

| Funding Source | |
|--|---|
| / Contact | Program Description |
| 21st Century Community Fund | The 21st Century Community Fun leverages existing revenues from both the Oregon Lottery and transportation funds to invest in affordable housing, transportation, water, sewer, and main streets. This fund specifically targets rural and economically distressed communities, providing funding for passenger rail and connecting buses, elderly and disabled transit services, access and right-of-way purchase, and improvements to the local street network. |
| Oregon Special Public Works Fund | The Special Public Works Fund, through OECDD, distributes grant and loan assistance from the Oregon Lottery for economic development projects in communities throughout the state. To be awarded funds, a project must support businesses wishing to relocate, expand, or remain in Oregon. SPWF awards can be used for improvement, expansion, and new construction of transportation facilities. The SPWF emphasizes loans to assure that funs will return to the state over time for reinvestment in other local economic development projects. |
| Oregon Transportation Infrastructure Bank | The Oregon Transportation Infrastructure Bank is a project financing tool for Oregon communities to help meet need for transportation system maintenance and improvements. As a project financing tool, the OITB works much like a private bank. It provides project loans and a range of credit enhancement services to help finance eligible transportation projects. Eligible projects are projects that meet federal-aid highway criteria or meet the definition of a transit capital project. The OTIB has approved loans varying in size from \$170,000 to \$5 million. |
| Economic Development Administration Community Development Block Grants | Construction and/or improvement of a wide variety of facilities and infrastructure that will primarily benefit low-moderate income persons. Grants and loans for projects that benefit low and moderate income households. Section 108 loans can leverage \$1m or more but have strict procurement rules. Eligible project types typically include infrastructure and in particular ADA and pedestrian accessibility improvements. (\$ of grant awards: vary) |
| Oregon | |
| Community Block Grant Program | Grants for infrastructure improvements needed to support a business that will create or retain permanent jobs, the majority of which will be made available to low and moderate income workers. For public infrastructure projects, the ratio is one job per \$20,000 invested. (\$ of grant awards: vary) |
| Contact; Michelle | http://www.econ.state.or.us/cdhg.htm |
| Bilberry 503.986.0142 | |
| Immediate Opportunity Grant Program | The Oregon Economic and Community Development Department (OECDD) an OD OT administer a program designed to t assist local and regional economic development. The primary factors in determining eligible projects for the immediate Opportunity Fund Program are improvement of public roads, inclusion of an economic development-related project of regional significance, creation or retention of primary employment, and ability to provide local funds (50/50) to match grant. The maximum amount of any grant under the program is \$500,000. |

| Funding Source / Contact | Program Description |
|--|--|
| USDA Grants | Grants and loans for rural infrastructure along with loans to distressed communities. (\$ of grant awards: vary) /www.rurdev.usda.gov/rd/nofas/index.html |
| Urban Forestry Grants | The Oregon Department of Forestry's Urban and Community Forestry Unit supports the stewardship of Oregon's urban and community forests. Through the Urban Forestry activities, on-site technical and financial assistance is available for communities, nonprofit groups, and civic organizations who want to plant and property maintain trees within their urban areas, especially street trees. |
| ODOT Special City Allotment (SCA) Programs | The Legislature mandated \$1 million in state gas taxes to be distributed annually among cities with populations of less than 5,000. ODOT sets the distribution and dollar amount by agreement with the League of Oregon Cities. Half of the funds come from the cities' share of gas tax revenues and the half comes from ODOT's share of the State Highway Fund. Locals can receive \$25,000, one-half the maximum grant amount, up front, with final payment due upon completion of the project. Payments are included in the expenditure budget for Local Government in the Highway Program. (Note: A similar program exists for small counties. However, funds are transferred directly and are not contained as a budget expenditure.) |
| # W W W W W W W W W W W W W W W W W W W | http://www.odot.state.or.us/lgs/funding.html |
| . | Low Interest Loans |
| Oregon Transportation Infrastructure Bank Contact: Paul O. Cormier (503)986-3921 | The OTIB is a statewide revolving available to port districts to fund long-term (up to 30-years) low interest loans designed to promote innovative transportation funding solutions. Project must be Federal-Aid eligible (this may require re-designation of access road to achieve appropriate status). Eligible costs include engineering, environmental permitting, right-of-way, construction and project management. http://www.oregon.gov/ODOT/CS/FS/otib.shtml |
| Special Public Works Fund Contact: Tom Meek | The Special Public Works Fund program provides funding for the infrastructure that supports job creation in Oregon. Loans and grants are made to eligible public entities for the purpose of studying, designing and building public infrastructure that leads to job creation or retention. The 2001 Legislative Assembly expanded the program to help municipalities cope with financial loss associated with natural disasters. For emergency |
| 503-986-0134 | projects eligible municipalities can apply for funding to meet the match required to receive federal funds. |

| Funding Source / Contact | Program Description |
|--|--|
| | http://www.econ.state.or.us/spwf.htm |
| USDA Loans | Grants and loans for rural infrastructure along with loans to distressed communities. |
| | http://www.rurdev.usda.gov/rd/nofas/index.html |
| | Local |
| Local Capital Improvement Program | City can fund public facilities using general funds or dedicated revenues. However, this is not usually applicable, since general funds are usually "over committed" by various city services. |
| Local Property Tax Levies | City can fund roads, schools, parks, and other facilities though voter-approved referendums, subject to Oregon law. Typically the primary revenue source for local governments to upgrade public infrastructure. Property taxes go into general fund operations and are not used in most Oregon cities for street improvements or maintenance. Not usually a viable of funding for single projects that cost less than \$2,000,000. |
| Gas Tax Revenues | In Oregon, the state collects gas taxes, vehicle registration fees, overweight and overheight fines, and truck taxes and returns a portion of the revenues to cities and counties. Oregon cities typically use their state gas tax allocation to fund street construction and maintenance. However, these funds can be used to make any transportation-related improvements only within the public right-of-way, including sidewalks, intersection upgrades for pedestrians and bicycle lanes. |
| Local System Development Charges | Development impact fees, directly related to the proportional share of capital costs. Becoming an increasingly popular way to fund public works infrastructure needed for new development. Applicable to sewer and water systems. |
| Transportation System Development Charges (SDC) | A transportation system development charge or traffic impact fee can be charged to new development to pay for infrastructure improvements needed to serve new development. Cities throughout Oregon use transportation system development charges or impact fees to assist in funding traffic improvements related to the development. |
| Reimbursement District or Zone of Benefit District | Public or private entities that build road systems can be compensated by future property owners at a proportional rate, as development occurs. Usually limited to private construction of roads, this mechanism can be useful for public/private developments |
| Advanced Financing Agreements | Private entities that build public facilities can be compensated by the city as development occurs. Limited to private construction of public facilities, this mechanism is useful for public/private developments. |

| Funding Source / Contact | Program Description |
|--|---|
| | LIDs can be formed by petition and subsequent legislative action under Oregon |
| Local | Law. They are often used to finance public infrastructure (roads, sidewalks, |
| Improvement | bikeways, sewer, water, etc.) using guaranteed payments from affect properties |
| District (LID) | with a lien placed on those properties until the LID share is paid off. They |
| | typically require at least 51% of affected properties to approve the LID. |
| • | Urban Renewal Districts can be formed by legislative action under Oregon law |
| | (with acknowledgment of an Urban Renewal Plan). Project financing is secured |
| Urban Renewal | through dedication of increases in tax increment revenues in the affected |
| District | district. Within an Urban Renewal District boundary, property taxes are |
| | collected at a rate that is frozen at the time of creation. Increases in the |
| | property taxes create the increment financing and are earmarked for special |
| | capital improvement projects within the district. The City of Milton-Freewater |
| | currently has an Urban Renewal District. And Economic Improvement Distri ct is a funding mecha nism where the |
| Economic | assessments are based on property assessment values or are a simple fee on |
| Improvement | property. EIDs cannot fun capital improvement projects, but they generally |
| District | fund smaller projects and programs that can complement larger downtown |
| District | improvements. EIDs are limited to a five year duration and can be renewed. |
| ************************************** | A Business Improvement District works much the same as an EID, except that |
| Business | the assessments are paid by business owners rather than property owners. |
| Improvement | BIDs cannot pay for capital improvements, but may fund smaller projects and |
| District | programs that support other downtown improvements. A BID can have a time |
| | limit, or can be perpetual. |
| | Bonds are often sold by a municipal government to fund transportation (or |
| | other types) of improvements, and are repaid with property tax revenue |
| General | generated by that local government. Under Measure 50, voters must approve |
| • | G.O. bond sales with at least a 50 percent voter turnout. Cities all over the |
| Obligation | state use this method to finance the construction of transportation |
| Bonds (G.O. | improvements. For smaller jurisdictions, underwriting costs can become a high |
| Bonds) | percentage of the total financing cost for bond issues. "Bond Pools" such as those associated with the Oregon Infrastructure Bank (see above) assists small |
| | jurisdictions by pooling together several small bond issues, thereby achieving |
| | economies of scale with lower financing costs. |
| | Revenue Bonds include bonds sold by a city and repaid from an enterprise fund |
| • | that has a steady revenue stream such as a water or sewer fund. Revenue |
| • | bonds are typically sold to fund improvements in the system which is producing |
| | the revenue. Revenue bonds are a common means to fund large high cost |
| Revenue Bonds | capital improvements with a long useful life. A water or sewage treatment |
| | plant are examples where high construction cost over a short period makes it |
| | difficult to pay for the project with operating funds. However, the long-term |
| | revenue stream from user revenues makes the sale of bonds a viable |
| | alternative, with the cost of the facility spread over a long time period. |
| 1 | Othon |
| <u> </u> | Other |

| Funding Source / Contact | Program Description |
|--------------------------|---|
| Meyer | In rare instances, foundations or trusts may award grants to help fund civic improvements, including roads, parks and civic buildings. The largest share of the dollars the Trust awards each year is made under the General Purpose Grants program. General Purpose Grants support projects related to arts and humanities, education, health, social welfare, community development, the environment and a variety of other activities. Proposals may be submitted at any time under this program, and there are no limitations on the size or duration of these grants |
| Memorial Trust | Applicants normally have tax exemption under Section 501(c)(3) of the Internal Revenue Code, and have been determined not to be a "private foundation" under Section 509(a) of the code. The Trust also awards grants to applicants that have federal tax exemption under other designations, such as public schools and government entities. http://www.mmt.org |
| Private Donations | Donations from individuals or corporations can be collected from cities or 501(c)3 profits to be used for various elements of public street improvements, such as paving (bricks), landscaping and benches. |

Site Furnishings

The section below contains information regarding proposed site furnishings (photos are also attached to this memo). The City of Milton-Freewater should continue to use the street lights and tree grates that were selected on prior projects to provide continuity throughout the city.

- Benches: Manufactured by Keystone Ridge Designs (1-800-284-8208), model numbers RE24, RE26, RE28, RE14, RE16, and RE18. Benches, both with backs and without, come in a range of lengths to best suit the specific site placement. Benches can be ordered in a range of colors and can incorporate logos.
- Litter Receptacle: Manufactured by Keystone Ridge Designs (1-800-284-8208), model numbers RE3-22, RE3-32, and RE3-38. The litter receptacle is from the same series as the bench for a coordinated look. The round receptacle was chosen and comes in three different sizes. Litter receptacles can be ordered in a range of colors and can incorporate logos.
- Bicycle Rack: Manufactured by Keystone Ridge Designs (1-800-284-8208), model numbers SN01-3, SN03-5, SN05-7, and SN07-9. The bike rack comes in a variety of lengths to fit specific site applications. Bike racks can be ordered in a range of colors.

- Drinking Fountain: Manufactured by Murdock Fountains (1-800-45-DRINK), model 1776 Old Style.

