Transportation Report

Dundee Oregon 99W
Interim Measures Report

Dundee, Oregon

September 2006
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Dundee, Oregon

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Introduction and Purpose

Over the past decade, traffic on Oregon 99W in downtown Newberg and Dundee has increased by about 40 percent. Travelers using Oregon 99W have become accustomed to long delays during peak periods. Transportation congestion along the Oregon 99W corridor is especially acute in the Dundee portion of the corridor, resulting in unacceptable travel delays for passenger and freight traffic. The Newberg-Dundee Bypass (hereinafter, Bypass) addresses long-range measures to relieve congestion on Oregon 99W in Newberg and Dundee. The objective of this Interim Measures Plan is to address short-range measures that provide relief to local and regional traffic flows on Oregon 99W in Dundee prior to construction of the Bypass.

Background

Planning for the route of the Bypass was completed by ODOT in August, 2005.\(^1\) As part of that planning, ODOT evaluated many alternatives including the “Regional Bypass,” and multiple lanes on Oregon 99W through Dundee. The Regional Bypass was rejected for many reasons, including the (very expensive) need to add travel lanes to I-5 and modify numerous interchanges and other structures to serve the 25,000 to 30,000 vehicles per day that would be shifted to the I-5 corridor by 2025, lesser ability to reduce congestion on Oregon 99W (especially in Dundee), and environmental and land use issues.\(^2\) Other alternatives evaluated by ODOT as long-range solutions, included the Edwards-Dayton connection between Dundee and Newberg, and four and five-lane alternatives on Oregon 99W in Dundee. These solutions were determined by ODOT to have unreasonable impacts and/or did not meet ODOT performance standards and under current project planning projections, could not be built prior to the Bypass.

During public meetings conducted as part of the Dundee Transportation System Plan (TSP), the Tier I (Location) Environmental Impact Study for the Newberg-Dundee Bypass, and the Dundee Oregon 99W Refinement Plan, ODOT and the City of Dundee explored numerous short-range concepts for reducing congestion along Oregon 99W in Dundee in the period prior to Bypass construction. Despite these efforts, to date, a solution to the congestion problem that is acceptable to ODOT, Dundee and the surrounding community has not been found. Solutions\(^3\) addressing the fundamental causes of congestion in Dundee that have been considered to date to address short-term congestion were rejected because they were either too expensive, were not effective enough, or would have had unacceptable impacts on Dundee and the surrounding rural community. There were additional potential solutions that were suggested at the August 3, 2006 Public Open House. These solutions previously and more recently considered and the reasons for their rejection are documented and evaluated in this report and summarized in Table 1 below.

Under the Dundee Oregon 99W Interim Measures Plan, ODOT has worked collaboratively with the Dundee Transportation Advisory Committee (DTAC) and Yamhill County to re-examine

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3. In this report, a distinction is made between the terms “solutions” and “measures”, i.e., solutions refers to a means of solving the fundamental roadway design constraints that cause traffic congestion on Oregon 99W in Dundee and measures refers to steps that can be taken to ease local traffic circulation, but do not address the fundamental causes of traffic congestion.
ideas previously considered or identify less controversial measures to relieve congestion along Oregon 99W in the City of Dundee that would at least make local travel somewhat less frustrating for local residents until the Bypass is constructed. This report evaluates and synthesizes new public input received at the meetings described below, into workable interim measures that could receive support from Dundee and Yamhill County elected officials.

As stated above, measures that appear to be feasible will require support from Dundee and Yamhill County elected officials. Once measures receive local support, in order to be implemented, they need to be incorporated into local comprehensive plans through a formal adoption process. When incorporated into comprehensive plans, specific projects can be considered for funding through ODOT and local funding processes.

**Public Involvement Process**

As a part of the development of this draft plan, there were three key meetings in which input was received. On November 20, 2005, the Dundee Transportation Advisory Committee (DTAC) met to provide project planning input. This committee is comprised of representatives of the Dundee City Council, Planning Commission, staff, residents, and business community. A second meeting occurred with the general public of the greater community on January 12, 2006. There were an estimated 75 attendees at this meeting. Significant input was provided to this draft plan at these meetings. A second public meeting was held on August 3, 2006, in which draft findings and recommendations were considered. A summary of comments from that open house is included in Appendix C, and two of the potential solutions that were suggested are addressed in this report. At their discretion, additional public meetings may be held by the Dundee Planning Commission and City Council and/or the Yamhill County Planning Commission and Board of Commissioners. Notice of such meetings will be posted on the Newberg-Dundee Bypass website (www.newbergdundeebypass.org) in the “Get Involved” section and in local media.

**Executive Summary**

ODOT’s Main conclusion: After carefully considering all alternatives, there are no “solutions” to the congestion problem on Oregon 99W in Dundee that are feasible as an alternative to, or as an interim project prior to, construction of the Newberg-Dundee Bypass. There are some feasible local street connections that will facilitate local trips without using Oregon 99W.

Following is a table that summarizes ODOT’s current conclusions and recommendations on interim measures for addressing congestion on Oregon 99W in Dundee. A similar table containing recommendations from the September 2005 analysis is available in Appendix A.
### Table 1
Summary of Conclusions and Recommendations

<table>
<thead>
<tr>
<th>Potential Interim Solution</th>
<th>ODOT Recommendation</th>
<th>Discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Five-lane Cross-Section</td>
<td>Not Recommended</td>
<td>• Five lanes (either parking or travel lanes) would require substantial acquisition of right-of-way with severe impacts on local businesses;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Five lanes on Oregon 99W is inconsistent with the Goals and Vision Statement that has been adopted by the City of Dundee;</td>
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<tr>
<td></td>
<td></td>
<td>• Five lanes would temporarily alleviate congestion in Dundee, but because it would eliminate the need for the interchange between Newberg and Dundee, it would not substantively reduce long-term projected average daily traffic on OR 99W.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Because of the higher traffic volumes and wider roadway, long-term livability in Dundee would be negatively affected as would the City’s ability to meet its adopted community vision.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Construction of Five lanes would be very costly (est. $50 Million to widen through Dundee to McDougal Corner) as an interim project and would not likely be completed prior to construction of the Bypass.</td>
</tr>
<tr>
<td>Four-lane Cross-Section with Jughandles and Loop Connections</td>
<td>Not Recommended</td>
<td>• There is insufficient right of way to build 4 lanes. Thus, accomplishing the four-lane section on Oregon 99W would constitute a substantial and costly construction project.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• A median would be necessary if any additional capacity is to be gained from the additional lanes. Since the required center median would prohibit all left turns on Oregon 99W through Dundee, this solution would have a substantial negative impact to businesses.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The required widening and jughandles would require a significant amount of ROW, which would also have a negative impact on businesses. Accordingly, the DTAC dismissed this alternative during the Dundee TSP process due to the negative impacts to businesses on Oregon 99W.</td>
</tr>
<tr>
<td>Sunken Grade on Oregon 99W</td>
<td>Not Recommended</td>
<td>• Elimination of the signal at 5th St. will provide only an estimated 10-15% additional capacity, and Oregon 99W is approximately 30-40% over capacity. Hence, this measure would not fully mitigate congestion.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Construction of a grade-separated crossing of Oregon 99W at 5th Street - whether it is over or under - is a major construction project that would take a minimum of five years to plan, design and construct.—making it a long-range solution.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• An over-crossing of Oregon 99W at 5th Street would have a significant visual and environmental impact on this area of Dundee that would be too great for an interim solution.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Also, the over-crossing, ramps would have a major blighting impact on inner-city properties adjacent to them, due to restricted access and visibility.</td>
</tr>
<tr>
<td>Reversible Lanes on Oregon 99W</td>
<td>Not Recommended</td>
<td>• There is not enough difference in the directionality of traffic to make this alternative effective. Traffic volumes are sufficiently high in both directions during both the morning and evening to dictate the need for two through travel lanes of capacity in both directions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The center left turn lane would have to be converted into a second through travel lane. This would require that left turns in either direction be handled in a “jughandle” manner with the same problems all 4 lanes.</td>
</tr>
<tr>
<td>Relocation of Downtown Dundee</td>
<td>Not Recommended</td>
<td>• The Downtown Oregon 99W Refinement Committee determined that this idea was not feasible and that Dundee’s town center should remain on Oregon 99W, centered between about 5th and 10th Streets.</td>
</tr>
</tbody>
</table>

(Table continued on the following page)

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4 The term “directionality” refers to the flow of traffic in one direction as compared to the other during a given peak hour. In the case of Oregon 99W through Dundee, one would expect that there would be substantially greater traffic headed from the Portland metropolitan area toward McMinnville during weekday p.m. peak hours; however, during typical weekday p.m. peak hours, the directional flow is not nearly as “directional” as expected. Of the total traffic on Oregon 99W in Dundee, approximately 55% is headed southwesterly, while 45% is headed northeasterly.