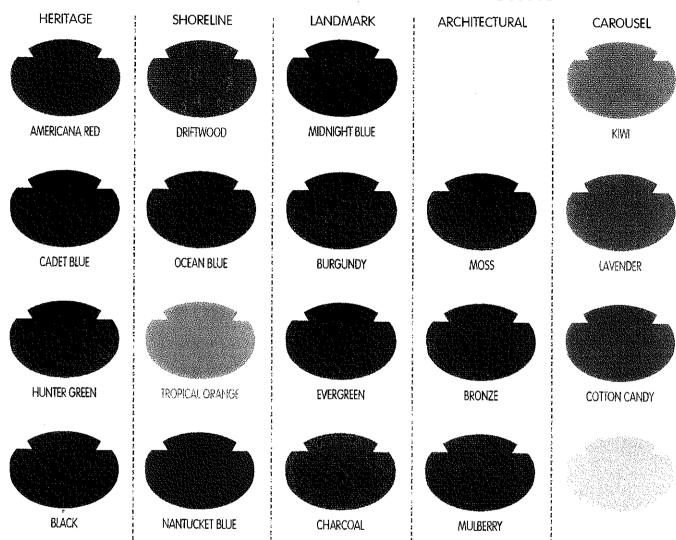


Page 6 | The READING Series | 1.800.234.8208 | www.keysroneridcedesigns.com | Exclusive She Furnishings



Page 32 | Bike Racks | 1.800.284.8208 | www.keystoneridgedesigns.com | Exclusive Site Furnishings

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SUPPORT OP: IOM:



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SUPPORT OPTION Actustoble (eq

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KEYS-DELD" Michal émisin

The Kernshills of finish protects and piece of furniture from chipping, cracking, UVA demographic surparolleled correst on resistance. Seriells of its strangin, durability and quality - our assurance of compress excellence. Stell proceeds are finished with a two-coat powder coating process applied to a 7-15 natificeness. Substrains are paration includes sandbiosting to a whire finish to a move all surface conformments, the ultimate degrees in power or cod preparation. The rew product then receives a corrosion-inhibiting phusiphate coating, per TTC+90 method (, prior to the application of the pow der coating. The tirs coat applied to the substrate is zinc rich epoxy powder primmar used exclusively on variable decipans. The second coal is a colored polyester powder coating. Both coals are electrostatically applied and over our ad according to powder coating manufacturing specifications to and electrostatically applied and over our ad according to powder coating manufacturing specifications to and electrostatically applied and over our adaptive powder coating manufacturing specifications to and electrostatically applied and over our adaptive powder coating manufacturing specifications to and electrostatically applied and over our adaptive powder coating manufacturing specifications to and electrostations are adaptive powder. smooth, splittly linish. The rest it of this two-coat process is an optimum non-parous film that deline. The Keyst one Ridge Designal stemp of a udity. Keyshald its arregistered trademant of Keystone Ridge Designs, Inc.

Keysiana Ridge Designs, Inc. 1 utilizes ingo-quality-tatals as stall assembly hore wave where applicable. Anchoring hardware, dur to the approximation required for each instribution, is not supplied.







Home Historical Fountains Flush Boxes Hydrants Safe Water

Specifications Auto CAD Parts News-Special Catalog Q & A





The anti-freezing, pedal operated **1776 Old Style** is a Murdock original design. With a decorative cast iron pedestal and brass polished bowl and bubbler, this fountain is the choice for historic parks or theme settings, and quite popular with streetscapes.

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Voice: 513.471.7700 Fax: 513.471.3299

E-mail: info@murdockfountains.com

\$ 1500.00

Overall, the goals of the STA are to increase the vibrancy of Downtown Milton-Freewater, reduce vehicle travel speeds, increase pedestrian safety, and encourage non-auto modes of transportation.

Preferred Redevelopment Option

Convert Main Street to a three lane facility through the Downtown and Civic Districts.

This option combines converting Main Street to a three-lane facility through the Downtown and Civic Districts while keeping the remaining corridor four lanes and improving it with traffic calming features.

Alternate Redevelopment Option Two

Convert Main Street to a three lane facility.

This option converts the entire length of Main Street to a three-lane facility to slow traffic and provide more public space for pedestrians, bicycles and aesthetic uses.

Alternate Redevelopment Option Three

Maintain Main Street as a four-lane facility and provide curb extensions at key intersections.

This option maintains the existing street cross section while providing additional traffic calming measures throughout the corridor. These features would decrease the crossing distance for pedestrians by providing visual cues for motorists to travel as slower speeds. Curb extensions, street trees, visual cues, light poles, and safer crossing conditions would be implemented.

Traffic Operations

Preferred Redevelopment Option: Convert Main Street to a three lane facility through the Downtown and Civic Districts.

Additional study needs to be performed on this option, but the initial study suggests that it will accommodate the traffic load and the intersections would operate at a normal level.

The City of Umatilla has been discussed as a comparable example. It similarly incorporates two travel lanes with a median and center turn lane through the downtown area. Traffic counts between the two cities are slightly different, but within a comparable range. The City of Milton-Freewater experiences 10,400-13,400 ADT while the City of Umatilla experience between 7,900-9,800 ADT.

Option Two: Convert Main Street to a three lane facility.

According to the report provided by Kittelson & Associates, Inc., with the three lane scenario, all the intersections would continue to operate under capacity during both the weekday a.m. and p.m. peak hour periods.

Option Three: Maintain Main Street as a four-lane facility and provide curb extensions at key intersections.

Implementing traffic calming features would not impact vehicle capacity and therefore the system would operate as forecast in the no-build conditions outlined in the Kittelson & Associates, Inc. report.

Traffic Signals

The City will likely need a strong advocate to get a pedestrian activated crossing signal placed in the Main Street corridor. ODOT may or may not approve a pedestrian activated crossing signal due to traffic volumes that would not reach the threshold for requiring one.

A full traffic signal will likely be hard to justify to ODOT. The community would likely need to close side streets to drive up traffic volumes enough to warrant a signal. For example, if a signal was placed at the intersection of 9th and Main, 8th and 10th streets would need to be closed. Initially it seems unlikely that ODOT would approve a full signal based on existing traffic volumes.

If the City decides to pay for and install an un-warranted traffic or crossing signal, it is likely that they would be required to be responsible for any liabilities (i.e. a pedestrian gets hit in the crosswalk).

Public infrastructure

Parking

It is essential to provide on-street parking in front of businesses in the Downtown and Civic Districts. The higher density of commercial establishments in the area contributes to the high parking demand. For most downtowns, the parking demand is highest during the mid-day period or just after lunchtime in the early afternoon. Public off-street parking is available in the study area and is provided in four off-street parking lots in the corridor. These four lots provide approximately 130 parking spots for public use.

In addition, several private retail/commercial businesses in the study area have dedicated parking spaces for customers and employees. The majority of these lots are found at the north end of the corridor and supply approximately 180 business off-street parking spaces. In the future, if parking demand increases dramatically, it is possible that the private business parking spaces could be integrated into the public supply as part of an overall parking management plan for downtown.

Access

According to the 1999 OHP, if a section of statewide highway is designated as Special Transportation Area (STA), as planned for ORE 11 through Milton-Freewater, "direct street connections and shared on-street parking are encouraged" and "local auto, pedestrian, bicycle, and transit movement to the area are generally given more importance than the through movement of traffic." In case of public roadway spacing, the existing city block or the city block spacing as identified in the local comprehensive plan is an accepted norm. For private driveways, minimum driveway spacing of 175 feet, measured from center to center on the same side of the roadway is allowed.

A majority of the existing accesses do not meet the ODOT access spacing standard for an STA. Nonetheless, due to the low traffic volume in the area, and historically low number of crashes, the existing accesses are anticipated to operate safely and acceptably. Any future development in the corridor should be encouraged to meet the spacing standard and ensure that proposed driveways operate safely.

Bicycle Facilities

There are currently no striped bicycle lanes through the study area. At the first Public Open House residents voiced strongly that they did think it was appropriate to have striped bike lanes on Main Street. However, there are a few people in support of having bike lanes, striped or un-striped, as part of Main Street.

The existing Right-Of-Way does not have enough room to accommodate the existing four lanes of traffic, parking on both sides of the street and a striped bike lane the entire length of the corridor. Residents were unwilling to give up parking in order to provide bicycle lanes.

The proposed three lane configuration has enough room to accommodate travel lanes, parking on both sides of the street and marked bicycle lanes. However, residents again voiced at the first Public Open House that they did not want bike lanes on Main Street. In all cases they would prefer that bike routes be designated on parallel streets to Main Street, such as Columbia Street and Mill Street.

At the second Open House citizens again voted against incorporating striped bike lanes on Main Street. In addition to safety concerns due to possible conflicts with large trucks, the preferred option incorporates four lanes of traffic which does not allow enough room to also have bike lanes.

Transit

Milton-Freewater recently started bus service again that provides local connection throughout Milton-Freewater as well as connections to Walla Walla. Proposed improvements should accommodate bus facilities and plan for future expansion of the transit system

Land uses, types, and densities.

The existing land uses, types, and densities found along Main Street are as follows:

Residential Low Density (R-1)

As seen on Figure 1.1, the R-1 zoning district is located on one block on Main Street, just north of City Hall. The intent of R-1 is to provide for larger, more secluded, home site with a maximum of four units per acre.

Residential High Density (R-3)

As seen on Figure 1.1, the R-3 zoning district is located mostly on southern Main Street. The intent of R-3 is to provide the widest range of housing alternatives including multifamily units. A maximum density of 26 units per acre is permitted.

Residential Office (R-O)

As seen on Figure 1.1, the R-O zoning district is located on Main Street, mostly between 7th and 9th Avenues. This zoning district is intended to encourage a compatible mix of residential development and small private or public offices.

The intent of R-O is to all a mix of office and residential uses while still maintaining the residential character of the neighborhood. This balance must be achieved with all proposals. R-O zone is only allowed when abutted by a commercial zone, 75% of the lots are developed, and at least 50% of the uses are nonconforming in a Residential zone.

Retail and Service Commercial (C-1)

As seen on Figure 1.1, the C-1 zoning district is located on Main Street, in northern Milton-Freewater and between 9th and 13th Avenues. This zoning district is intended to provide for general retail and light service commercial uses such as hair salons, restaurants, and supermarkets.

General Commercial (C-2)

As seen on Figure 1.1, the C-2 zoning district is located on Main Street, between 9th and 11th Avenues. This zoning district provides for commercial services such as auto repair and building supply outlets. The uses in this zone involve heavier traffic than C-1 uses.

Public Lands (PL)

As seen on Figure 1.1, the PL zoning district includes City Hall and the Library on Main Street. The public lands zone provides for a full range of structures, services, and land uses provided by public agencies on publicly-owned land. A Site Plan Review process is used to determine some code requirements.

The following is an existing land use that is not found directly adjacent to Main Street, but is found within the study area:

Residential Medium Density (R-2)

As seen on Figure 1.1, the R-2 zoning district is located on residential streets, a block off Main Street. The intent of R-2 is to provide a greater range of housing types and densities than R-1, while maintaining the character of a single-family neighborhood. Up to 16 units per acre are permitted in R-2.

Impact to codes and policies

The impact to codes and policies in explained in detail in the Zoning Code and TSP Amendments memorandum.

Private or public development projects in the downtown

The Opera House has great potential for becoming a landmark for the downtown area of Milton-Freewater. There are several other buildings listed on the Historic Register in the area and a historic "focus" could be developed as a point of interest for visitors. The historic focus could help draw tourism spending which would in turn support commercial as well as arts, entertainment and recreation and accommodations and food service. The City should develop programs to assist owners and operators of these shops to upgrade their facilities through coordinated efforts which area sensitive to the historic and architectural values.

During the second Open House citizens responded favorably to allowing the residential areas in the Gateway Zones adjacent to Main Street to be allowed to operate home-based businesses. In order for the downtown area to draw more business, flexibility should be given to the corridor to allow businesses to develop while still retaining the unique residential setting.

In addition, lots for potential redevelopment have been identified. Some of the lots are vacant and are ready for redevelopment while other lots are more appropriate for future redevelopment opportunities after their current land use changes.

Potential environmental issues

No potential environmental issues have been discovered at this point of the study that would impact this project.

Preliminary Cost Estimates

Preliminary draft cost estimates are included as part of this report. They are an initial look at the costs and should be used for planning purposes only.



Memo

17355 SW Boones Ferry Road Lake Oswego, OR 97035

Phone (503) 635-3618 Fax (503) 635-5395 Project: Milton-Freewater

Project No.: 12679

Date: March 28, 2005

From: Kate Schwarzler

Regarding: SHPO Information

According to the State Historic Preservation Office (SHPO), the Opera Building located at the corner of SW 10th Avenue and Main Street does not appear to have any documentation or review regarding placement of the building on the National Register of Historic Places or the State Inventory.

In order to get a building listed, the City would need to contact SHPO and ask for a Preliminary eligibility Evaluation packet. This packet explains the process and has a preliminary information form that needs to be filled out and submitted to SHPO. After the form has been submitted, National Register staff will provide an opinion regarding the potential for the property to meet the National Register eligibility criteria.

Streetscape improvements will need to be coordinated with SHPO prior to and during the engineering phase of the projects. Improvements, depending on the nature of the changes, which do not fit with the historical character or history of Milton-Freewater may impact decisions to be able to create a Historic District in the future. Proposed changes should be as unobtrusive as possible. For example:

- Don't exaggerate bump outs with planters or trees at the corners;
- Brick pavers may be more appropriate than concrete on sidewalks;
- Trees shouldn't obscure buildings (and should be consistent with trees that were there historically, if possible).

Future projects may require the City to go through a review process with SHPO. The City can contact SHPO prior to the start of any future projects to coordinate.

- Kirk Ranzetta (503) 986-0678
- Sarah Jalving (503) 986-0679.

Additional information has been attached to this memo, including:

- 1. Outline of the process to nominate property for the National Register.
- 2. National Register Benefits and Restrictions.
- 3. Historic Survey and Inventory database information.



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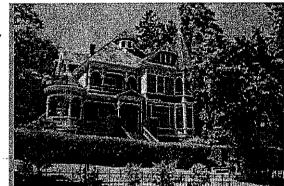


National Register of Historic Places

How do I list a property?

Anyone can nominate an historic property to the National Register of Historic Places. However, if the property is privately owned, consent from the property owner is required before the property can be officially listed. In the case of a historic district, a majority of property owners must object in order to stop a listing. Owner consent is not required to list public property, however, we urge anyone who is interested in listing a public property to work closely and collaboratively through the nomination process with the public entity that owns the property.

-A successful nomination process can take up to one year from first inquiry. We advise people to allow 100-150 hours to prepare the actual nomination form. The SHPO maintains a list of consultants who research and prepare National Register hominations professionally.



7-Step National Register Nomination Process

1. Contact SHPO

If you are interested in nominating a property for listing in the National Register, the first step is to request the Preliminary Eligibility Evaluation packet by calling 503-986-0672. This packet includes a form that asks for descriptive and historical information about your property. You should complete this form and include some color snapshots of the property's interior and exterior, then return the form and photographs back to us. After evaluating your information, the National Register staff in this office will provide you with a professional opinion about the property's potential for meeting the National Register eligibility criteria.

2. Obtain Bulletins, Forms, and SHPO Supplementary Information

If the property appears to be potentially eligible for listing, we will respond by sending you: A) a sample nomination form and National Register Bulletins #15 ("How to Apply the National Register Criteria for Evaluation") and #16A ("How to Complete the National Register Registration Form"). These indispensable bulletins serve as the primary instructions and guidance material for preparing a nomination, a document that must conform to a highly specialized format. (The Oregon SHPO urges nomination preparers to read these bulletins in their entirety before beginning a nomination); and B) the Oregon SHPO Supplementary Information form, which clarifies and adds to the federal instructions, but does not replace them. Please note that this supplementary information supplants the state's former technical guide for preparing nominations.

The National Register website has many additional bulletins that you may find helpful. The National Register Registration Form and continuation sheets can also be retrieved from the National Register. website; however, the Oregon SHPO provides an preformatted nomination form available in MS Word for your use that you may find easier to work with.

3. Prepare Form

There are many sources that will yield historical information about your property. The process for obtaining that information may differ from jurisdiction to jurisdiction. For information on researching historic properties, you can obtain National Register Bulletin # 39 from at the National Register web site.

A National Register nomination essentially consists of a four-page form and continuation sheets, photographs, and maps. You will find the data necessary to complete the form in National Register Bulletin #16A ("How to Complete the National Register Registration Form"). A narrative architectural description and a narrative statement of significance follow the form on continuation sheets, and comprise the heart of a nomination. The statement of significance must be completed based on solid research and documentation. The Oregon SHPO strongly encourages the use of footnotes or endnotes when preparing the document.

4. Prepare Photographs

National Register Bulletin #16A ("How to Complete the National Register Registration Form") has explicit instructions about the photographic requirements of a National Register nomination form. The instructions must be followed exactly. In addition, be sure to consult the SHPO's National Supplementary Information on photographs for critical information and clarification on film, paper, processing, and labeling. The National Register has a bulletin on how to take better photographs for nominations.

5. Submit Nomination to the Oregon SHPO

Deadline dates for the submission of nomination materials correspond to the meetings held each year by the <u>State Advisory Committee on Historic Preservation</u> (SACHP). Nomination submission deadlines are as follows: **November 1** for the February meeting, **March 1** for the June meeting, **July 1** for the October meeting. Check the above SACHP link to obtain information on scheduled meeting dates.

Nominations must be received in our office on hard copy no later than the deadline date. Materials we receive by or on the deadline will be considered the final draft submission by the preparer. Partially completed nominations, or placeholders will not be accepted. Materials postmarked on the deadline date will not be accepted.

A nomination may not be scheduled for SACHP review until it is considered adequate to the documentation standards set forth by National Register Bulletin # 16A and the Oregon SHPO Supplementary Instructions. Our staff may request revisions to the nomination document before placing a nomination on the agenda for an upcoming meeting. Preparers are advised that the SACHP may request additional revisions after it has heard the nomination.

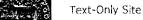
6. Make Revisions

When the SACHP approves a nomination, or approves it with conditions, the preparer may be asked to make minor corrections or additions to the document after the meeting. Once those revisions are completed, the nomination is sent back to the SHPO, where staff finalizes the document and ships it to Washington, D.C. office of the National Register. The National Register staff in Washington has 45 days to review the document and either approve or reject the property for listing in the National Register.

7. Receive Notification

Our office is notified of the decision by the Keeper of the National Register between 45 and 60 days after the date that we send the nomination to Washington. Property owners and interested parties are immediately notified of the outcome by a mailing from the SHPO.

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National Register of Historic Places

Results of listing

National Register Benefits and Restrictions

The National Register program is a federal program administered at the state level by the State Historic Preservation Office (SHPO). The regulation of National Register-listed properties in Oregon takes place at the local level. The following benefits and restrictions apply to National Register-listed properties:

Benefits

- Recognition Owners may want receive an official certificate of designation and/or purchase an official plaque that can be placed on the building. Both of these are optional.
- Eligibility for federal tax credit The SHPO
 administers a federal tax credit program that
 can save building owners twenty percent of the cost of rehabilitating their National Register-listed
 commercial, industrial, or rental residential building. Requirements include submitting a short
 application form and performing only work that meets appropriate rehabilitation standards.
 Because tax aspects outlined above are complex, individuals should consult legal counsel, an
 accountant or the appropriate local Internal Revenue Service office for assistance in determining
 the tax consequences of the above provisions.
- Consideration in planning for federal projects Section 106 of the National Historic Preservation Act of 1966 requires that federal agencies allow for the Advisory Council on Historic Preservation to have an opportunity to comment on all federally licensed, permitted or funded projects affecting historic properties listed in the National Register. The Section 106 Review and Compliance Program is administered by the SHPO.
- Oregon tax incentive The Special Assessment for Historic Properties tax incentive program
 allows owners of properties listed in the National Register of Historic Places to have a "freeze"
 placed on the assessed value of the property for a 15-year period. The program is designed to
 assist property owners in the preservation of historic resources. State law establishes a
 requirement for a public open house once a year, the installation of a property identification
 plaque, and the option for commercial property owners to apply for an additional 15-year
 "freeze."
- Building code leniency Under Section 3403.5 of the Uniform Building Code/Oregon Structural Specialty Code, National Register properties, and other certified historic buildings, are eligible to be considered for waivers of certain normal code requirements in the interest of preserving the integrity of the property.
- Grants Competitive "Preserving Oregon" historic rehabilitation grants are available through the Heritage Conservation Division for properties listed in the National Register of Historic Places.

Restrictions

Local Government Protection No restrictions are imposed by the State of Oregon or the federal
government. However, state law does require local governments to offer some level of protection
to National Register properties. Properties listed in the National Register of Historic Places are
subject to protection under authority of <u>Oregon Revised Statutes 197.772</u> and <u>Oregon
Administrative Rules 660-23-200</u> relating to historic resources and <u>Statewide Land Use Planning</u>
Goal 5. Local jurisdictions (county or city) regulate National-Register-listed properties per their
local ordinances, which means restrictions will vary from jurisdiction to jurisdiction. Contact your



local planning bureau to determine the level of regulation in your community.

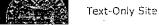
Special Provisions

Private property owners may object to the listing of their property by sending a notarized letter to that effect to the SHPO prior to final review. Public entities are not allowed to prevent the listing of their properties. In the case of a historic district, a majority of property owners must object in order to stop a nomination. Individual property owners within a historic district may not "opt out" if the majority of owners have not objected. National-Register-listed historic districts, just like individually listed buildings, are subject to whatever local regulations apply (as described above).

Commenting on National Register Nominations

If you wish to comment on the nomination of a property to the National Register, please send your comments to the State Historic Preservation Office before the forthcoming meeting of the State Advisory Committee on Historic Preservation. A copy of the nomination is available from the SHPO upon request.

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Survey and Inventory

Maintaining a statewide inventory of Oregon's historic and archaeological properties is one of the responsibilities of the State Historic Preservation Office as mandated by the National Historic Preservation Act of 1966 and Amendments. The surveys that contribute to this inventory provide important support to citizens, local governments, and federal and state agencies for identifying and protecting Oregon's cultural heritage resources.

Historic Survey and Inventory

A database called the Oregon Historic Inventory contains documents and electronic data from three survey methodologies:



- Historic surveys are conducted by historic preservation professionals often assisted by
 preservation graduate students or local volunteers. Neighborhood groups, local governments, and
 state or federal agencies may initiate surveys. Historic surveys are a fundable activity under
 SHPO's Certified Local Government Grant Program.
- The National Register of Historic Places adds information to the Oregon Historic Inventory from data collected on National Register nomination forms required for the <u>National Register Program</u>.
- The Section 106 Review and Compliance surveys add information to the Oregon Historic Inventory from data collected on forms required for the <u>Section 106 Review and Compliance Program</u>.

The Oregon Historic Inventory is available for research purposes at the SHPO office. To review or conduct research in the Inventory, please make an appointment with SHPO staff by calling 503-986-0672. Simple questions may be answered via telephone. The database is currently undergoing revisions and will be available on this website when completed.

Please note that archaeological survey records and data are housed separately and not integrated into the Oregon Historic Inventory database. See the Archaeological Survey and Inventory section near the bottom of this page.