5 In order to gain a second lane of capacity on Oregon 99W through Dundee without significantly widening the street, either the center left turn lane would need to be converted or the two 5-foot bike lanes would need to be eliminated. It would present an unsafe condition if the two bike lanes were eliminated, because pedestrians would be exposed to through traffic without a “buffer”. The five feet that is currently dedicated to the bike lane effectively buffers the pedestrian from through travelers, in addition to providing space for bicyclists.
<table>
<thead>
<tr>
<th>Potential Interim Solution</th>
<th>ODOT Recommendation</th>
<th>Discussion</th>
</tr>
</thead>
</table>
| One-way Couplet            | Not Recommended     | • As with the five-lane cross-section, the couplet would eliminate the need for the interchange between Newberg and Dundee but without the interchange, 25,000 to 30,000 ADT would still use the Oregon 99W corridor in Dundee. However, this concept should be considered by Dundee as a long-range project - in addition to the Bypass.  
• An increase in the “barrier effect” of Oregon 99W through Dundee by widening its corridor to two streets each carrying traffic levels of about 15,000 vehicles per day, rather than one carrying 30,000 vehicles per day.  
• An unacceptable impact on adjacent residents and businesses within close proximity to the new couplet street, due to traffic volume and noise.  
• Would have significant cost beyond what can be reasonably expected to be funded for an interim solution. |
| Oregon 99W & Maple         |                     |            |
| OR 99W & New St. northwest of WPRR |                     |            |
| Linden Lane:               |                     |            |
| • Linden Lane is not currently fully connected through Dundee. Hence, use of this street would require construction of several new sections of street, some of which would require acquisition and demolition of existing homes.  
• Introduction of a new couplet street with 15,000 average daily trips through the residential neighborhood adjacent to Linden Lane would have a substantial negative impact on the livability of this residential neighborhood.  
• The extension of Linden Lane northeast of 5th Street would result in a street severing Dundee Elementary School from the adjacent community park. |
| Maple Street:              |                     |            |
| • Negative impacts to the residential neighborhood.  
• ~ 30 homes would need to be acquired for right of way. |
| Willamette Pacific Railroad Right-of-Way: |                     |            |
| • There is not sufficient width to facilitate a 40-foot improved street-plus-sidewalk on the northwest side of the rail tracks.  
• Under an option where WPRR tracks were relocated to Maple Street, thereby facilitating northbound one-way couplet street on existing WPRR ROW, impacts to Maple Street land uses would be too great, cost of relocation of WPRR tracks too expensive (~$500,000/mile for new track construction, not including right of way) - not an interim solution.  
• Construction of a new couplet street in this location would be too expensive for an interim solution, the need for which would be displaced when the Bypass is constructed.  
• Given the time required to negotiate right-of-way issues with railroads, it is unlikely that this solution would be achievable within a reasonable time period. |
| Dayton-Edwards connection | Not Recommended until after the Bypass is completed. | • The Dundee TSP states that, due to neighborhood impacts, this connection should not be implemented until after the Bypass is completed. |
| Fox Farm-Alpine connection | Not recommended. | • Neighborhood Impacts too severe. |
| Traffic Signals at:        |                     |            |
| • 9th-10th and Niederberger-Parks Rd |                   |            |
| • Recommended             | • Recommended      | • Will facilitate local off-highway traffic circulation  
• Not recommended          | • Signal not currently warranted |
| Commuter Rail              | Not recommended     | • Rejected as a stand-alone alternative to the Bypass in the NDTIP LEIS, due to low ridership and high cost ($112 million in 1997 dollars).  
• A Transit Plan recommending Park & Ride lots has been approved by the Yamhill Co. Transit Committee. The Bypass Project Management Team is currently considering funding alternatives. |
| Commuter Bus Service       | Recommended         | • Both feasible for local traffic, but need funding.  
• Both Recommended         |            |
| Dundee Intra-city Connectivity Improvements |                   |            |
| • Red Hills Road and Fairview Road |                   |            |
| • Fulquartz Landing Road   |                     |            |
Analysis of Alternatives to Relieve Oregon 99W Congestion

The first step in the development of alternative strategies to relieve traffic congestion or better facilitate local traffic on Oregon 99W through Dundee was to review previous planning efforts completed in the vicinity. Several previous planning efforts have considered short and long term solutions and measures to improve the traffic congestion problem along Oregon 99W through Dundee, e.g.:

- Dundee Transportation System Plan (TSP)
- Dundee Oregon 99W Main Street Refinement Plan
- Newberg-Dundee (Bypass) Draft and Final Transportation Improvement Program Location Environmental Impact Statement (LEIS) and Findings of Fact and Statement of Reasons in Support of Exceptions to Goals 3, 11, and 14, Yamhill County.

Potential interim (implementation prior to construction of the Newberg-Dundee Bypass) solutions and measures that were considered in these plans were either recommended for implementation or were dismissed for various reasons. Those interim measures that were recommended for implementation have been carried forward in this report. Those measures that were dismissed previously have been reconsidered and the reasons for their prior dismissal have been carefully re-examined as part of this report.

The next step in the process, after having reconsidered those potential solutions and measures to alleviate Oregon 99W congestion through Dundee, was to develop alternative measures that may not have been considered previously. This development of alternatives took place first by the ODOT project team, next in a workshop with the DTAC, and then with the general public in small group brainstorming sessions. Each of the alternative measures that have been developed during this process were then further considered by the project team, and have been included in this report if they were deemed effective at achieving the desired objective.

Alternatives Considered

The following alternatives have either been previously considered or were identified during the study process as solutions and measures to relieve congestion along Oregon 99W in Dundee. With only two exceptions, these measures have appeared in previous documents cited above and in Newberg and Yamhill County Transportation System Plans (TSPs). Additional details of these solutions and measures are provided hereafter in this report. The previously considered alternatives are as follows:

Solutions

- Five-lane Cross-section
- Four-lane Cross-section with Jughandles
- Sunken Grade on Oregon 99W
- Reversible Lanes on Oregon 99W

6 The term “jughandle” is used to describe a roadway design used to eliminate left turns off of and/or onto a major street (e.g. Oregon 99W) by using the lower order (local) streets to allow motorists to turn right and then cross the major street in a through movement, usually with the assistance of a traffic signal. For example, in order to facilitate a motorist coming from Newberg on Oregon 99W to head toward the Willamette River at a new traffic signal at 10th Street (in which physical constraints prevent the ability to allow a left turn lane on Oregon 99W), the motorist could turn right at 9th Street, go one block west and turn left at a new (to be constructed) local street, go one block and turn left at 10th Street, and proceed across Oregon 99W at a new signal at Oregon 99W/10th Street. By eliminating the left turns on the main street (Oregon 99W), physical space is saved (by eliminating the left turn pocket) and additional capacity is gained by eliminating a phase on the timing of the traffic signal.
• Roundabouts
• Relocation of Downtown Dundee
• One-way Couplet
  o Oregon 99W & Maple Street
  o Oregon 99W & Linden Lane
  o Oregon 99W & a new street northwest of Western Pacific Railroad (WPRR)
• Inter-city Connectivity Improvements
  o Dayton to Edwards Connection
  o Fox Farm Road to Viewcrest Court Connection

Measures
• Intra-city Connectivity Improvements
• Traffic Signals at (realigned 9th to)10th and Niederberger-Parks Road
• Commuter Rail
• Commuter Bus Service

Table 1 in the Executive Summary above summarizes the prior disposition of each of these alternatives from the previous planning efforts.

These previously considered alternatives are discussed in greater detail below.

Solutions Considered

Five-lane Cross-section
The five-lane cross-section involves widening Oregon 99W to five lanes through Dundee. This solution was first mentioned in the City of Dundee Transportation System Plan (TSP) and has been a topic of discussion at several meetings of the DTAC, the planning commission, city council and the general public. This alternative would provide additional capacity on Oregon 99W in Dundee, thereby reducing congestion along the corridor. However, even if considered as an interim solution (i.e., not permanent), five-lanes on Oregon 99W through Dundee would require a significant amount of right-of-way (ROW) acquisition throughout the corridor, and would create a significant barrier between the north and south side of Dundee. Also, due to its width and projected traffic volume without the Bypass, the five-lane cross-section is not supportive of a pedestrian-friendly environment and the City’s adopted vision. This solution was dismissed by the DTAC during the Dundee TSP process as it did not meet Dundee’s community development and livability objectives. Examples of the five-lane cross-section are shown in Figure 1.

7 A five-lane cross section for Oregon 99W as a permanent alternative to the Bypass was considered by ODOT as part of the Bypass goal exception process and rejected due to lack of traffic-carrying capacity over the required 20-year planning period and unreasonable impacts on Dundee (“Findings of Fact and Statement of Reasons in Support of Exceptions to Goals 3, 11, and 14”)
WITHOUT BIKE LANE*

WITH BIKE LANE

* WOULD REQUIRE ESTABLISHING BIKE LANE ON ALTERNATIVE PARALLEL STREETS THROUGH DUNDEE.
Based on the ODOT Design Manual and discussions with ODOT engineering staff, five lanes of capacity through Dundee, even if considered as a temporary solution until the Bypass is constructed, would require the following minimum lane dimensions:

- 14-16 foot center left turn lane
- 11-foot minimum inside through travel lane
- 15-foot minimum outside travel lane or, if the bike lane is retained, 12-foot outside travel lane and minimum 5-foot bike lane*
- Minimum 6-foot sidewalks

* If a bike lane is not provided on Oregon 99W through Dundee, an alternate street/location would be identified. However, the Dundee Oregon 99W Main Street Refinement Plan and the current draft of the Bypass Bicycle/Pedestrian Plan envision Oregon 99W as the primary bicycle route in the Newberg-Dundee Bypass project area – in addition to bicycles being permitted on the shoulders of the Bypass.

The cross-section described using these minimum dimensions amounts to a 66-foot wide street section (curb-to-curb) with six-foot sidewalks on each side, resulting in an overall cross-section of 78 feet. This dimension constitutes the minimum width that Oregon 99W could be widened to provide five travel lanes while meeting ODOT minimum design criteria. It is important to note that these minimum design criteria are substantially less than the dimensions that would be required if this improvement were envisioned to be permanent. Moreover, this minimum width is substantially greater than the 60-foot ROW width that is currently available. Thus, such a widening would result in a substantial impact to adjacent businesses along Oregon 99W within the core area of Dundee.  

The Dundee TSP and the Dundee Oregon 99W Main Street Refinement Plan prescribe that in the long-term, Oregon 99W should have a three-lane cross-section with on-street parking, bike lanes, and wide sidewalks within the downtown core. Accordingly, the question has been asked: “If a five-lane section were constructed to provide short-term (prior to the Bypass) congestion relief, then in the long-term (after the Bypass) couldn’t the two outside travel lanes be converted to on-street parking?” In answer to that question, the following factors make this solution unacceptable:

- Five lanes (either parking or travel lanes) would require a significant widening of the highway, requiring substantial acquisition of right-of-way with severe impacts on local businesses;
- Five lanes on Oregon 99W is inconsistent with the Goals and Vision Statement that has been adopted by the City of Dundee, therefore, unless these documents were amended, five lanes would not be supported by the Dundee City Council;
- Five lanes would temporarily alleviate congestion in Dundee, but would not substantively reduce average daily traffic on OR 99W in Dundee or improve livability in Dundee. If, despite the points cited above, Dundee changed its position on five lanes in the Dundee TSP and Vision Statement and supported widening Oregon 99W to five lanes, the need for the interchange between Newberg and Dundee on the Bypass would go away and traffic that would have been “intercepted” and diverted to and from the bypass via that interchange to

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8 In the “Findings of Fact and Statement of Reasons in Support of Exceptions to Goals 3, 11, and 14” submitted to Yamhill County, the five-lane alternative was demonstrated to have unreasonable impacts on existing Dundee businesses. See Appendix A for details on business impacts of five lanes.
and from the south would go through Dundee. The resulting Average Daily Traffic (ADT) would then be 25,000 to 30,000 on Oregon 99W in Dundee after Bypass construction. This amount of traffic is prohibitive of a livable, pedestrian-friendly downtown and not supportive of the City’s adopted vision. Conversely, if Oregon 99W was not expanded to five lanes and the Bypass East Dundee Interchange was built, the ADT would be 13,000-15,000 because the interchange would intercept trips between Newberg and points to the south.