Contact

Kimberly Dunn, Historic Survey Coordinator

Phone: (503) 986-0670 Fax: (503) 986-0793

E-mail: kimberly.dunn@state.or.us

Historic Survey Publications & Forms

- Historic Survey Program Instruction Manual [RTF 59 KB] [PDF 66 KB]
- Historic Survey Instruction Manual Appendices [RTF 666 KB] [PDF 107 KB]
- Historic Resource Survey Form [RTF 93 KB] [RTF 14 KB]
- Historic Resource Survey Form Continuation Sheets [RTF 13 KB] [PDF 10 KB]
- Cover Sheet and Form for Resource Groups or Clusters [RTF 23KB] [PDF 11KB]

• Instructions for the Historic Resource Survey Form [RTF 36 KB] [PDF 49 KB]

Archaeological Survey and Inventory

Archaeological surveys are conducted by professional archaeologists and must be done according to the State of Oregon Archaeological Survey and Reporting Standards (see publication below).

All identified archaeological sites (both prehistoric and historic) and isolated finds need to be recorded on Oregon SHPO Archaeological Services' forms. These surveys and site forms must be completed to comply with the federal Section 106 compliance requirements as well as research conducted by universities, private consultants (see publication below), or Tribal archaeologists.

All survey documents are inventoried by the SHPO, and data is added to the archaeological database. Information on known archaeological sites is not available to the general public. Qualified archaeological researchers may make an appointment to search the archaeological files with the SHPO Archaeologist.

Contact

Dennis Griffin, Archaeologist Phone: (503) 986-0674 Fax: (503) 986-0793

E-mail: dennis.griffin@state.or.us

Archaeological Survey Publications

• State of Oregon Archaeological Survey and Reporting Standards [PDF 151 KB]



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Memorandum



To:

Milton Freewater Client

From:

Jodie Vice, Todd Chase and Charlotte Larson

17355 SW Boones Ferry Rd Lake Oswego, OR 97035 Phone (503) 635-3618

Fax (503) 635-5395

Copies:

Date:

June 30, 2005

Subject:

Economic and Existing Code Analysis

Project #:

12679

INTRODUCTION

This memorandum describes demographic, economic and regulatory conditions within the downtown Milton-Freewater area. This assessment of economic opportunities and constraints takes into account historical growth trends and future projections for market-supportable development and business growth potential.

Work completed by Otak included:

- Conducting a survey among local stakeholders to confirm downtown development and transportation issues, opportunities and constraints;
- Performing a demographic, economic and market assessment to understand downtown development potential for retail, commercial and tourist-related development; and
- Documenting preliminary regulatory issues and local comprehensive plan amendments that would likely be required to optimize development and redevelopment potential in downtown Milton-Freewater.

ECONOMIC ANALYSIS

Local Economic Setting

The Milton-Freewater economy revolves primarily around the regional agricultural-base which includes productive orchards, irrigated row crops and dry land wheat, pea and bean production. Related spin-off industries include food handling, processing, packaging, and shipping. Milton-Freewater's access to Interstate Highway 84, US Route 395, rail and water terminals enables regional agricultural goods to be efficiently shipped nationally, and exported to many countries around the world.

According to the Milton-Freewater Comprehensive Plan, "employment in the agricultural sector has historically been very volatile with most employees laid-off for several months during the

winter and early spring. This problem has eased considerably in recent years as more types of fruit have been introduced which expand the harvest season. Installation of new storage facilities and new processing lines has also allowed local packers and processors to extend employment seasons up to nine or ten months. This has naturally helped to stabilize income and settlement patterns of those employed in harvesting and processing."

Milton Freewater is located ten miles from the shopping districts of Walla Walla, WA (population 48,000). According to the local comprehensive plan, "Milton Freewater retailers lose a large percentage of the local shopping dollar to Walla Walla as residents make the short trip to access larger selection and volume pricing." This situation is accredited with inhibiting growth of the commercial sector particularly in areas as clothing, small and medium household appliances and dry goods.

The sales tax differential between Oregon and Washington provides some benefits to Milton-Freewater commercial businesses as Washington shoppers tend to make large purchases such as major household appliances, electronics and furnishings in Oregon.

Downtown Milton Freewater, like many older downtown locations in the United States has suffered from the development of large format retail centers that tend to be owned by national chains. According to the local comprehensive plan, "owing to its origin as two separate and competing towns, the City has two separate downtown sites, the south being old Milton and the north being old Freewater. The gap between these areas is becoming less of a difficulty as Main Street and Broadway Avenue slowly but perceptibly develop as a commercial entity between the two old downtowns."

The local comprehensive plan recognizes the role of commercial retail strip development along Hwy. 11, north of Main Street. The comprehensive plan indicates that "this commercial area has largely developed since expansion of the highway in 1973. Again, Broadway is developing as a desirable commercial link between this area and the Main Street development."

According to a survey of businesses, most commercial development along Highway 11 appears to be less than 20 years of age and in relatively good physical condition. There also appears to be several infill and redevelopment opportunities within the corridor. The following is a list of local businesses relevant to the study area at the time of the study:

| Name | Address |
|------------------------------|----------------|
| Rite Aid Pharmacies | 105 SW 2nd Ave |
| Nita's Valley Properties Inc | 311 S Main |
| Mike's 2-Way Radio Service | 321 S Main |
| Subway | 322 S Main |
| Dennis Wallen Tax | 405 S Main |
| McDonalds | 406 S Main |
| Conoco Gas/Our Country | |
| Market | 421 S Main |
| First Christian Church | 518 S Main |
| Gildersleeve House | 604 S Main |
| Presbyterian Church Grace | 703 S Main |
| 7th Day Adventist Church | 713 S Main |
| | |

| • • • • • • • • • • • • • • • • • • • | |
|---------------------------------------|----------------|
| U-Haul | 725 S Main |
| Century 21 Seaquist & | |
| Associates | 725 S Main |
| Keylock Security Storage | 725 S Main |
| George Herbert Photography | 801 S Main |
| Umatilla County Mental Health | 808 S Main |
| Umatilla County Mental Health | 810 S Main |
| Wesley United Methodist | • |
| Church | 816 S Main |
| Munselle-Rhodes Funeral Home | 902 S Main |
| Sub Shop #38 | 4 SE 9th |
| CashCo | -903 S Main |
| Headlines Styling Salon | 905 1/2 S Main |
| Video Superstore | 907 S Main |
| Hot Shots | 907 1/2 S Main |
| LaMona's Ladies Apparel | 909 S Main |
| Atty Millarr, A. Andy | 920 S Main |
| Chevrolet Parts & Service | 1003 S Main |
| Milton-Freewater Bar & Grill | 1004 S Main |
| Liquor Store | 1006 S Main |
| Carpet Warehouse | 1008 S Main |
| Kennedy Mobile Vet | 1016 S.Main |
| Chriopractor Turner, Mark F. | 1018 S Main |
| Premier Physical Therapy | 1020 S Main |
| Tortilleria La Calandria | 1105 S Main |
| Car Company | 1112 S Main |
| M & C Machining & | |
| Manufacturing | 1114 S Main |
| Zip Trip | 1121 S Main |
| School's Community Credit | |
| Union | 1221 S Main |
| Trails West RV Park & | |
| Campground | 1420 S Main |
| Star Press | 1510 S Main |
| Gordy Plastics | 1530 S Main |
| Ironhorses | 1560 S Main |
| Humbert Septic Service | 1560 S Main |
| Tree Top Inc. | 1565 S Main |
| | |

The local comprehensive plan recognizes the importance of redeveloping the two downtowns. The plan states that "a pressing commercial need is for redevelopment and upgrading of the two old downtowns. Major revitalization has taken place in the south and north districts. These efforts have helped to bring new businesses and shoppers to the areas. It is vital that other store owners and operators continue the trend started by these projects so that everyone can benefit from increased shopping activity in the community. The city has provided technical help to shopkeepers and the Chamber of Commerce to initiate and assist these efforts. This will remain a high priority."

COMPREHENSIVE PLAN POLICY

Local economic development policies are intended to provide guidance to communities that are considering local initiatives to spur economic growth. The City of Milton Freewater's Comprehensive Plan identified the following economic development policies and conclusions, including:

- Milton Freewater will continue to update and improve its Economic Development Plan. .
- The need for commercial lands will be met through the redevelopment potential of 12 acres identified in the buildable lands needs analysis.
- Milton Freewater will encourage efficient use of its commercial lands through the implementation of ordinances to share accesses and maximize parking.
- The proximity of grain from the wheat lands to the south and fruit from the orchard lands to the north appear to present good opportunities for secondary processing of these raw materials into forms such as pies and frozen specialty foods.
- Over-reliance on the orchard district north of the city can result in serious economic hardship in the event of major crop failure from weather or disease. While remaining heavily involved in agriculture, the economy needs to diversify to lower the risk inherent on a limited industrial base.
- Wall Walla and Milton Freewater retail sectors have strengths which can be used to the benefit
 of both. Cooperative promotion and marketing of the Walla Wall Valley should be a joint
 effort of both communities.
- The City will continue efforts to assist owners and operators of these shops to upgrade their facilities through coordinated efforts which area sensitive to the historic and architectural values.

MARKET OVERVIEW

Milton Freewater is located in Umatilla County at the southeastern edge of the Columbia River Basin in northeastern Oregon. The City has a population of 6,500 and is located on State Highway 11. The City is located 8 miles south of the Oregon/Washington border. The City has two established downtowns, reflecting the historical towns of Milton and Freewater. Milton is on the south side of the City and Freewater to the north. Outside downtown, commercial development extends along the Highway 11 corridor.

Population

According the US Census Bureau, Milton Freewater's population consisted of 6,470 people residing in 2,504 dwellings during year 2000, up 17% percent from 1990. In comparison, Umatilla County's population consisted of 70,548 people in year 2000, up 19 percent from 1990. Approximately 9 percent of Umatilla County's population resides in Milton Freewater, as indicated on Table 1.

Table 1. Population Trends, 1990, 2000 & 2002

| Constitution of the Section | 1990 | 2000 | 2004* | % Change 1990-2000 | % Change 2000-2004 |
|-----------------------------|--------|--------|--------|--------------------|-----------------------|
| Milton Freewater | 5,553 | 6,470 | 6,500 | 16.9% | 0.46% |
| Umatilla County | 59,249 | 70,548 | 72,250 | 19.1% | 2.4% |

| Oregon | 2,842,321 | 3,421,399 | 3,582,600 | 20.4% | 4.7% | |
|----------------|--------------------------|--------------------------|-----------|-------|------|--|
| -United States | - 248,709,873 | 281,421,906 · | | 13.1% | | |

Source: US Census for 1990 and 2000.

According to the Oregon Office of Economic Analysis (2004 population forecast), the Umatilla County population is projected to increase to 90,660 by year 2025. This increase of 18,410, or 25 percent, is slightly below the projected state increase of 29 percent.

Households

There were approximately 2,504 dwelling units counted by the US Census in Milton Freewater during year 2000, which indicates an 11% growth since 1990, as indicated in Table 2. The total housing stock in Umatilla County increased by 14 percent during the 10-year period between 1990 and 2000.

In 2000, the average household size in Milton Freewater was 2.77 people per dwelling compared with 2.67 for Umatilla County and 2.51 for the state of Oregon.

Milton Freewater and Umatilla County both have a greater propensity of owner households than renter households. Tenancy in Milton Freewater was estimated at 62% owner and 38% renter households, compared to statewide tenancy of 64% owner and 36% renter households.

Table 2. Household Trends, 1990 & 2000

| 1990 | Total Hsg Units | Vacant Units | Vacancy Rate | | | |
|--------------------------------------|-----------------|--------------|--------------|--|--|--|
| · | 2 254 | 155 | 6.8% | | | |
| Umatilia County | 24,333 | 2,313 | 9.5% | | | |
| Oregon | 1,193,567 | 90,254 | 7.5% | | | |
| United States | 102,263,678 | 10,316,268 | 10.1% | | | |
| 2000 | Total Hsg Units | Vacant Units | Vacancy Rate | | | |
| Milton Freewater | 2,504 | 267 | 10.6% | | | |
| Morrow County | 27,676 | 2,481 | 8.9% | | | |
| Oregon | 1,452,709 | 118,986 | 8.2% | | | |
| United States | 115,904,641 | 10,424,540 | 8.9% | | | |
| Source: US Census for 1990 and 2000. | | | | | | |

Income

Both Milton Freewater and Umatilla County's income levels are well below state and national averages. The median household income level in Milton Freewater was \$28,365 in 1999, which is 44 percent less than the statewide median household income level of \$40,916. See Table 3.

From 1990 to 2000, Milton Freewater's per capita income fell from 63 percent of the national average to 60 percent. Approximately 929 people in Milton Freewater were classified as "living at or below poverty" during 1999 (15% of the population).

^{*} Source: Center for Population Research, Portland State University

Table 3. Income Trends. 1990 & 2000

| 1990 | Median Household Income | Per Capita Income | Percent of National Average |
|------------------|-------------------------|---------------------|-----------------------------|
| Milton Freewater | \$18,759 | \$9,130 | 63 31% |
| matilla County | \$22,79 <u>1</u> | <u>\$11,178</u> | <u>77 52%</u> |
| regon | \$27,250 | \$13,418 | 93 05% |
| Jnited States | \$30,056 | \$14,420 | <u> </u> |
| 2000 | Median Household Income | Per Capita Income • | Percent of National Average |
| lilton Freewater | <u>\$28,685</u> | <u>\$13,101</u> | 60 69% |
| matilla County | \$36,249 | \$16,410 | 76 02% |
| regon | <u>\$40,916</u> | \$20,940 | 97 00% |
| inited States | \$41,994 | \$21,587 | |

Source: US Census

Employment

The civilian labor force includes primary employee candidates, between the ages of 16 and 65. As indicated in Table 4, Milton Freewater has experienced little employment growth since 1990, while Umatilla County's labor force expanded by over 100% (16,650 people) High unemployment continues to plague Oregon, particularly in rural counties. In January 2005, the Oregon Labor Market Information System reported that 10.9% percent of Umatilla County was unemployed, compared to 7.1 percent for state of Oregon and 5.5 percent for the nation.

Table 4. Labor Market Summary-

| Table 4. Labor Market Summa | ry | | | |
|-----------------------------------|--------------|--------------|---------------|----------------------------|
| | 1990 | 2000 | January 2003* | Annual Change 1990-2000 |
| Milton Freewater | | | , | |
| Fopulation 16 and over | 4,156 | <u>4,551</u> | | <u>40</u> |
| In Labor Force | 2,571 | 2,817 | - | <u>25</u> |
| Civilian Labor Force | <u>2,571</u> | 2,810 | | 24 |
| Employed | 2,417 | 2,408 | | -1 |
| Unemployed | 154 | 402 | Į | <u>25</u> |
| Unemployment Rate | 5.99% | 14.31% | | |
| Umatilla County | | | | |
| Population 16 and over | 28,016 | 53,222 | | 2,521 |
| In Labor Force | 27,984 | 33,621 | | 564 |
| Civilian Labor Force | 25,612 | 33,598 | | 799 |
| Employed | 14,414 | 31,068 | | 1,665 |
| Unemployed | 1,326 | 2,530 | | 120 |
| Umatilia County Unemployment Rate | 5.18% | 7.53% | 10.9% | |
| Oregon Unemployment Rate | 6.20% | 6.47% | 7.10% | |
| United States Unemployment Rate | 6.31% | 5.77% | 5.50% | |

Source: US Census

*Source: Oregon Labor Market Information System

Leading employers in Region 12 (Umatilla and Morrow Counties), as of the fourth quarter of 2003, are summarized in Table 5.Major employers in the region specialize in grain and agricultural packaging, shipping and processing. Super-regional warehousing and distribution activities, by Wal-Mart and Union Pacific occur in light of the convenient interstate and rail access located near Hermiston. Major health services, retail and government operations also act as important employers.

| | <u> </u> | |
|---|------------------------------|--------------|
| Location | Product/Service | Employees |
| Milton Freewater (Umatilla County) | | _ |
| Sykes Enterprises, Inc | Customer Support Call Center | 400 |
| Milton-Freewater Unified School District. | Education | |
| Oregon Coalition of Child Development | Child care | 106 |
| E. Brown and Sons Inc. | Apples | 80 |
| City of Milton-Freewater | Government | 70 |
| Hermiston Area (Umatilla County) | | |
| Wal-Mart | Distribution | <u>1,000</u> |
| JR Simplot | Food Products | <u>850</u> |
| Lamb Weston | Potato Products | 500 |
| Marlette Homes | Manufactured Homes | 460 |
| Hermiston Foods | | 450 |
| Pendleton Area (Umatilla County) | | |
| St. Anthony's Hospital | Public Hospital | 280 |
| Keystone RV Company | Travel Trailers | 245 |
| Fleetwood Travel Trailers | Travel Trailers | 142 |
| Pendleton Flour Mills . | Flour | 80 |
| Hill Meat Company | Food Packaging | 80 |
| Umatilla Area (Umatilla County) | | |
| Two Rivers Correctional Institution | Correctional Facility | 500 |
| JM Manufacturing, Inc | Polyvinyl Chloride Pipes | 76 |
| Gilroy Food | Dehydrated Onions | 55 |
| Boise Cascade | Wood Chips | 20 |
| Oregon Rustic | Pine Furniture Manufacturing | 19 |
| Heppner City (Marrow County) | | |
| Morrow County Government | Government | 120 |
| Morrow County Health District | Government | 110 |
| Morrow County School District | Education | <u>67</u> |
| Bank of Eastern Oregon | Financial Services | 20 |
| Hennrier Ranger District | -Federal Government- | N/A |
| Boardman Area (Port of Morrow) | | |
| amb Weston | Potato Products | 450 |
| Watts Brothers Repackaging Facility | Distribution | 95 |
| Logan International | Distribution | <u> 120</u> |
| Oregon Potato Company | Potato Products | 110 |

| Location | Product/Service | Employees |
|---|----------------------------|------------|
| Boardman Foods | Fresh pack onions | <u>100</u> |
| Tillamook Cheese Processing Plant | Dairy Processing | 60 |
| Cascade Specialties | Distribution | <u>70</u> |
| Port of Morrow PGE Coal Fire Plant and | Port Facilities Management | 40 |
| Coyote Springs Co-Gen. Plant . | Electrical Power | 113 |

As indicated in Table 6, the leading job sectors in Umatilla Counties include government (7,890 jobs), retail trade (6,370 jobs) and services (5,920 jobs).

Table 6. Umatilla and Morrow County Job Distribution, 2002

| Employment Sector (Non-farm payroll) | 2002 - | |
|--------------------------------------|--------------|-----|
| Manufacturing | 5,020 | |
| Construction and Mining | <u>1,470</u> | |
| ransportation and Utilities | 2,660 | |
| /holesale Trade | 1,090 | |
| etail Trade | 6,370 | |
| inance, Insurance and Real Estate | <u>930</u> | |
| ervices | 5,920 | • • |
| overnment | 7,890 | ÷ |
| otal | 31,350 | |

Within Region 12, Umatilla County has seen the bulk of the employment growth. According to the Unified Workforce Plan for Morrow Umatilla Region 12 Workforce Investment Board, Umatilla County added 1,490 non-farm jobs in 1998, more than other county outside a metropolitan area. Morrow County finished in fifth place in 1998 by adding 130 non-farm jobs to total 3,060 on an annual basis.

According to the Oregon Employment Department, total Region 12 employment was estimated at 31,350 in 2002, up 295 jobs from 2000. Long-term trends in non-agricultural employment for Region 12 point towards robust employment expansion in the retail trade; finance, insurance and real estate; and services; moderate growth in wholesale and government job sectors; and little growth for manufacturing, construction, mining, and transportation and utilities. Overall employment is expected to expand to 33,720 by 2012, an increase of 2,370 from 2002, as indicated in Table 7.

The Oregon Employment Department anticipates a continued shift in industrial job growth for Region 12 over the next 10 years—from lumber, wood and food products to miscellaneous durable and non-durable goods. The total amount of industrial jobs are projected to remain at 5,020 in Region 12, as job losses in are lumber, wood and food products are countered by job gains in other industrial sectors.

Table 7. Employment in Morrow and Umatilla Counties (Region 12)

| Employment Sector (Non-farm payroll) | 2002 | 2012 Projection | 2002-2012 Change | 2002-2012 % Change | Annual Change 2002-2012 |
|---|--------|--------------------|---------------------|-----------------------|-------------------------------|
| Manufacturing | 5,020 | 5,020 | | 0% | |
| Construction and Mining | 1,470 | 1,230 | (240) | -16.3% | (24) |
| Transportation and Utilities | 2,660 | 2,200 | (460) | -17.3% | (46) |
| Wholesale Trade | 1,090 | 1,270 | 180 | 16.5% | 18 |
| Retail Trade | 6,370 | 7,340 | 970 | 15.2% | 97 |
| Finance, Insurance and Real Estate | 930 | 1,090 | 160 | 17.2% | 16 |
| Services | 5,920 | 7,290 | 1,370 | 23.1% | · 137 |
| Government | 7,890 | 8,310 | 420 | 5.3% | 42 |
| Total | 31,350 | 33,720 | 2,370 | 7.7% | 237 |

Residential Demand

The demand for new housing in Milton Freewater will be a function of local population levels, household size, income and area amenities, such as schools and cost of living.

Future housing demand in the County is expected to remain steady, with a projected 8,836 new dwellings needed over the next 20 years, as indicated in Table 8. This equates to average annual housing absorption of 400 units per year over the planning period.

If we assume there to be a competitive vacant supply of buildable land and/or redevelopment sites in Milton Freewater (and adequate public water and sewer facilities), Milton Freewater could capture between 10% and 15% of the future County housing demand. This equates to between 884 and 1,325 dwelling units over 20 years. It is possible that downtown Milton Freewater could accommodate some of this demand through a combination of upper-level redevelopment, infill development with limited opportunities for new construction.

Table 8. Projected Housing Demand in Umatilla County and Milton Freewater

| | 2004 | 2025 |
|---|---------|--------|
| County Population | 72,250 | 90,660 |
| Estimated Population in Group Quarters* | . 3,324 | 4,170 |
| Population in Households | 68,927 | 86,490 |
| Estimated Average Household Size | 2.60 | 2.50 |
| Estimated Households | 26,510 | 34,596 |
| Change in New Households | | 8,086 |
| Move Up / Replacement Demand (1% of housing stock) | | 346 |
| Vacancy Rate 5% | | 404 |
| Projected Change in Housing Demand for County | | 8,836 |
| Projected Change in Housing Demand for Milton-Freewater (Low Growth Scenario @10% capture) | İ | 884 |
| Projected Change in Housing Demand for Milton-Freewater (High Growth Scenario @15% capture) | | 1,325 |

^{*}Based on 2000 allocation of group quarters = .3% of population

Source: US Census and Office of Economic Analysis; analysis by Otak, Inc.

Commercial Demand

Future retail development potential depends on the ability for local retail establishments to "capture" existing and future household buying power. Table 9 summarizes the projected household buying power for Milton Freewater.

Table 9. Aggregate Income Levels in Milton Freewater, 2000 - 2025

| 2000 Pop* | | 6,470 |
|--|----|---------------|
| Proj. 2025 Pop** | | 11,333 |
| Est. 2000 Per Capita Income* | | \$13,101 |
| Proj. 2025 Per Capita Income*** | | \$16,376 |
| Est. 2000 Aggregate Income | | \$84,763,470 |
| Proj. 2025 Aggregrate Income | ٠. | \$185,592,041 |
| Change in Aggregate Income (2000 – 2025) | , | \$100,828,571 |

^{*}Source: US Census

An analysis of retail spending for Umatilla County demonstrates the retail sales inflow/outflow for the county. As indicated on Table 10, approximately 56% of retail buying power currently flows into the County from places outside the area (particularly from Washington State residents). Umatilla County residents currently spend an estimated \$130.8 million on retail purchases and county retail establishments take in approximately \$300 million on retail sales.