- Based on ODOT minimum design standards, the outside through travel lane would need to be a minimum of 15 feet wide (or a bike lane would be required, which would require even greater width). A standard on-street parking lane is eight feet wide. Thus, the provision of a through travel lane in the interim would require substantially more street width than would eventually be needed after the Bypass;

- During the adoption of the Dundee Oregon 99W Main Street Refinement Plan, several businesses in Dundee have appealed the provision of on-street parking along their frontage, because the amount of land required would compromise their ability to do business. The Dundee City Council is currently considering revisions to the Draft Oregon 99W Main Street Refinement Plan to eliminate on-street parking in some sections between 5th and 10th Street. In the absence of this additional land for on-street parking (to be potentially used for an outside through travel lane in the interim), a five lane section is not possible.

- Construction of five lanes would be very costly as an interim project and would not likely be completed prior to construction of the Bypass (est. $50 Million to widen through Dundee to McDougal Corner as the entire section would need to be dealt with in order to be effective. This project would also have to include extensive development of frontage roads in order to meet access spacing safety standards).

**Recommendation**

Based on these factors, widening Oregon 99W to five lanes through Dundee is not recommended.

**Four-lane with Jughandle/Loop Circulation**

A four-lane cross-section was proposed during the development of the Dundee TSP as a means of increasing capacity on Oregon 99W through Dundee. In recognition that the current highway paved section is 45-48 feet in width, this alternative would attempt to use this width to expand capacity with minimal need for widening. In exchange for providing an additional through lane in each direction on Oregon 99W through Dundee, this alternative would necessitate removal of the center left turn lane and installation of a continuous center median between 5th and 10th streets. This median would thereby prohibit all left turns between 5th and 10th streets and require those motorists desiring to turn left to use jughandle intersections to make right-turns, and then cross the highway at existing and new traffic signals at 5th and 10th Streets. Figure 2 shows an example of the four-lane with jughandle and loop connectors concept.

Based on standards contained in the ODOT Highway Design Manual (2003 edition), the minimum cross-section that could safely accomplish a four-lane cross-section on Oregon 99W in Dundee is as follows:

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9 Three lanes on Oregon 99W can only be maintained if, in addition to the Bypass, the East Dundee Interchange is also built. See “Findings of Fact and Statement of Reasons in Support of Exceptions to Goals 3, 11, and 14”, pages 52-54.
• Center median: minimum two feet wide, to mitigate conflicts between opposing directions of travel and enforce “no left turns”;

• 1 foot of shy distance on either side, to provide a buffer to help the motoring public to avoid the raised median;

• Four 11-foot wide travel lanes, which constitutes the minimum width travel lanes that ODOT can allow given the designation of Oregon 99W as a statewide highway and freight route;

• Minimum of 5-foot wide shoulder/bike lane, facilitating right turns into relatively tight-radius driveways and local streets. This space is required because through vehicles, particularly trucks, would otherwise be traveling too close to pedestrians on the sidewalk, with no margin for error. In addition, this space would be needed in case of vehicle breakdowns;

• Minimum 6-foot wide sidewalks.
Meeting these standards is not possible or acceptable for the following reasons:

- These minimum dimensions could be accomplished only under a re-designation of the posted speed in Dundee to 25 miles per hour. In any case, assuming this speed limit was acceptable, there is insufficient right of way to build 4 lanes. The total width of this section, as described above is 58 feet curb-to-curb, and 70 feet including sidewalks. In the downtown core, the ROW width is 60 feet; in many cases, businesses currently encroach on the existing right-of-way for on-site parking and circulation. In combination with improvements to the highway, there are substantial local street connections that would need to be made to accommodate the jughandles and loop connections required under this alternative. These improvements would also require significant ROW acquisition, the likely relocation of homes or businesses, and incur significant costs. Thus, accomplishing the four-lane section on Oregon 99W would constitute a substantial and costly construction project.

- Also, in this configuration, a continuous median the length of the Dundee downtown would be necessary to prevent left turns if any additional capacity is to be gained from the additional lanes. With the prohibition of left turns, this alternative would help maintain more constant vehicular flow through Dundee, by eliminating delay caused by left turning vehicles. Since the required center median would prohibit all left turns on Oregon 99W through Dundee, this solution would have a substantial negative impact to businesses. Without the prohibition of left turns (and with the high volume of traffic that would remain on Oregon 99W), the interior lanes in both directions would essentially serve as center turn lanes, effectively limiting the road to not much more than two lanes of through capacity during peak travel times. This condition would, in turn, result in increased safety problems. As some through-travelers become stuck behind turning vehicles, they would try to force their way back into the outside lane, thereby increasing the likelihood of rear end crashes. Some of these crashes could be severe due to the speed differential between the slow moving merging vehicle from the interior lane and the faster moving vehicle in the outside lane.

- Also, the required widening and jughandles would require a significant amount of ROW, which would also have a negative impact on businesses. Accordingly, the DTAC dismissed this alternative during the Dundee TSP process due to the negative impacts to businesses on Oregon 99W.

**Recommendation**

Based on these factors, the four-lane alternative with jughandles/loop connections is not recommended.

**Sunken Grade**

The sunken grade alternative was originally considered in the City of Dundee TSP, and involved widening Oregon 99W to six lanes and depressing it below grade through Dundee. Local street crossings would be provided via landscaped bridge crossings. Collector intersections with Oregon 99W (at 5th, 10th, and Niederberger-Parks) would include grade-separated interchanges. The sunken grade would allow vehicles on Oregon 99W to pass through Dundee without stopping, and would create greater mobility for local traffic crossing Oregon 99W.
This solution was strongly opposed by Dundee residents and the DTAC due to exorbitant costs and land impacts.

A variation of the sunken grade alternative could include a grade-separated crossing of 5th Street from Oregon 99W. This alternative would effectively eliminate the traffic signal at 5th Street, thereby reducing delay to through traffic on Oregon 99W.

This alternative has several factors that make it unacceptable for this interim plan:

- Congestion on Oregon 99W through Dundee is partly a function of the traffic signal at 5th Street; however, elimination of the signal will provide only an estimated 10-15% additional capacity, and Oregon 99W is approximately 30-40% over capacity. Hence, this measure would not fully mitigate congestion.
- Construction of a grade-separated crossing of Oregon 99W at 5th Street – whether it is over or under – is a major construction project that would take a minimum of five years to plan, design and construct. The sheer magnitude of this prospective project deems it a long-range solution.
- An over-crossing of Oregon 99W at 5th Street would have a significant visual and environmental impact on this area of Dundee that would be too great for an interim solution.
- Also, the over-crossing, ramps would have a major blighting impact on inner-city properties adjacent to them, due to restricted access and visibility.

Based on these factors, a grade-separated crossing at 5th Street was dismissed from further consideration.

Recommendation

Based on the factors by which the DTAC rejected this alternative, this alternative is not recommended.

Reversible Lanes

This alternative involved converting the center left turn lane into a second through travel lanes in one direction during the respective peak hour of traffic. It was first considered in the Dundee TSP and, if applicable, would help the reduce congestion for vehicles traveling in one direction during peak travel times.

The following factors make this solution unacceptable:

- Recent traffic counts conducted during weekday peak periods in September 2005 reveal that there is not enough difference in the directionality of traffic to make this alternative effective. Traffic volumes are sufficiently high in both directions during both the morning and evening to dictate the need for two through travel lanes of capacity in both directions. Hence, by adding one lane of additional capacity to only the “peak” direction, traffic congestion would prevail in the opposite direction due to its heavy flow. This alternative has

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10 The term “directionality” refers to the flow of traffic in one direction as compared to the other during a given peak hour. In the case of Oregon 99W through Dundee, one would expect that there would be substantially greater traffic headed from the Portland metropolitan area toward McMinnville during weekday p.m. peak hours; however, during typical weekday p.m. peak hours, the directional flow is not nearly as “directional” as expected. Of the total traffic on Oregon 99W in Dundee, approximately 55% is headed southwesterly, while 45% is headed northeasterly.
high operational costs and is very difficult to enforce, especially given the high degree of access to Oregon 99W through Dundee.

- Another disadvantage of the reversible lanes concept is associated with the conversion of the center left turn lane into a second through travel lane\textsuperscript{11}. This would require that left turns in either direction be handled in a “jughandle” manner; that is, those motorists desiring to turn left from Oregon 99W would be required to turn right at a side street and use a traffic signal at 5\textsuperscript{th} Street (today) or 10\textsuperscript{th} Street (proposed signal) to cross the highway (see the Jughandle alternative described previously in this report). This would require significant construction of local streets to facilitate this alternative routing, and would result in substantial degradation to access to commercial businesses along Oregon 99W. The DTAC dismissed this alternative as it would diminish accessibility for Dundee residents and businesses.

**Recommendation**

Based on these factors, this alternative is not recommended.

**Roundabouts**

It was suggested at the August 3, 2006 Open House that roundabouts on Oregon 99W should be considered to mitigate traffic congestion prior to construction of the Bypass. Based on this suggestion, analysis was conducted of this concept, as described below.

A single-lane roundabout has a maximum service volume of 20,000 vehicles per day.\textsuperscript{12} Since the existing traffic counts on Oregon 99W in Dundee are currently 25,000-30,000 vehicles per day, a double-lane roundabout would be required to serve today's traffic. A typical inscribed circle diameter (outer edge of traveled way of the roundabout) would be in the range of 150 to 180 feet. In addition, roundabouts should include curbing and a buffer strip between a ten-foot wide sidewalk or multi-use path and the circulatory roadway. Therefore, at a planning level, it is reasonable in flat terrain to include at least 20 feet from the edge of the traveled way and the right-of-way line. This means the total footprint of the roundabout could be nearly 200 feet in diameter. Roundabouts also require a splitter island to provide positive guidance and desired speed reduction. Access in the vicinity of the splitter island and approach striping should be restricted to right in/right out only movements. These splitter islands should a minimum length of 50 feet. Therefore, at a planning level, access within 75 feet of the roundabout will be affected.

A two-lane roundabout footprint and roadway approach length affected by access management needs would have a substantial impact on businesses along Oregon 99W in Dundee and would be problematic for the following reasons:

\textsuperscript{11} In order to gain a second lane of capacity on Oregon 99W through Dundee without significantly widening the street, either the center left turn lane would need to be converted or the two 5-foot bike lanes would need to be eliminated. It would present an unsafe condition if the two bike lanes were eliminated, because pedestrians would be exposed to through traffic without a “buffer”. The five feet that is currently dedicated to the bike lane effectively buffers the pedestrian from through travelers, in addition to providing space for bicyclists.

\textsuperscript{12} Roundabouts: an Informational Guide, Federal Highway Administration, Exhibit 1-7 (Guide, Appendix D) provides guidance on roundabout planning operations and design and summarizes basic roundabout characteristics of various roundabout types.
• Traffic volumes should be relatively equal from each entering approach for a roundabout to be effective. In a case where traffic volumes are very heavy in the north-south direction (25,000-30,000 vehicles per day on Oregon 99W) and very low in the east-west directions (less than 2,000 vpd from either 5th or 10th Streets), side-street traffic may have difficulty entering the roundabout safely due to the absence of available “gaps” in the major street yield-controlled traffic stream.

• Based on a total footprint of 200 feet in diameter, roundabouts at 5th and/or 10th would require acquisition and relocation of a substantial amount of land and businesses.

• The area of impact of a roundabout at either 5th or 10th would extend beyond the 200-foot circle at the intersection, and would affect accesses to businesses within another 75 feet in either direction on Oregon 99W. These accesses would either need to be closed or converted to right-in/right-out only operation. In either case, the impacts to adjacent businesses would be significant.

For these reasons, roundabouts in Dundee were not considered to be feasible as a short-term solution.

Recommendation

Based on these factors, this alternative is not recommended.

Relocation of Downtown Dundee

During the development of the Dundee TSP and the NDTIP LEIS, the City gave considerable consideration to the determination of the appropriate location for the town center. Various alternatives were considered, including a new town center near the river within the vacant area to the southeast of Oregon 99W. Another location considered was on the hillside to the northwest or the current city center. By establishing the town center in an alternate location, the issue of adding lanes to Oregon 99W and the right of way impact on existing businesses would become moot – assuming that all the businesses desired to relocate. After much deliberation, it was decided by the Downtown Refinement Committee that this idea was not feasible and that Dundee’s town center should remain on Oregon 99W, centered between about 5th and 10th Streets.

Recommendation

Based on these factors, the alternative of relocating Dundee’s downtown is not recommended.

One-Way Couplet

A one-way couplet through Dundee would separate the eastbound and westbound directions of travel onto different streets parallel to OR 99W. Based on operations analysis, a minimum of two travel lanes in each direction would be necessary to meet travel demands. All couplet measures proposed using the existing highway as one direction of travel and using Linden Lane, Maple Street, or a new street immediately northwest of the Willamette Pacific Railroad tracks as the other direction of travel. In any of these configurations, a one-way couplet would:
• Provide sufficient capacity with two lanes in each direction to satisfy short-term demands;
• Increase capacity of the minor street movements by reducing numbers of conflicting maneuvers;
• Simplify pedestrian crossing movements by requiring pedestrians to cross only a single direction of through traffic at a given time;

However, the following factors have unacceptable negative impacts, which include:

• As with the five-lane cross-section, the couplet would eliminate the need for the interchange between Newberg and Dundee and without the interchange, 25,000 to 30,000 ADT would still use the Oregon 99W corridor in Dundee – with the negative impacts discussed below.
• An increase in the “barrier effect” of Oregon 99W through Dundee by widening its corridor to two streets, each carrying traffic levels of about 15,000 vehicles per day, rather than one carrying 30,000 vehicles per day.
• An unacceptable impact on adjacent residents and businesses within close proximity to the new couplet street, due to traffic volume and noise. The new couplet street would require a minimum of 40 feet of width for travel lanes, buffer for pedestrians (bike lane or on-street parking), and sidewalk on at least one side.
• Result in significant cost beyond what can be reasonably expected to be funded for an interim solution.

The proposed alignments of the couplet alternatives are shown in Figure 3. The individual impact that the specific couplet proposals have is identified below:

**Linden Lane**

This is the only couplet proposal that involves a new couplet street on the northwest side of Oregon 99W. Linden Lane is approximately 500 feet northwest of Oregon 99W. Linden Lane is not currently fully connected through Dundee. Hence, use of this street as the southwest direction of a one-way couplet would require construction of several new sections of street, some of which would require acquisition and demolition of existing homes. Introduction of a new couplet street with 15,000 average daily trips through the residential neighborhood adjacent to Linden Lane would have a substantial negative impact on the livability of this residential neighborhood. Moreover, the extension of Linden Lane northeast of 5th Street would result in a street severing Dundee Elementary School from the adjacent community park. The DTAC indicated that construction of a public street between the school and park would be unacceptable to the community.

**Maple Street**

Maple Street is located approximately 500 feet southeast of Oregon 99W, and would be used as the northeast direction of a one-way couplet in combination with the existing Oregon 99W highway. Similar to the Linden Lane alternative, there is an established residential neighborhood adjacent to Maple Street, which would be heavily impacted by the presence of an estimated 15,000 additional vehicle trips. Approximately 30 homes would need to be acquired for right of
way and the residents relocated in accordance with federal and ODOT guidelines. In recognition that Maple Street is not fully connected through Dundee, there are several block-long sections that would need to be constructed to complete the new couplet.

The most difficult operational and safety issue associated with a Maple Street couplet is that the Willamette Pacific Railroad tracks would need to be crossed twice in order to divert the northeasterly direction of traffic to Maple Street. In the unlikely event that any new railroad crossing would be approved, these crossings would need to be either grade-separated or, at a minimum, equipped with railroad-actuated gates to mitigate auto-rail conflicts. There is an average of two trains per day using these rail tracks – each train crossing would result in a 2-3 minute interruption of Oregon 99W traffic. This level of interruption is unacceptable for the operation of a statewide highway and freight route. This interruption would be particularly unacceptable in the event that emergency vehicles should arrive during these times. Alternatively, grade-separating the rail crossings would be exorbitantly expensive for an interim traffic measure.

**Willamette Pacific Railroad Right-of-Way**

The third alternative considered for a one-way couplet is the use of the WPRR right-of-way as the northeast direction of the couplet, in combination with the existing Oregon 99W to carry coast-bound traffic. The new couplet street would be located on the northwest side of the WPRR tracks, and would therefore not need to cross the tracks. Given that the rail ROW is 60 feet wide, there is not sufficient width to facilitate a 40-foot improved street-plus-sidewalk on the northwest side of the rail tracks. Thus, construction of a new street along the rail tracks would require substantial ROW acquisition, thereby narrowing the parcels between the WPRR tracks and Oregon 99W to a point that would impair their development. Moreover, construction of a new couplet street in this location would be very expensive – not a characteristic of an interim solution, the need for which would be displaced when the Bypass is constructed.

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13 A variation of this alternative was suggested at the August 3, 2006 Public Open House. The newly suggested option would relocate the WPRR tracks from their current location to Maple Street, thereby vacating space on the current WPRR exclusively for the new couplet street. This option would have extensive land use impacts (on Maple Street residents), substantial costs, and would involve long negotiations with the railroad; therefore, this option was dismissed and is not considered an interim solution.
NOTE: THESE ALTERNATIVES ARE CONCEPTUAL AND FOR ILLUSTRATIVE PURPOSES ONLY, AND DO NOT REPRESENT RECOMMENDED ALIGNMENTS.
Also, given the time required to negotiate right of way issues with railroads, and notwithstanding the issues above, it is unlikely that this solution would be achievable within a reasonable time period.

**Summary:** These proposed solutions would require a significant amount of ROW for their construction, would have substantial impacts to adjacent land uses and community livability, and would be costly to build. In addition, due to the level of funding required, a one-way couplet constitutes a permanent solution to Oregon 99W congestion, and does not readily serve as an interim solution.

**Recommendation**

Based on these factors, a one-way couplet on Oregon 99W through Dundee is not recommended.

**Oregon 99W Intercity Connectivity Improvements**

**Dayton – Edwards Connection**

This alternative proposes an inter-city connection between Edwards Road and Dayton Avenue to provide another alternative route between Dundee and Newberg, located to the northeast. This road would serve as a frontage to Oregon 99W on the northeast side of Dundee. This alternative would reduce the number of vehicles using Oregon 99W at the northeast end of town. However, with this connection in place, a traffic analysis conducted for the NDTIP LEIS estimated that prior to construction of the Bypass, 12,000–13,000 additional vehicle trips would be added to Edwards Road and Dayton Avenue daily. This level of traffic on Edwards Road – a “city collector” – and on Dayton Road – a “county collector” – is inconsistent with streets of these functional classifications. Additionally, the majority of this traffic is through-traffic and would have to use other local streets to return to Oregon 99W at the south end of Dundee in order to continue southbound. This alternative was rejected in the Bypass goal exception and dismissed by the DTAC during the Dundee TSP due to the adverse impacts of additional traffic volume to the surrounding neighborhood. This connection is, however, included in the Dundee TSP for completion once the Bypass is in place, as traffic volumes would be much lower due to the reduced congestion on Oregon 99W. The provision in the TSP clearly states that, due to severe negative neighborhood impacts, this connection should not be implemented until after the Bypass is complete. The Dayton-Edwards Connection is shown in Figure 4.