^{**}Derived from State of Oregon Umatilla County Population Projection of 90,660; assumes Milton Freewater capture rate of 12.5%.

^{***} Assumes annual growth of .5%

Table 10. Existing Retail Buying Power, Umatilla County, 2000* (thousands)

| Store Group | 2000 Retail Sales at County Retail Establishments | 2000 Retail Expenditures by County Residents | Estimated Existing Retail Inflow/ (Outflow) |
|---|---|--|--|
| Total Retail Sales | \$993,122 | \$485,073 | \$508,049 |
| Food and Beverage Stores | \$160,356 | \$96,088 | § \$64,268 |
| Food Service and Drinking Establishments | <u>\$78,356</u> | \$57,885 | \$20,471 |
| General Merchandise Furniture and Home Furnishing and | \$186,217 | \$ 63,673 | \$122,544 |
| Electronic Appliances | \$27,572 | \$25,469 | \$2,103 |
| Motor Vehicle and Parts Dealers | \$237,284 | \$111,138 | \$126,146 |
| Other | \$303,337 | \$130,819 | \$172,518 |

Source: Sales and Marketing Management, Survey of Buying Power. Analysis by Otak, Inc.

In a method used to estimate rotal sales attomic the transfer of the U.S. Census of Retail Trade, or Sales and Marketing Management; (2) estimate the current level of supportable retail demand from local households by calculating aggregate gross income in the area and factoring that by average allocation of household income by retail expenditure (using information from the US Census and the US Consumer Expenditure Survey); and (3) subtract local retail expenditures from retail sales at local establishments to determine if there is a retail inflow or outflow.

The potential for new retail development in Milton Freewater will be supported by local households and related buying income, along with the potential to intercept tourism spending "inflow" and "inflow" from Washington State residents making tax free purchases in Oregon. Over the long-term, if Milton Freewater were to capture 10% of future growth in county retail expenditures, Milton Freewater could support approximately 145,000 square feet of new or rehabilitated commercial space, as indicated in Table 11. This amount of projected retail demand translates into approximately 3 to 5 net buildable acres, and up to 7 gross acres.

Table 11. Milton Freewater Retail Buying Power and Supportable Land Needs, 2005 to 2025

| Store Group | Distribution of Local Income Retail Expenditures | 2025 Retail Sales from County Residents | 2000-2025 Retail Sales Growth Potential | Milton Freewater Proj. 10% Capture Rate | Supportable Sq. Ft @ \$225 Annual Sales/Sq.Ft. | Supportable Building Sq. Ft. at .2 FAR* | Supportable Acreage (Net) |
|--|---|--|--|--|---|--|------------------------------|
| Food and Beverage Stores | 8.3% | \$109,023 | \$12,935 | \$1,293,471 | 5,749 | 28,744 | 0.66 |
| Food Service and Drinking Establishments General Merchandise | 5.0% 5.5% | \$65,677 \$72,244 | \$7,792 \$8,571 | \$779,199 \$857,119 | 3,463 3,809 | 17,316 19,047 | |
| Furniture and Home Furnishing and Electronic Appliances | 2.2% | \$28,898 | \$3,428 | \$342,848 | 1,524 | 7, 61 9 | 0.17 |
| Motor Vehicle and Parts Dealers | 9.6% | \$126,099 | \$14,961 | \$1,496,063. | 5,649 | 33,246 | 0.76- |
| Other/Misc. Total | 11.3% 41.9% | \$148,429 \$550,370 | \$17,610 \$65,297 | \$ 1,760,991 \$ 6, \$ 29,691 | 7,827 29,021 | 39, 33 145, 04 | <u>0.9</u> 3.3 |

Analysis by Otak, Inc., *FAR = Floor area ratio; the amount of land area to building floor area.

For downtown Milton Freewater, the most favorable retail growth potential appears to be within the miscellaneous retail, and food and beverages categories. However, some general merchandise will also be supported by increased retail sales. The other/miscellaneous category could possibly include a modest-sized lodging facility and/or an additional independent bed-and-breakfast, which could potentially be added to support regional visitation trends.

Tourism and visitation spending plays an important role in supporting commercial development in Umatilla County and is accredited for supporting 1,720 jobs. As shown in Table 12, total-direct spending has more than doubled between 1991 and 2003 – increasing to over \$103 million per year. The fastest growing segments that were supported by tourism spending over the 1991-2003 time period included "arts, entertainment and recreation" and "accommodations and food service".

Table 12. Umatilla County Travel and Tourism Impacts, 1991-2003**

| Table 12. Umatilla County | 1991 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | % Change '91-'03 |
|--|--------------|---------------|-------|-------|------------------|--------------|-------|---------------------|
| Total Direct Travel Spending (\$Millio | ons) | · | | | | | | h |
| Visitor Spending at Destination | 42.4 | 74.2 | 80.4 | 91.4 | 90.7 | 96.3 | 102.3 | 141% |
| Other Travel* | 0.6 | 1.0 | 1.1 | 1.2 | 1.1 | 1.1 | 0.7 | 17% |
| Total Direct Spending | 43.1 | 75.2 | 81.5 | 92.5 | 91.8 | . 97.3 | 103.0 | 139% |
| Visitor Spending by Type of Travele | r Accommod | lation (\$Mil | lion) | | | | | |
| Hotel, Motel | 16.6 | 28.7 | 31.8 | 37.6 | 36.5 | 41. 1 | 43.9 | 164% |
| Private Campground | 7.2 | 9.4 | 9.8 | 10.6 | 10.8 | 10.6 | 11.4 | . 58% |
| Public Campground | 2.0 | 2.2 | 2.3 | . 2.4 | 2.5 | 2.5 | 2.6 | 30% |
| Private Home | 6.6 | 8.1 | 8.7. | 9.8 | 10.0 | 9.6 | 10.3 | 56% |
| Vacation Home | 1.4 | 3.1 | 3.5 | 4.2 | 4.3 | 4.3 | 4.6 | 229% |
| Day Travel | 8.6 | 22.7 | 24.2 | 26.8 | 26.5 | 28.1 | 29.5 | 243% |
| Spending at Destination | 42.4 | 74.2 | 80:4 | 91.4 | 90.7 | 96.3 | 102.3 | 141% |
| Visitor Spending by Commodity Pur | chased (\$Mi | llion) | | | | • | | |
| Accommodations | 7.0 | 11.2 | 12.1 | 13,4 | 13.1. | 14.9 | 15.0 | 114% |
| Food & Beverage Services | 8.6 | 15.3 | 16.2 | 17.7 | 17.7 | 19.7 | 20.6 | 140% |
| Food Stores | 4.1 | 6.2 | 6.6 | 7.1 | 7.2 | 7.7 | - 8.1 | 98% |
| Ground Tran. & Motor Fuel | 12.6 | 14.0 | 16.3 | 21.1 | 20.8 | 19.0 | 23.1 | 83% |
| Arts, Entertainment & Recreation | 2.9 | 17.7 | 18.8 | 20.8 | 20.6 | 22.9 | 23.7 | 717% |
| Retail Sales | 7.0 | 9.4 | 10.0 | 10.8 | 10.8 | 11.7 | 11.7 | 67% |
| Air Transportation (visitor only) | 0.2 | 0.4 | 0.4 | 0.5 | 0.5 | 0.4 | 0.2 | 0% |
| Spending at Destination | 42.4 | 74.2 | 80.4 | .91.4 | 90.7 | 96.3 | 102.3 | 141% |
| Industry Earnings Generated by Tra | vel Spending | (\$Million) | | • | | | | |
| Accommodations & Food Service | 6.6 | 11.4 | 12.2 | 13.3 | . 13.2 | 14.9 | 15.4 | 133% |
| Arts, Entertainment & Recreation | 0.8 | 4.7 | 5.0 | 5.5 | 5.4 | 6.0 | 6.2 | 675% |
| Retail** | 2.0 | 2.8 | 3.0 | 3.2 | 3.2 | 3.2 | 3.5 | 75% |
| Auto Rental & other ground tran | а | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | |
| Air Transportation (visitor only) | . 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0% |
| Other Travel* | 0.3 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 | 0.4 | 33% |
| Total Direct Earnings | 9.8 | 19.4 | 20.8 | 22.7 | 22.6 | 24.8 | 25.6 | . 161% |
| Industry Employment Generated by | Travel Spen | ding (Jobs) | | | | | | |
| Accommodations & Food Service | 580 | 760 | 800 | 850 | 840 | 930 | 930 | . 60% |
| Arts, Entertainment & Recreation | 110 | ` 550 · | 540 | 570 | 590 | 620 | 580 | 427% |
| Retail** | 160 | 170 | 180 | 190 | 180 ⁻ | 180 | 190 | 19% |
| Auto Rental & other ground tran | b | b | b | b. | 10 | 10 | . 10 | |
| Air Transportation (visitor only) | 0 | 0 | . 0 | 0 | 0 | 0 | 0 | - |
| Other Travel* | 20 | 20 | 20 | 20 . | 20 | 20 | 10 | <i>-</i> 50% |
| Total Direct Employment | 970 | 1,520 | 1,550 | 1,604 | 1,630 | 1,750 | 1,720 | 77% |
| Tax Receipts Generated by Travel S | pending (\$M | illions) | | | | | | |
| Local Tax Receipts | 0.3 | 0.6 | 0.6 | 0.7 | 0.7 | 0.7 | 0.7 | 133% |
| State Tax Receipts | 2.0 | 2.9 | 3.0 | 3.3 | 3.3 | 3.3 | 3.4 | 70% |
| Total Direct Tax Receipts | 2.4 | 3.5 | 3.6 | 4.0 | 4.0 | 4.0 | 4.2 | 75% |

^{**}Source: Dean Runyan Associates

Details may not add to totals due to rounding.

^{*}Other Travel includes resident air travel and travel agency services. **Retail includes gasoline. Less than \$50,000 in spending, earnings or tax receipts = 'a'. Less than 5 employees = 'b'.

Office Demand

The future outlook for office job growth and land needs are forecasted to show an improvement over the next 10 years. According to the Oregon Employment Department, total Region 12 (Umatilla and Morrow Counties) employment is expected to expand to 33,720 by 2012, an increase of 2,370 jobs from 2002. If this trend continues for the subsequent 10-year period, total job growth in Region 12 will increase to 36,250.

The demand for office space in downtown Milton Freewater depends on growth in employment in the competitive market region and changes in household formations and work location preferences. As households get older, demand for professional services, such as medical, legal and financial services tends to rise. Other factors, such as availability and price of land/buildings, telecommunications and internet access also play into location decisions.

For this analysis, we have assumed office growth to be on par with household growth potential. As shown in Table 14, Umatilla County's share of Region 12 growth is expected to be approximately 80-90% of Region 12 growth, and Milton Freewater would likely capture approximately 12 percent of Umatilla County's growth. This amount of office demand would require approximately 60,000 square feet of building area, which would require approximately 6 net buildable acres of land area—assuming off-street parking is provided.