**Fox Farm – Alpine Street Connection**

The DTAC also considered a connection of Alpine Street to Fox Farm Road to provide another alternative to Oregon 99W for Dundee to Newberg traffic. Figure 3 shows this connection, which would provide a connection between Alpine Street in Dundee to Fox Farm Road immediately opposite Logger Lane just outside the city limits. Currently, Fox Farm Road is one of the two key routes used as an alternate to Oregon 99W between Dundee and Newberg. However, as drivers approach Dundee from Newberg via Fox Farm Road, they are required to enter onto Oregon 99W and its associated congestion to enter Dundee. This connection would alleviate the need for drivers to enter onto Oregon 99W, thereby routing these inter-city travelers through the residential neighborhood north of SW 1st Street and west of Oregon 99W. The DTAC determined that the impact of additional through traffic to this single-family

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14 Today, Dayton Road carries about 1650-1700 ADT and Edwards Road carries about 450-500 vehicles per day
neighborhood was too great, and that implementation of this measure was therefore unacceptable.

Recommendation
An inter-city connectivity improvement of Dayton-to-Edwards is recommended in the future, but should not be constructed until after the Bypass is operational. The Fox Farm-to-Alpine Street connection is not recommended.

Measures Considered

Dundee Intra-city Connectivity Improvements
Several interim measures to reduce congestion on Oregon 99W were identified in the Dundee Oregon 99W Main Street Refinement Plan. This Plan referred to the Dundee TSP for planned improvements to the local roadway network for the purposes of improving mobility for Dundee residents. The improvements include:

Connectivity Improvements

- Hill-side of Oregon 99W – Local connection between 5th Street and 7th Street to facilitate Dundee residents and downtown patrons to circulate within the city without using Oregon 99W.
- River-side of Oregon 99W – Local connection between 3rd Street and 10th Street to facilitate downtown Dundee patrons to circulate within the city without using Oregon 99W.

Each of these improvements will improve intra-city movements for Dundee residents and businesses without having to use Oregon 99W. These connectivity improvements will not materially improve traffic operations for through travelers on Oregon 99W.

Recommendation
Intra-city connectivity improvements to facilitate local movements within Dundee are recommended.

Traffic Signals
The installation of traffic signals at the intersections of (9th realigned to) 10th Street and Niederberger-Parks Road with Oregon 99W were recommended improvements in the Dundee TSP. The traffic signal at 10th Street is not currently justified by ODOT signal warrants, although it will likely be needed in the relatively short term to facilitate crossing OR 99W, given current traffic levels and expected development patterns. Also included in the Dundee TSP is the realignment of 9th (Worden Hill Road) from the northwest to intersect with Oregon 99W at 10th Street. This will facilitate the collector streets from both sides of Oregon 99W intersecting at a common point. Installation of this signal could reduce use of the 5th Street signal and lower the local traffic on 5th Street adjacent to the Dundee Elementary School.
The future traffic signal at Oregon 99W/Niederberger-Parks is not warranted at this time, and will likely not be needed for at least ten years in the future. Thus, signalization of this intersection does not fall within the purview of this interim improvement plan.

These improvements are expected to improve local circulation and disperse traffic; however, they would have a minimal effect on reducing traffic congestion on Oregon 99W. Figure 5 shows the location of the traffic signals.

**Recommendation**

A traffic signal at 10th Street in conjunction with the realignment of 9th to 10th is recommended.

**Commuter Rail**

Commuter rail as a solution to congestion on Oregon 99W was rejected as a stand-alone alternative to the Bypass in the NDTIP LEIS, due to low ridership and high cost.\(^ {15} \) It was, however, recognized as a potential future complementary measure to the Bypass to aid commuting to Portland from McMinnville, Newberg, Dundee and the neighboring communities.

**Recommendation**

Based on these factors, this alternative is not recommended.

**Commuter Bus Service**

This alternative was also presented in the NDTIP LEIS and dismissed due to its limited reduction of traffic on Oregon 99W (estimated to be about 2% reduction in traffic on Oregon 99W). This alternative was, however, identified as a potential measure to prolong the life of the Bypass if used as part of a multi-modal package. ODOT has currently published a Transit Plan as part of on-going planning associated with the Bypass, evaluating methods in which commuter bus service may be improved in the Oregon 99W corridor from McMinnville to the Portland metropolitan area.\(^ {16} \)

**Recommendation**

Commuter bus service improvements are recommended within the Oregon 99W corridor, and have been approved by the Yamhill County Transportation Committee for implementation. ODOT is working with the Yamhill County Transportation Committee on implementation of these improvements. The Committee has approved a service concept in a draft technical memorandum that included park-and-ride lots at various locations on Oregon 99W prior to construction of the Bypass and at some of the Bypass interchanges in coordination with construction of that facility. The next steps will include incorporating the concept into local TSPs and working on funding for the service improvements and park-and-ride lots.

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\(^{15}\) 1998 Yamhill County Commuter Rail Study. The study estimated the cost of capital improvements required to develop the line for commuter service was in the range of $112 million in 1997 dollars. This estimate included the track upgrades, as well as a maintenance facility, centralized train control, vehicles, stations, and park and ride lots. Operating costs were projected to be $3 million annually, based on 1,600 trips per day in 2015.

\(^{16}\) Technical Memorandum #1: Transit Market Evaluation, Service Coordination Potential, and Service Concept, May 9, 2006. A copy may be obtained on [www.newbergdundeebypass.org/otherplanningprojects/transit.aspx](http://www.newbergdundeebypass.org/otherplanningprojects/transit.aspx)
ORE 99W TRAFFIC SIGNAL LOCATIONS
DUNDEE, OREGON

FIGURE 5
New Potential Measures
As described in a previous section, the study team had two key meetings with the DTAC and with the general public to solicit input. The purpose of these meetings was to solicit suggestions from interested parties to develop additional potential interim measures for congestions relief in Dundee. At these meetings, the following new ideas were suggested:

- **Intelligent Transportation System (ITS) Measures**
  1) ODOT Traffic Cameras (ODOT’s TripCheck website)
  2) Variable Message Signs
  3) Driver Advance Warnings of upcoming congestion

- **Local Road Improvements**
  1) Red Hills Road and Fairview Road
  2) Fulquartz Landing Road

Details of these measures are provided in the following paragraphs of this report.

**Intelligent Transportation Measures (ITS)**
These measures include providing information to help educate drivers regarding potential congestion on Oregon 99W. Careful placement of variable message signs and traffic cameras can provide drivers with the information necessary to make a decision regarding their travel route. This measure includes placing a variable message sign for a driver prior to entering Newberg on Oregon 99W that would provide the travel time information through Dundee. These signs may also recommend alternative routes for drivers, such as OR 22 to I-5. Another method of ITS may include placing traffic cameras throughout the Oregon 99W corridor through Dundee, that could be monitored through the ODOT Traffic Management Operations Center (TMOC). Drivers are able to access this information via the internet ([www.TripCheck.com](http://www.TripCheck.com)) to view congestion and obtain travel time information. Another measure is to provide drivers with traffic congestion updates through the news media. These measures provide drivers with the necessary information to select alternative routes to avoid congestion. There is a relatively low cost associated with the installation of these systems; however, due to potential traffic impacts on roads in other jurisdictions, an engineering study would need to be completed to identify the feasibility and effectiveness of this measure.

**ODOT Traffic Cameras (ODOT’s TripCheck website)**
An advantage of implementing ODOT Traffic Cameras and publicizing the information via the TripCheck website is that during certain periods of the day this travel alert information may allow drivers to decide to either make a trip using Oregon 99W, postpone the trip, or divert the trip to another route. This real-time information is relatively inexpensive to implement and may help to reduce driver anxiety in the Oregon 99W corridor.

**Variable Message Signs**
Variable message signs (VMS) would potentially be located strategically to inform motorists far enough in advance of Dundee Oregon 99W congestion to facilitate their diversion to alternate routes. There are four problems associated with this system. First, Oregon 99W congestion
through Dundee is so predictable (i.e. back-ups of ¼ to ½ mile for 2-3 hours every weekday, and Sunday evening) that the information would tend to be redundant and repetitious. Second, in order to intercept drivers early enough in their trip to facilitate their diversion to an alternate route, VMS would need to be located in the Oregon 99W corridor 20-30 minutes prior to Dundee. This would be necessary because the increased travel time associated with alternate routes is in the 10-15 minute range. Thus, the level of delay on Oregon 99W would need to exceed this level for the alternate route to be attractive to drivers. Location of VMS at such distant locations to intercept a significant number of motorists may be problematic. Third, if a VMS were located at a point distant enough to inform a significant number of drivers of an effective, time-saving, alternate route, the increased flow of traffic on this alternate route – likely a low-volume, rural county road (i.e. Red Hills Road) – would be problematic for adjacent residents. In other words, by attempting to solve one problem it is likely that another, bigger problem may be created. Fourth, the value of VMS in this application may be questionable based on its relatively high cost to buy, maintain and operate.

**Driver Advance Warnings of Upcoming Congestion**

In cases where unusually bad congestion is expected in the Oregon 99W corridor, for example on the July 4th holiday, it may be helpful to inform drivers in advance. Typical media that may be used could include the newspaper, the internet, or television and radio news. This advance information may warn motorists of particularly drastic levels of expected congestion, and may provide alternate routes to avoid congestion. These “news alerts” should not be used too frequently, in order to ensure their effectiveness. Nevertheless, this may be an effective means to help motorists avoid traffic congestion on Oregon 99W through Dundee.

**Recommendation**

ODOT Traffic Cameras (ODOT’s TripCheck website) and Driver Advance Warnings are Intelligent Transportation Measures that are recommended. VMS are not recommended.

**Local Road Improvements**

The following road improvements were identified to help local residents of Dundee travel in and out of town.

**Fairview Road and Red Hills Road**

During times of congestion on Oregon 99W between Dundee and Newberg, there are several alternative county routes available. These include Dayton Avenue and Fox Farm Road, both of which require motorists originating in Newberg to enter onto Oregon 99W about ½ miles north of Dundee. Thus, these two routes do not provide an alternate route that bypasses the most congested section of Oregon 99W. A “back road” route that allows travelers between Dundee and Newberg to entirely circumvent the need to use Oregon 99W is via Red Hills Road. From Dundee at 9th Street/Oregon 99W to Hancock Street/Oregon 99W in Newberg, the route is via Worden Hills Road, Fairview Road, Red Hills Road, Fox Farm Road, Hidden Springs Road, Sunnychest Drive, Morton Lane, and Oregon 240. Along this 5.5 mile route (which allows motorists to bypass a more direct, but congested route on Oregon 99W that is 2.4 miles), there is a 1.6 mile section of Fairview Road and Red Hills Road that is unpaved. In addition, the
intersection of Fairview Road/Red Hills Road is currently rutted and poorly aligned, requiring motorists to negotiate the turn at very slow speeds. Figure 6 shows alternate routes to Newberg.

This back road route between Dundee and Newberg is 5.5 miles long, as measured from 9th Street/Oregon 99W in Dundee to Hancock Street/Oregon 99W in Newberg. During uncongested periods, the back roads route takes about 10.8 minutes, while the direct Oregon 99W route takes only 3.6 minutes. Thus, during uncongested times, the back road route is not a desirable route for inter-city travel. It is only when congestion on Oregon 99W results in delays of greater than 7.2 minutes that the “back roads” route becomes the minimum time route.

Based on travel time runs conducted during typical weekday p.m. peak periods, the back road route would be the minimum time path for travelers from Newberg to Dundee. Using Oregon 99W from Main Street (Oregon 240) in Newberg, it takes an average of 16.6 minutes, while the back road route takes 10.8 minutes. Thus, the back road route provides a savings of almost six minutes during p.m. peak periods. In the opposite direction – traveling from Dundee to Newberg – the Oregon 99W route averages about 4.5 minutes versus the 10.8 minutes using the back road route.

In order to improve the viability of the “back roads” route, an option would be to improve the 1.6 mile unpaved sections of Fairview and Red Hills Roads. In the travel time analysis, it was assumed that motorists travel these unpaved roads at an estimated 30 miles per hour; if paved, travel times would likely increase to about 35-40 miles per hour, resulting in a travel time savings of about ½ - 1 minute overall. Paving of these back roads would not be justified based on the minimal decrease in travel time for the back road route. However, improvement of these roads may be justified because their paving would increase the desirability for travelers to use them, and would result in a general improvement in Yamhill County’s road system.

**Fulquartz Landing Road**

This measure includes improving and paving Fulquartz Landing Road from Oregon 99W south of Dundee to Edwards Road to provide a better alternative route from McMinnville around traffic congestion on Oregon 99W. While this route is significantly out-of-direction and approximately 1.6 miles longer than staying on Oregon 99W, this improvement would provide an alternative for local residents of Dundee to get home from McMinnville without using Oregon 99W at time of significant congestion. About 2.0 miles of this “back road” route on Fulquartz Landing Road is currently unpaved with a well-graded gravel surface.

As measured from the Oregon 99W/Oregon 18 intersection to the Oregon 99W/9th Street intersection in Dundee, the free-flow travel time (during non-peak times) is about 4.9 minutes, while travel time during typical weekday p.m. peak hours is 7.2 minutes. Thus, congestion accounts for an increase of about 2.3 minutes in travel time in this route. Use of Fulquartz Landing Road would provide drivers during peak times a route to bypass the congestion. Assuming motorists travel an average of 30 miles per hour on Fulquartz Landing Road, it would take an estimated 6.2 minutes to bypass this section of Oregon 99W. Travel time to traverse this

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17 Travel distance from the intersection of Oregon 99W/Fulquartz Landing Road southwest of Dundee to Oregon 99W/5th Street in Dundee is 1.5 miles via Oregon 99W and 3.1 miles via Fulquartz Landing Road-to-Edwards Road-to-5th Street. Thus, travel distance is 1.6 miles greater, more than double the highway route, using the unpaved Fulquartz Landing Road.
1.5 mile section of Oregon 99W would take an estimated 4.6 minutes (2.3 minutes free-flow plus 2.3 minutes of delay). Thus, the Fulquartz Landing back road route would not be desirable as the minimum time path except during extreme periods of congestion that are not typically experienced during weekday peak periods.

This 2.0 mile section of Fulquartz Landing Road could be paved in order to improve Yamhill County’s system, and secondarily, to provide an alternate route for local travelers to avoid Oregon 99W congestion.

Paving the estimated two miles of this road as simply a measure to relieve congestion on Oregon 99W would be expensive, and would probably not be cost-effective given the amount of travel that would be diverted. Hence, this project (much like the project on Red Hills and Fairview Roads) would be primarily done to improve Yamhill County’s circulation system, and secondarily to relieve Oregon 99W traffic congestion.

**Recommendation**

It is recommended that spot improvements be made to Fairview Road and Red Hills Road to improve a route that is currently used by local residents as an alternate route to bypass congestion to and from Newberg. These improvements would include re-grading sections that are rutted and laying additional gravel to improve the road surface. It is not recommended for this short term plan that paving be done on this 1.6 mile section of Fairview and Red Hills Roads to further improve this route as an alternate to Oregon 99W congestion. Similarly, it is not recommended for the short term that the 2.0 mile section of Fulquartz Landing Road be paved, due to its marginal benefit as an alternative route to Oregon 99W congestion. Such a measure may be desirable for the longer term, in the event that the Bypass is not constructed within 5-10 years and congestion on Oregon 99W worsens.
## Comparative Travel Times

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<th>Route</th>
<th>Distance (Miles)</th>
<th>Uncongested Time (Min)</th>
<th>Congested Time (Min)</th>
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<td>2.4</td>
<td>3.6</td>
<td>16.6</td>
</tr>
<tr>
<td>Back Roads**</td>
<td>5.5</td>
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<td>Difference</td>
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</table>

* FROM 1st ST/99W IN NEWBERG TO 9TH/99W IN DUNDEE
** 240 TO MORTON TO SUNNYCREST TO FOX FARM RD TO HIDDEN SPRINGS TO RED HILLS TO FAIRVIEW TO WORDEN HILL

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**ALTERNATIVE ROUTES TO DUNDEE**

DUNDEE, OREGON
Summary of Recommendations

Based on the findings of this analysis, especially with regard to the feasibility of solutions, the following measures should be considered for implementation to mitigate short term traffic congestion on Oregon 99W through Dundee:

- Construct a traffic signal at 10th Street in conjunction with the realignment of 9th to 10th.
- Construct intra-city connectivity improvements, parallel to Oregon 99W to facilitate local movements within Dundee including: a connection between 5th Street and 7th Street on the hill-side of the highway, and a connection between 3rd Street and 10th Street on the river-side of the highway.
- Utilize Intelligent Transportation Measures including the use of ODOT Traffic Cameras (ODOT’s TripCheck website) and Driver Advance Warnings.
- Construct spot improvements on Fairview Road and Red Hills Road including grading and additional gravel. A longer term project may include paving of this 1.6 mile section of Fairview and Red Hills Roads.
- Implement commuter bus service improvements within the Oregon 99W corridor, as recommended by ODOT and the Yamhill County Transportation Committee.
- As a longer term project (5 to 15 years), pave the 2.0 mile section of Fulquartz Landing Road to provide an alternate “back road” route to Oregon 99W congestion and to improve Yamhill County’s roadway system. This project could be completed sooner, depending on when funding is obtained.
- As a longer term project (5 to 15 years), pave the 1.6 mile section of Fairview and Red Hills Roads to provide an alternate “back road” route to Oregon 99W congestion and to improve Yamhill County’s roadway system. This project could be completed sooner, depending on when funding is obtained.

Next Steps

This report has been reviewed by the City of Dundee and Yamhill County public works staffs, and their comments have been considered and incorporated, where appropriate. A second public meeting was held to solicit input on the draft report. Subsequent to this meeting, this final report is now published responding to comments received. Next, the City of Dundee and Yamhill County Transportation System Plans will be reviewed, and if needed, amendments will be prepared to carry out the recommendations of this Interim Measures Plan. Public hearings will be held in Dundee and Yamhill County to consider adoption of these TSP amendments.
Appendix A

Summary of Conclusions and Recommendations
## Appendix A
### Summary of Conclusions and Recommendations