Table 13. Umatilla County Job Distribution, January 2005

| Employment Sectors (Nonfarm payroll) | Umatilla County 72005 | Morrow County 2005 | Total Region 12 2005 | Estimated Umatilia County Share of Regional Growth |
|--------------------------------------|-----------------------------|--------------------------|----------------------------|--|
| Manufacturing | 3,340 | 800 | 4,140 | 81% |
| Construction and Mining | 870 | 80 | 950 | 92% |
| Transportation and Utilities | 3,070 | 330 | 3,400 | 90% |
| Wholesale Trade | 580 | 190 | 770 | 75% |
| Retail Trade | 3,050 | 220 | 3,270 | 93% |
| Finance, insurance and Real Estate | 900 | 120 | 1,020 | 88% |
| Services | 7,410 | 300 | 7,710 | 96% |
| Government | 7,310 | 800 | 8,110 | 90% |
| Total | 26 530 | 2,840 | 29,370 | 90% |

Source: Oregon Employment Department

Table 14. Office Development Potential, Milton Freewater, 2002 to 2022

| Employment Sectors (Non-farm payroll) | Proj. Jobs Region 12 2002- 2022* | Umatilla Go. Capture Rate | Umatilla County Jobs | Milton Free Water Capture Rate | Milton Free Water Total Jobs | Office Job Factor | Office Jobs** | Supporta ble Gross Building Floor Area Req. (SF)*** | Supporta ble Acreage (Net) |
|--|---|------------------------------------|----------------------------|--|--|----------------------|------------------|--|-------------------------------------|
| Finance, Insurance and | | | | | | | - | | |
| Real Estate | 348 | 80% | 64 | 12% | - 33 | - 0.9 | 30 | 7,507 | 0.69 |
| Services | 3,057 | 80% | • 548 | 12% | 293 | 0.6 | 176 | 44,021 | 4.04 |
| Government | 862 | 80% | 168 | 12% | 83 | 0.6 | 50 | 12,418 | 1.14 |
| Total | 4,267 | | 780 | | 409 | | 256 | 63,946 | 5.87 |

In the short-term (years 1-5), this commercial demand in downtown Milton Freewater could likely be accommodated in existing vacant or underutilized downtown buildings. In the longer-term, it is likely that some of the commercial office growth would require new buildings on vacant or redevelopment parcels.

SUMMARY OF MARKET FINDINGS

This analysis of market demand provides findings regarding local and regional growth trends and the existing vacant land in the Milton Freewater. Key findings contained in this memorandum are summarized in the following paragraphs.

- Moderate population and employment growth is forecast for Milton Freewater during the next 20 years.
- With adequate public facilities such as health care and schools, Milton Freewater's population is projected to expand from 6,500 people today to nearly 10,000 people by year 2020. This modest growth is expected to require at least 1,155 dwelling units.
- Downtown Milton Freewater could compete within the region as a viable residential, retail and office location. In the short-term, existing vacant and underutilized buildings can address office and most retail demand.
- Steady growth in county wide tourism spending combined with moderate growth in local buying power hold promising potential for existing and new commercial, retail and lodging establishments.
- Redevelopment incentives should be considered to optimize long-term downtown development potential. Local land use and fiscal policies may be considered to leverage additional private investment within downtown. Strategies may include limited tax abatement, formation of an urban renewal district, reduced parking requirements, and establishment of a foreign enterprise zone.
- Main Street design treatments such as new sidewalks, landscaping, public art, and pedestrian amenities along with shared public parking lots can also help to re-energize downtown development potential.

EXISTING CODE ANALYSIS

Introduction

The Milton-Freewater Zoning Code was established to "enhance the quality of life and protect the health, safety, and enhance the general welfare of the citizens of the City of Milton-Freewater." Milton-Freewater has established seven zoning districts. The study area for the Special Transportation Plan (STP) and Transportation System Plan Update (Plan) encompasses Oregon State Highway 11, also known as Main Street, from 2nd Avenue to 14th Avenue including one block east and one block west of Highway 11. There are seven zoning districts within the study. These include: Residential Low Density (R-1), Residential Medium Density (R-2), Residential High Density (R-3), Residential Office (R-O), Retail and Service Commercial (C-1), General Commercial (C-2), and Public Lands (PL). Figure 1.1 shows a map of the study area with the zoning districts. This memorandum is an analysis of the existing zoning code requirements for each district in the study area.

Residential Low Density (R-1)

As seen on Figure 1.1, the R-1 zoning district is located on one block on Main Street, just north of City Hall. The intent of R-1 is to provide for larger, more secluded, home site with a maximum of four units per acre.

Zoning Requirements

| Use | Permitted | Minimum Lot Size | Minimum Yard Requirements | Height | Lot Coverage |
|---|-----------------------------------|---------------------|--|------------|---------------------|
| Single-family | Single-family Permitted 10,000 SF | | Front: 22 ft, Side: 12 ft, Rear: 22 ft | Max: 28 Ft | 50% - structural |
| City governmental structure | Permitted | | Front: 22 ft, Side: 22 feet, Rear: 22 | Same | Same |
| Home Occupation | Permitted | | Same | Same | Same |
| Manufactured House on individual lots | Permitted | | Same | Same | Same |
| Church | Conditional | 10,000 SF | Same | Same | Same |
| Planned unit development | Conditional | | Same | Same | Same |
| School | Conditional | | Same | | |
| Golf Course, community center | Conditional | 10,000 SF | Same | Same | Same |

Residential Medium Density (R-2)

As seen on Figure 1.1, the R-2 zoning district is located on residential streets, a block off Main Street. The intent of R-2 is to provide a greater range of housing types and densities than R-1, while maintaining the character of a single-family neighborhood. Up to 16 units per acre are permitted in R-2.

Zoning Requirements

| Use | Permitted | Minimum Lot Size | Minimum Yard Requirements | Height | Lot Coverage |
|--|-------------------|---------------------|---|------------|---------------------|
| Single-family | Permitte d | 7,500 SF | Front: 22 ft, Side: 6 ft one side – min of 16 ft combined, Rear: 18 ft | Max: 35 Ft | 50% - structural |
| Duplex | Permitted | 10,000 SF | Front: 22 ft, Side: 22 feet, Rear: 22 | Same | Same |
| City governmental structure | Permitted | | Same | Same | Same |
| Home Occupation | Permitted | | Same | Same | Same |
| Manufactured House on individual lots | Permitted | | Same | Same | Same |
| Church | Conditional | 10,000 SF | Same | Same | Same |
| Boarding room | Conditional | 9,000 SF | Same | Same | Same |
| Planned unit development | Conditional | | Same | Same | Same |
| School/child care | Conditional | 9,000 SF | Same | Same | Same |
| Golf Course, community center | Conditional | 10,000 SF | Same | Same | Same |
| Density bonus – 8 additional units per acre | Conditional | 2,700 SF/unit | Same | Same | Same |

Residential High Density (R-3)

As seen on Figure 1.1, the R-3 zoning district is located mostly on southern Main Street. The intent of R-3 is to provide the widest range of housing alternatives including multi-family units. A maximum density of 26 units per acre is permitted.

Zoning Requirements

| Use | Permitted | Minimum Lot Size | Minimum Yard Requirements | Height | Lot Coverage |
|---------------------|------------------|--|--|------------|--|
| Single-family | Permitted | 5,000 SF | Front: 22 ft, Side: 6 ft one side – min of 14 ft combined, Rear: 16 ft | Max: 35 Ft | 45% - structural; 80% - impervious |
| Duplex | Permitted | 7,500 SF | Same as above | Same | Same |
| Boarding room | Conditional | 7,000 SF | Front: 22 ft, Side: 12 feet, Rear: 22 | Same | Same |
| Child care facility | Conditional | 9,000 SF | Same as above | Same | Same |
| Church | Site plan review | 10,000 SF | Same as above | Same | Same |
| Community center | Site plan review | 10,000 SF | Same as above | Same | Same . |
| Manufactured park | Conditional | 3,500 SF per home site | • | Same | Same |
| Nursing Home | Conditional | 2,500 SF per bed or unity | Front: 22 ft, Side: 12 feet, Rear: 22 | Same | Same |
| Multi-family | Site plan review | 6,000 SF for 1 st unit, 1,500 SF per additional | Same as above | Same | Same |

Residential Office (R-O)

As seen on Figure 1.1, the R-O zoning district is located on Main Street, mostly between 7th and 9th Avenues. This zoning district is intended to encourage a compatible mix of residential development and small private or public offices.

Zoning Requirements

| Use | Use Permitted | | Use Permitted Minimum Lot Size | | Minimum Yard Requirements | Height | Lot Coverage |
|-----------------------------------|------------------|--|---|------------|---|--------|-----------------|
| Single-family | Permitted | 6,000 SF | Front: 22 ft, Side: 6 ft one side – min of 14 ft combined, Rear: 16 ft | Max: 35 Ft | 60% - structural; 80% - impervious | | |
| Duplex | Permitted | 7,500 SF | Same as above | Same | Same | | |
| Modular home | Permitted | | | Same | Same | | |
| City government structure | Permitted | | | Same | Same | | |
| Offices | Site plan review | 6,000 SF | Determined by site plan review | Same | Same | | |
| Boarding room | Site plan review | 9,000 SF | Front: 22 ft, Side: 12 feet, Rear: 22 | Same | Same | | |
| Child care facility | Conditional | 9,000 SF | Same as above | Same | Same | | |
| Church | Site plan review | 10,000 SF | Same as above | Same | Same | | |
| Community center | Site plan review | 10,000 SF | Same as above | Same | Same | | |
| Manufactured housing | Permitted | 3,500 SF per home site | 71. | Same | Same | | |
| Nursing Home | Conditional | 2,500 SF per bed or unity | Front: 22 ft, Side: 12 feet, Rear: 22 | Same | Same | | |
| Multi-family | Site plan review | 6,000 SF for 1 st unit, 1,500 SF per additional | Same as above | Same | Same | | |
| Single-family converted to office | Conditional | | | Same | Same | | |

Other Requirements

The intent of R-O is to all a mix of office and residential uses while still maintaining the residential character of the neighborhood. This balance must be achieved with all proposals. R-O zone is only allowed when abutted by a commercial zone, 75% of the lots are developed, and at least 50% of the uses are nonconforming in a Residential zone.

Retail and Service Commercial (C-1)

As seen on Figure 1.1, the C-1 zoning district is located on Main Street, in northern Milton-Freewater and between 9th and 13th Avenues. This zoning district is intended to provide for general retail and light service commercial uses such as hair salons, restaurants, and supermarkets.

Zoning Requirements

| Use | Permitted | Minimum Lot Size | Minimum Yard Requirements | Height | Lot Coverage |
|---|-----------|---------------------|------------------------------|---|---|
| Upkeep, repair, and replacement of existing uses in C-2 | Permitted | Varies | Based on site plan review | Max 35 feet within 150 feet of residential zone, max. 45 feet if greater than 150 feet | 50% - structural; 75% - impervious |

| in the second se | | | | | · |
|--|------------------|------------------------|--------------------------|-----------------------|-------------|
| | |] | | from residential zone | _ |
| Upkeep, repair, and | Permitted | [6,000 SF [_] | Front: 22 ft, Side: | Same | 50% |
| replacement of | • | | 6 ft one side - | | structural; |
| existing of residential | · | | min of 14 ft | | 75% |
| structures | | | combined, Rear: 16 ft | | impervious |
| Public utilities | Permitted | Varies | Based on site | Same | 50% - |
| | • | | plan review | | structural; |
| | , | | • | • | 75% - |
| | | - f | | | impervious |
| Retail trade | Site plan review | - Varies | Same | Same | Site plan |
| | _ | l - | _ | | review |
| Office/school | Site plan review | Varies | Same | Same | Same |
| Financial institute | Site plan review | Varies | Same | Same | Same |
| Personal business | Site plan review | Varies | Same | Same | Same |
| Commercial = = = amusement | Site plan review | Varies | Same | Same | Same |
| Church | Site plan review | Varies | Same | Same | Same |
| Dwelling units | | Varies | Same | Same | Same |
| Fuel service station | Conditional | Varies | Same | Same | Same |
| Auto repair | Conditional | Varies | Same | Same | Same |
| Restaurant w/outdoor | Conditional | Varies | Same | Same | Same |
| seating | L · | | | | |
| Enclosed storage | Conditional | Varies | Same | Same | Same |
| Commercial use not listed above | Conditional | Varies | Same | Same | Same |

General Commercial (C-2)
As seen on Figure 1.1, the C-2 zoning district is located on Main Street, between 9th and 11th Avenues. This zoning district provides for commercial services such as auto repair and building supply outlets. The uses in this zone involve heavier traffic than C-1 uses.