<table>
<thead>
<tr>
<th>Potential Interim Solutions</th>
<th>Disposition as of September 2005</th>
<th>Original Reasons for Dismissal or Acceptance</th>
<th>ODOT Recommendation</th>
<th>Discussion</th>
</tr>
</thead>
</table>
| Five-lane Cross-Section     | DISMISSED during Dundee TSP process and in the N-D Bypass Goal Exceptions document and eliminated from further consideration | • Too large of an impact on the Dundee community both from a traffic volume and roadway width standpoint  
• Not acceptable as long term solution  
• City does not want it to become a long term solution | Not Recommended | • Five lanes (either parking or travel lanes) would require substantial acquisition of right-of-way with severe impacts on local businesses;  
• Five lanes on Oregon 99W is inconsistent with the Goals and Vision Statement that has been adopted by the City of Dundee;  
• Five lanes would temporarily alleviate congestion in Dundee, but because it would eliminate the need for the interchange between Newberg and Dundee, it would not substantively reduce long-term projected average daily traffic on OR 99W.  
• Because of the higher traffic volumes and wider roadway, long-term livability in Dundee would be negatively affected as would the City’s ability to meet its adopted community vision.  
• Construction of Five lanes would be very costly (est. $50 Million to widen through Dundee to McDougal Corner) as an interim project and would not likely be completed prior to construction of the Bypass. |
| Four-lane Cross-Section with Jughandles and Loop Connections | Found to be unacceptable during Dundee TSP process | • Requires continuous median, limiting access to business along OR 99W  
• Could not be accomplished within existing ROW; would require additional ROW acquisition and land impacts  
• Jughandles/loop connections will negatively impact businesses and require too much ROW | Not Recommended | • There is insufficient right of way to build 4 lanes. Thus, accomplishing the four-lane section on Oregon 99W would constitute a substantial and costly construction project.  
• A median would be necessary if any additional capacity is to be gained from the additional lanes. Since the required center median would prohibit all left turns on Oregon 99W through Dundee, this solution would have a substantial negative impact to businesses.  
• The required widening and jughandles would require a significant amount of ROW, which would also have a negative impact on businesses. Accordingly, the DTAC dismissed this alternative during the Dundee TSP process due to the negative impacts to businesses on Oregon 99W. |
| Sunken Grade on Oregon 99W | Found to be unacceptable during Dundee TSP process | • Not an interim solution--if constructed, it would be in place permanently  
• Costs of suppressing road would be much higher than widening and are likely prohibitive  
• Does not support adopted downtown vision  
• Traffic and related negative consequences like air and noise pollution remain high in Downtown Core | Not Recommended | • Elimination of the signal at 5th St. will provide only an estimated 10-15% additional capacity, and Oregon 99W is approximately 30-40% over capacity. Hence, this measure would not fully mitigate congestion.  
• Construction of a grade-separated crossing of Oregon 99W at 5th Street – whether it is over or under - is a major construction project that would take a minimum of five years to plan, design and construct—making it a long-range solution.  
• An over-crossing of Oregon 99W at 5th Street would have a significant visual and environmental impact on this area of Dundee that would be too great for an interim solution.  
• Also, the over-crossing, ramps would have a major blighting impact on inner-city properties adjacent to them, due to restricted access and visibility. |
| Reversible Lanes on Oregon 99W | Found to be unacceptable during Dundee TSP process | • Cost and feasibility issues  
• Not enough directionality (see footnote 3, p.12) in traffic flow to support its effectiveness  
• Residential and business access issues | Not Recommended | • There is not enough difference in the directionality of traffic to make this alternative effective. Traffic volumes are sufficiently high in both directions during both the morning and evening to dictate the need for two through travel lanes of capacity in both directions.  
• The center left turn lane would have to be converted into a second through travel lane11. This would require that left turns in either direction be handled in a “jughandle” manner with the same problems all 4 lanes. |

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11 The term “directionality” refers to the flow of traffic in one direction as compared to the other during a given peak hour. In the case of Oregon 99W through Dundee, one would expect that there would be substantially greater traffic headed from the Portland metropolitan area toward McMinnville during weekday p.m. peak hours; however, during typical weekday p.m. peak hours, the directional flow is not nearly as “directional” as expected. Of the total traffic on Oregon 99W in Dundee, approximately 55% is headed southwesterly, while 45% is headed northeasterly.  
11 In order to gain a second lane of capacity on Oregon 99W through Dundee without significantly widening the street, either the center left turn lane would need to be converted or the two 5-foot bike lanes would need to be eliminated. It would present an unsafe condition if the two bike lanes were eliminated, because pedestrians would be exposed to through traffic without a “buffer”. The five feet that is currently dedicated to the bike lane effectively buffers the pedestrian from through travelers, in addition to providing space for bicyclists.
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<tbody>
<tr>
<td>Relocation of Downtown Dundee</td>
<td>Found to be unacceptable during Dundee TSP process</td>
<td>• Not consistent with Dundee adopted Vision</td>
<td>Not Recommended</td>
<td>• The Downtown Oregon 99W Refinement Committee determined that this idea was not feasible and that Dundee’s town center should remain on Oregon 99W, centered between about 5th and 10th Streets.</td>
</tr>
<tr>
<td>One-way Couplet Oregon 99W &amp; Maple Oregon 99W &amp; Linden Lane. OR 99W &amp; New St. northwest of WPRR</td>
<td>Found to be unacceptable during Dundee TSP process</td>
<td>• Land use impacts too great (30 houses on Maple St.; impacts houses and school/park complex on Linden Lane; businesses displaced alongside WPRR) • Cost and feasibility issues</td>
<td>Not Recommended</td>
<td>• As with the five-lane cross-section, the couplet would eliminate the need for the interchange between Newberg and Dundee but without the interchange, 25,000 to 30,000 ADT would still use the Oregon 99W corridor in Dundee. However, this concept should be considered by Dundee as a long-range project - in addition to the Bypass. • An increase in the “barrier effect” of Oregon 99W through Dundee by widening its corridor to two streets each carrying traffic levels of about 15,000 vehicles per day, rather than one carrying 30,000 vehicles per day. • An unacceptable impact on adjacent residents and businesses within close proximity to the new couplet street, due to traffic volume and noise. • Would have significant cost beyond what can be reasonably expected to be funded for an interim solution.</td>
</tr>
<tr>
<td>Dayton-Edwards connection</td>
<td>Recommended in Dundee TSP after the Bypass is completed</td>
<td>Improves routes for Yamhill County residents to travel between cities without relying on Oregon 99W, but neighborhood impacts too severe.</td>
<td>Not Recommended until after the Bypass is completed</td>
<td>• The Dundee TSP states that, due to neighborhood impacts, this connection should not be implemented until after the Bypass is completed.</td>
</tr>
<tr>
<td>Commuter Rail</td>
<td>Found not to be cost effective in NDTIP LEIS</td>
<td>Both signals will improve local circulation and disperse traffic, but will only minimally, at best, reduce Oregon 99W congestion</td>
<td>Recommended</td>
<td>• Will facilitate local off-highway traffic circulation • Signal not currently warranted</td>
</tr>
<tr>
<td>Commuter Bus Service</td>
<td>Found to be inadequate solution by itself in NDTIP LEIS, but is being considered as potential element of corridor transportation package</td>
<td>Low ridership does not warrant high capital and operating cost; does not mitigate need for Bypass</td>
<td>Not recommended</td>
<td>• Rejected as a stand-alone alternative to the Bypass in the NDTIP LEIS, due to low ridership and high cost ($112 million in 1997 dollars).</td>
</tr>
<tr>
<td>Commuter Rail</td>
<td>Recommended in TSP and Main Street Refinement Plan</td>
<td>Both improve local streets parallel to 99W, thereby reducing Dundee residents’ reliance on the highway; minimally effects 99W through traffic capacity</td>
<td>Both Recommended</td>
<td>• Both feasible for local traffic, but need funding.</td>
</tr>
</tbody>
</table>
Appendix B

Existing Physical and Operational Conditions
Appendix B

Existing Physical & Operational Conditions of Oregon 99W through Dundee

Currently, Oregon 99W through Dundee has from 45-48 feet of paved surface. In the downtown core of Dundee (5th to 10th), the right-of-way is generally 60 feet, widening to 100 feet outside the downtown core. Oregon 99W is currently striped for three lanes with bike lanes/shoulders (11-foot travel lanes, 13-16 foot center turn lane and 5-foot bike lanes). There are curbs in some sections, although most blocks do not have curbs. In the downtown core, there generally are six-foot sidewalks, but outside the downtown core there are generally no sidewalks. Drainage is accomplished by ditches in some sections and curbs retaining the water on the street in other sections. Overhead electrical transmission lines provide power to uses in the corridor.

Within the downtown core area (between 5th and 10th Streets), the 60-foot right-of-way (ROW) is virtually fully occupied by improved street (48 feet) and sidewalk (six feet each side). Widening of the street beyond this cross-section will require additional ROW.

Oregon 99W through Dundee carries nearly 30,000 vehicles per day on a typical weekday – the highest volume for a three-lane highway in the state highway system. The 5th Street traffic signal on Oregon 99W operates at level-of-service “F” (indicating “failure”), a volume-to-capacity ratio in excess of 1.00 (indicating an “over-capacity” condition), and with average delays in excess of 50 seconds during the weekday p.m. peak period. Fifth Street is currently the only traffic signal within Dundee – all other streets that provide local access to Oregon 99W are unsignalized and operate over capacity and at level-of-service “F,” with long delays for the minor street approaching vehicles.

Oregon 99W has constricted capacity through Dundee in two critical ways:

- Oregon 99W has reduced lane capacity approaching Dundee from the northeast. East of Dundee, traveling southwest from Newberg, Oregon 99W has four travel lanes (two each direction) as it approaches Dundee. Prior to the Fox Farm Road intersection, Oregon 99W narrows into two travel lanes with only a single lane in each direction. The second way that the capacity of Oregon 99W is constricted in Dundee is the presence of the traffic signal at 5th Street.

- The traffic signal, while being necessary to facilitate local Dundee traffic to turn onto, off of, or cross the highway, significantly diminishes the highway’s capacity for through traffic (The presence of a traffic signal at 5th Street not only facilitates traffic movements onto Oregon 99W at that location, but by “platooning” through traffic it also creates “gaps” for side street traffic at unsignalized intersections up and down stream).

The combination of these two factors reduces capacity on the highway to the point that traffic in each direction backs up for ¼ to ½ mile in each direction from the 5th Street traffic signal for 2-3 hours on a typical weekday. On weekends, the backup can extend for more than a full mile. The consequences of traffic congestion on Oregon 99W are felt every day through increased freight costs and long delays to weekday and weekend through-travelers.