| Zoning Requirement | ts . | | | | |
|---|---------------------|---------------------|--|--|-----------------|
| Use | Permitted | Minimum Lot Size | Minimum Yard Requirements | Height | Lot Coverage |
| Upkeep, repair, and replacement of existing uses in C-1 | Permitted | Varies | Based on site plan review | Max 35 feet within 150 feet of residential zone, max. 45 feet if greater than 150 feet from residential zone | 50% - |
| Upkeep, repair, and replacement of existing of residential structures | Permitted | 6,000 SF | Front: 22 ft, Side: 6 It one side – min of 14 ft combined, Rear: 16 ft | Same | Same |
| Public utilities | Permitted | Varies | Based on site plan review | Same | Same |
| Retail trade | Site plan review | Varies | Same | Same | Same |
| Office/school | Site plan review | Varies | Same | Same | Same |
| Financial institute | Site plan review | Varies | Same | Same | Same |
| Personal business | Site plan review | Varies | Same | Same | Same |
| Commercial amusement | Site plan review | Varies | Same | Same | Same |
| Church | Site plan review | Varies | Same | Same | Same |

| Dwelling units | Site plan review | Varies | Same | Same | Same |
|---------------------------------|---------------------|--------|------|------|------|
| Auto repair | Site plan review | Varies | Same | Same | Same |
| Lumber yard | Site plan review | Varies | Same | Same | Same |
| Service commercial | Site plan review | Varies | Same | Same | Same |
| Fuel service station | Conditional | Varies | Same | Same | Same |
| Restaurant w/outdoor seating | Conditional | Varies | Same | Same | Same |
| Enclosed storage | Conditional | Varies | Same | Same | Same |
| Commercial use not listed above | Conditional | Varies | Same | Same | Same |

Public Lands (PL)

As seen on Figure 1.1, the PL zoning district includes City Hall and the Library on Main Street. The public lands zone provides for a full range of structures, services, and land uses provided by public agencies on publicly-owned land. A Site Plan Review process is used to determine some code requirements.

Zoning Requirements

| Use | Permitted | Minimum Lot Size | Minimum Yard Requirements | Height | Lot Coverage |
|----------------------|------------------|---------------------|------------------------------|------------------|------------------|
| Public utilities | Permitted | Site plan review | Based another zone | Site plan review | Site plan review |
| Government structure | Site plan review | Same | Same | Same | Same |
| Public schools | Site plan review | Same | Same | Same | Same |
| Golf course | Site plan review | Same | Same | Same | Same |

Parking Requirements

Parking is required for each use in a zoning district. The following are the off-street parking requirements by use.

| | ···· | | |
|------------------------------|---|--|--|
| Use | Parking Spaces | | |
| Residential – Single family | 1 per unit | | |
| Residential – Multi-family | 3 per each 2 units. | | |
| Residential – Boarding house | 80% guest capacity + management | | |
| Hotel | 1 per room | | |
| Commercial – Retail store | 1 per 400 SF | | |
| Commercial – Repair shop | 1 per 600 SF | | |
| Commercial – Bank/office | 1 per 500 SF | | |
| Commercial – Medical clinic | 1 per 300SF + 1 per 2 employees | | |
| Commercial – Restaurant | 1 per 200 SF | | |
| Commercial – Wholesale | 1 per 500 SF + 1 per employee | | |
| Institutional – Nursing home | 1 per 2 beds or 1 per residential unit | | |
| Institutional – Child care | 2 per teacher | | |
| Institutional – Elem. school | 2 per classroom | | |
| Church | 1 per 5 seats or 1 per 10 feet of bench | | |

Other Requirements

Additional parking may be required through Site Plan Review. When mixed uses occupy a structure, the total requirements for off-street parking shall be the sum of the various uses.

Bicycle Parking

A minimum of two bicycle parking spaces per use is required. One of those spaces shall be sheltered. For multi-family residences of four dwelling or more, at least one parking space per unit is required. All public and commercial parking lots shall provide a minimum of one bicycle parking space per 10 vehicle spaces. In the downtown study area, one bicycling parking space shall be required per use. Parking can be clustered for six bicycles. One cluster per block is required. Inverted "U" style bicycle parking rack is recommended. Bicycle parking must not interfere with the pedestrian walkway. A minimum of 5 feet of pedestrian space is required.

Site Plan Review Process

The site plan review process is used to determine compliance with the intent and specific development standards set in the zoning code. Specific requirements are needed for the site plan review process. Specific requirements related to transportation include:

- Pedestrian circulation shall be provided in new commercial, office, and multi-family residential developments.
- New commercial buildings shall be oriented towards the street, near or at the setback line.
- Off-street parking shall be located on the side or behind buildings.
- All site plans shall clearly show how the site's internal pedestrian and bicycle facilities connect with existing external or planned facilities.

Site and Design Standards

The site and design standards apply to all new development on Main Street between the south city limits and SE 3rd. These standards also apply to existing developments if exterior remodeling or expansion occurs. The intent of this section is to:

- Improve the quality of appearance of commercial and industrial development in Milton-Freewater.
- Ensure development is compatible with adjacent development
- Promote streetscapes that are with the desired character of the zoning districts
- Encourage crime prevention
- Increase opportunities for alternative transportation modes.
- Promote safe, attractive, and functional pedestrian circulation systems in commercial areas.

| Standard | Requirement |
|--------------------|--|
| Exterior walls | 25% of wall area facing a street must have treatment with 15% being glass. |
| Exterior walls | Building frontages greater than 100 feet in length shall have off-sets or distinct changes in the building façade. |
| Landscaping | 15% of site shall be landscaped. 80% should be live plant material, 20% may be natural features. |
| Off-street parking | Perimeter landscaping of 4-feet required in all parking areas. |
| Exterior lighting | Lighting shall have minimal adverse effects on adjacent residential properties. |

Supplementary Provisions

Chapter 5 of the Zoning Code includes supplementary provisions for Access Management and Connectivity. These provisions apply to Main Street. They include:

- Shared parking is permitted and a reduction of required spaces if peak demands do not occur at the same time.
- One-way driveways should have a minimum of 10 feet in width.
- Two-ways driveways shall have a minimum of 10 feet and maximum of 12 feet in width.

MAIN STREET EVALUATION WORKSHEET SUMMARY

| | GOOD | FAIR | POOR |
|--|------|--------|------|
| COMFORT AND IMAGES | | | |
| Clean, well maintained | 1 | 11 | 3 |
| Feels safe | | 11 | 2 |
| Human scale | 1 | 9 | 2 |
| Attractiveness | : | . 5 | 8 |
| Places to sit | - | | 15 |
| VISUAL AND PHYSICAL ACCESS | | 100000 | |
| Identifies downtown | 1 | - 8 | 5 |
| • "Walkable" | . 3 | 9 | 2 |
| Connection to adjacent buildings and neighborhood | 1 | 7 | 5 |
| USES AND ACTIVITIES | | | |
| Variety of things to do | 1 | 6 | 7 |
| Attractive to different ages | | 6 | 8 |
| • Fun | | 4 | 11 |
| Special/unique | 1 | 3 | 11 |
| Has local character and uses | 1 | . 6 | 7 |
| SOCIABLE | | | |
| Social interaction (talking, holding hands, kissing) | 1 | 3 | 10 |
| People in groups | 1 | 5 | 9 |
| Sense of place | | 5 | 9 |

COMMENTS FROM WALKING TOUR

A. What do you like best?

- 1. The well maintained old buildings
- 2. City Hall/Library district is very nice
- 3. Historic buildings although some are run down
- 4. La Mona's dress shop. The old library could be a nice gathering place if decorated attractively from the outside.
- 5. The potential to have a nice area that will make people want to stop and shop.
- 6. At north end of the District City Hall/Library old library
- 7. There is a lot of potential defiantly room for improvement. Historical buildings street is wide so there is room for reconfiguring the way it all works.
- 8. Commercial not retail, more retail to South Columbia, leave hwy 11 a highway
- The old library building
- 10. Accessibility and friendly shop personnel.
- 11. The older buildings.

- 12. Areas where there are grass and trees.
- 13. Parking strips in some areas and wide sidewalks
- 14. Many different shops in small area
- 15. Not on foggy days, but other times we see open views, emphasize views. Like ringing church bells.

B. List three improvements that could be done right away and that wouldn't cost a lot of money?

- 1. Trees, project sidewalks into street and stop light, and clean up or remove old buildings
- 2. Develop a South main business organization, work toward capitalizing on Walla Walla's tourist direction give the wine tour folks a reason to come here, and more greenway in bare districts.
- 3. Establish seasonal hanging flowers, establish tree network, and abate abandoned/run down structures.
- 4. Put planters on hanging baskets on streets on both sides of city hall, paint outsides of business buildings with a theme so they are noticed, and suggest that even parking lot fence be decorated on other types of fence to be more attractive
- 5. Paint buildings, make store windows more appealing, and add more buildings to Historic designations.
- 6. Explore possibilities for visual improvement of security fencing at Sallee Chevrolet, ask land owner/tenant to remove stored vehicles and trailer from old service station immediately south of Sallee Chevrolet, and pedestrian signals at 12th and 8th.
- 7. Tree planting in commercial areas, outside seating, and bulb outs and perhaps traffic lights at corners
- 8. Stop lights 9th Street, improve buildings, and landscape.
- 9. Adding vegetation to the southern most part of south main, benches, and tap into the developing wine culture.
- 10. Pedestrian cross walks and plantings along Sallee's fence
- 11. Awnings, trees and flowers, and fix sidewalks
- 12. Street lights flashing crosswalks, rounded out corners to make pedestrians more visible to traffic, landscaping to beautify downtown
- 13. Re-striping to three lanes, create "walls" as discussed on tour, and pocket park or plaza adding seating areas throughout
- 14. Repaint crosswalks to send better message, ID crosswalks and require traffic to stop, add benches, and consider one traffic light near center.
- 15. Trucks carrying dirt, etc. should be covered, lots of benches, and people need things to watch, create a traffic circle

C. What changes would you make in the long term that would have the biggest impact?

- 1. Buildings with retail on street level with apartments above, sidewalk dining.
- 2. Move away from parallel parking to allow more cars in busy areas (between 10th and 12th for example). Incentives to improve building fronts and give more of a "district" flavor. Streetlamps/hanging flower baskets/main street theme signs.
- 3. Traffic control services and new antique street lighting system.

- 4. Could the truck route be re-routed to one of the other streets so there isn't so much noisy traffic. The block south of trip zip could be a mini mall with small attractive shops that would attract tourists.
- 5. New sidewalks with bulb outs, trees and benches, old fashioned street lights, re-do store fronts like Dayton, WA so they portray a sense of consistency, and add brick raises to street crossings.
- 6. Pedestrian crossing signals (retain four lanes but shorter crossing length by width of parallel parking zone on each side of street and ????? street trees.
- 7. Incentives for business owners to improve the store fronts and restore historic buildings. New street lighting whatever we need to do to slow traffic down and make main street more pedestrian friendly and safe.
- 8. Stop lights and street beautification
- 9. Developing a real town theme, frogs may not cut it, this should be expanded on to involve something that people are actually interested in. Perhaps a beer and frog leg restaurant or a frog museum, etc. The problem is M-F doesn't have much in the way of frogs. If people actually stopped here because there is a neon frog on the water tank I think they would expect something more.
- 10. The Carnegie building needs to be used. Chamber of Commerce? Small coffee shop, gift shop with unique local products a gathering place for locals plus a welcome for travelers.
- 11. Truck only by pass and stop sign at south of town.
- 12. Common theme and design for downtown area that sets it apart.
- 13. Redevelopment of historic as well as newer buildings, bulb out for pedestrians, and lit pedestrians crosswalk (lights inserted in pavement)
- 14. Move to unify store fronts if only in paint or color combo and curb extensions.
- 15. By pass for trucks, create boulevard: wide trees (right kind of trees) awnings, keep line of sight openness, consumer shops for strolling. Checker board (fixed) talks, cycling path, small theater, ARTV center.