Kittelson & Associates, Inc. Portland, Oregon
**APPENDIX C**
**Dundee Ore 99W Interim Measures Plan**
Comments Received at or after August 3, 2006 Public Meeting at Dundee Elementary School

<table>
<thead>
<tr>
<th>NAME</th>
<th>COMMENT</th>
<th>RESPONSE</th>
</tr>
</thead>
</table>
| Joni Zimmerman 1101 W. Sheridan Newberg, Oregon 503-538-9227 joni@frenetic.com | 1. No Bypass.  
2. No Bypass.  
3. No Traffic lights – they are designed to stop traffic (that’s why they are called “stop lights” (not “go lights”)), whereas roundabouts keep things moving. Several solutions possible for pedestrians (call me and I’ll tell them to you).  
4. Roundabouts – 1 or 2 in Dundee, some in Newberg  
5. Four lanes through Dundee combined with roundabouts, steer side traffic to roundabouts.  
6. What about trains? | 1 and 2. Bypass EIS is underway; this interim measures project is independent.  
3. An additional traffic signal at 10th Street is recommended, and would be coordinated with the existing 5th Street signal to minimize Ore 99W delay.  
4. Roundabouts have been considered and dismissed because: 1) they are not a short-term solution, and; 2) they are not the appropriate solution due to land use impacts and poor overall applicability in this section of Ore 99W.  
5. This solution is not a short-term solution, and therefore has been dismissed.  
6. Commuter trains were considered in the NDTIP LFEIS, and were found to not have a significant effect on reducing traffic congestion due to limited projected ridership. |
| Rich Logghe 1101 W. Sheridan Newberg, Oregon 503-538-9227 rich@logghe.org | 1. Make 99W four lanes like it should have been long ago.  
2. Make a bridge east across to Aurora Exit from I-5. 99W is a bottle-neck from whole Yamhill County to Portland.  
3. Use roundabouts on both ends of Dundee. No lights, no left turns, no cross traffic. Pedestrian overpass bridges.  
4. No Bypass. | 1. This option was considered and dismissed due to land use impacts and in recognition that it is not a short-term solution.  
2. The Regional Bypass Alternative was dismissed in the NDTIP LFEIS.  
3. See #4 above.  
4. See #1 and 2 above. |
| Bill Zuiches | The proposed Bypass interchange to 99W – can it be made to allow westbound traffic to feed off onto a back street (1st) and be built for future Bypass usage with minimal changes to the interchange? In effect – get local traffic off of 99W. | The purpose of this project is to develop short-term solutions to address traffic congestion before the Bypass is constructed; in recognition that this alternative could not be implemented in the short-term, it was dismissed. |
| Mike Ragsdale | The paving of the 1.6 mile Fairview/Red Hills section should be short-term, not long-term. | This comment will be forwarded to Yamhill County, and will be duly considered by ODOT in its next steps. |
| Kay & Tom | There are only negative ideas presented tonight. Are there any positive | |


<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edwards</td>
<td>P.O. Box 455</td>
<td>solutions?</td>
</tr>
</tbody>
</table>
| Marc Dochez                   | Cameron Winery P.O. Box 4        | 1. Interim: Couplet along Maple looks good.  
2. Interim: Overpass at Fifth Street may be a long-term solution, but it would solve a lot of problems.  
3. Bypass: NE Dundee overpass over the tracks and Ore 99W should not end in a signal. On and off ramps from Dundee and to Newberg would keep traffic from crossing Ore 99W twice to get to their destination. If this signal is a must, then consider making allowance for on-ramps at a later time. This probably would require gently curving 99W northwesterly at the overpass. |
| Jason Steve                   | Resident 1176 SE Cedar St.       | 1. Dismissed due to land use impacts.  
2. Yes, we agree that this would only be considered as a long-term solution.  
3. Direct ramps to the connector road to facilitate northbound-to-eastbound on movements and westbound-to-northbound off movements have been included as “long-range” projects to be considered in the East Dundee Interchange Area Management Plan process. |
|                              | Dundee, OR 503-538-6217          | I believe that the City Council needs to reevaluate its ideals on what the downtown interim should look like. I’ve heard several comments supporting a couplet along Maple Street to alleviate the congestion on Ore 99W in Dundee. I believe that they should start expanding their commercial zoning that will help accommodate the couplet further and think about recessing the railroad or side streets to make connecting from one side of the City to the other more feasible. I support having lights (stoplights) in the City when they are properly timed/sequenced. I agree with the realignment of 9th/10th, and Niederberger-Parks. I don’t think the bypass is as essential to Dundee’s downtown business as the Council believes and that they should reevaluate the idea of the heavily supported couplet along Maple Street (heavily supported by those attending project meetings). |
|                              | Icer0@aol.com                    | A one-way couplet on Oregon 99W through Dundee has been dismissed as an interim solution, due to high cost and land use impacts. In addition, a one-way couplet was dismissed as a long-term solution in the NDTIP Design Draft EIS and the Dundee TSP. |
Janis Timlick  
10990 NE Paren Springs Rd  
Dundee  
503-538-8241  

I am very disappointed with the recommendations for Interim Traffic Relief on Highway 99 through Dundee that was distributed at the August 3, 2006 meeting. We reviewed all the previous alternatives at the January meeting. We were told they were all back on the drawing board along with any additional alternatives that could be developed. However, today's report simply reiterates the previous findings, including dismissing all reasonable options.

Living on Paren Springs Road, I am very familiar with the Red Hills option. This is not a case of "not in my backyard." The Sunnycrest/Red Hills option is not safe. It is a narrow country road. It has three dangerous "S" curves. People frequently drive blindly in the middle of the roadway around those curves. There are no shoulders. Many driveways enter the roadway at places with very low visibility. There are many pedestrians, runners, and bikers that also use the roadway. The plan did not address the need to widen the roadway or straighten curves to make this road safe. Although the issue was addressed in the printed comment section, third page. The plan only recommended issues related to the Red Hills section of the roadway.

In addition, relying on the back streets, although helpful to local residents, will not help the traffic congestion for the people traveling through Dundee to other locations.

Finally, new businesses and old will not be able to be successful in Dundee as long as this traffic continues. Talk to the business owners. Finding a realistic solution is critical to the well being of this town. I am disturbed that this study resulted in so little. We should be able to think outside the box. Visit other small towns. There are beautiful towns with boulevards through the center of town that could serve as examples of what could be done. Coronado, California is just one that we visited this summer on a 4350 mile road trip. Things can be done. Again, I am disappointed that so much time has been spent waiting for this recommendation which will realistically do very little to solve the initial problem, and only create additional safety concerns for the residents of our community.

Regretfully, it is the collective judgment of ODOT and the Dundee City Council that there are no solutions that are feasible at this time. In addition, the many opportunities for public and committee input did not produce solutions on Oregon 99W that would substantively improve traffic flow.

Regarding the safety issues you raise regarding the Sunnycrest/Red Hills measure: ODOT is always concerned with safety; however, this plan was not intended to address all the possible safety and engineering issues involved in the ideas evaluated. If this measure is funded and implemented, specific safety issues will be addressed by the project design team and your comments on safety will be considered.

With respect to redesigning Oregon 99W through Dundee to be a “boulevard”, we are not necessarily in the same position as other towns that may have built beautiful boulevards. The Oregon 99W Main Street Refinement Plan for Dundee addresses pedestrian and other amenities that can be implemented after the Bypass is built and traffic on the highway is reduced. Thus, in the long-range future, we believe that plan will enable Oregon 99W in Dundee to take on many of the characteristics you desire.

I sent my comments last night, but had one additional thought. When did you make you time runs? I walk in the morning between...
| Springs Rd Dundee 503-538-8241 | 6:30 and 7:30 before heading to work, oftentimes returning home in the 3-4 o’clock hour. During the school year there is also the school bus that slows down the traffic. I frequently witness drivers passing school busses and bicyclists in reckless fashion during these hours. I would also suggest we get a speed monitor at the north end of Sunnycrest through the bridge area. I have been with people traveling in the 50 mph range through that dip during the evening commute time. Safety must be a primary concern with any travel recommendations and I am concerned these issues were not addressed. I do not know what conditions exist on the other alternatives and would defer to the residents of those areas for first hand knowledge. | be addressed by the project design team and your comments on safety will be considered. |
Public Open House Summary
Thursday, January 12, 2006, 6:30-8:45 p.m. at Dundee Elementary

Individual Comments

Jack Kris—Newberg: “Dundee needs to put many of their rejected options back on the table. Ideas such as Dayton/Edwards connection, one-way couplet, or depressed 99W will need to be reconsidered within a few years of completion of the bypass anyway. Alan Fox says bypass will take 55-60% of 2025 year traffic, which is projected to be 55-60,000 trips. Dundee currently has 30,000 trips per day; Dundee still has 22-25,000 trips in 2025 anyway, putting it back to where it is now.”

Response: The Plan has reconsidered all of these options, and determined them to be unacceptable based on the City’s goals and vision.

Alice Ochse—Dundee: “Use the empty land around 5th Street/99W intersection to improve traffic flow (i.e. merging, pedestrian overpass).”

Response: Not sufficient space at intersection to facilitate interchange; pedestrians can cross at signal without needing more space.

Chuck Morris—Dundee: “With traffic as bad as it is on 99W, more cars are using Fox Farm Road. Sometimes we can’t get out on 99W at all, Friday and Sunday evenings especially. Some of the traffic on Fox Farm is speeding at 60-65 mph, and passing on this road. It’s supposed to be a 35 mph road. We need a policeman posted there at different times of the evening. Also, a stop light at the end of Fox Farm as it goes into 99W (four-way) would help a lot. I really hope this bypass is built in my lifetime. We were talking about this same thing 30 years ago. I have been a resident of Dundee since 1961 (Kennedy was president).”

Response: Regarding enforcement of speeds on Fox Farm Road; Yamhill County law enforcement has been notified. Regarding a stop light at Fox Farm/Ore 99W intersection; it is being planned in this general location as part of the Bypass Connector Road intersection with 99W.

Dee Banuels—Lafayette: “ODOT traffic cameras installed to show congestion from Duck Pond Cellars all the way to Calamity Jane’s restaurant. Your internet site shows roads highlighted in different colors. How about a Dundee camera on the Internet? Warn drivers to bypass Dundee. I commute from Lafayette to Tigard daily.”

Response: Plan recommends inclusion of web reports about Ore 99W congestion in Dundee.

Marc Dochez—Dundee: “We have the ability to do this right or we have the ability to pretend we’re doing something to solve the congestion and not really do it. Stopping cars on 99W will NOT fix the problem! Getting cars to drive unimpeded through Dundee WILL go a long way to fixing the 15-minute wait to get through our town. An overpass (innerchange) at 5th street will allow local traffic to get on, off, or cross 99W and allow a smooth flow through Dundee. We are told by ODOT that once the bypass is built Dundee will be a different place and we’ll be glad to have four stop lights through town (Fox Farm-Dayton, 5th, 9th/10th, and Niederberger-Parks). The signals will be “synchronized” to flow smoothly. Synchronized signals only work on a one-way grid. Those of us who don’t want to pay several dollars to ride on the tollway bypass will be stuck waiting for four lights. I myself don’t like to wait for red lights. I would rather drive a few blocks to go on an overpass. Presently, three of the four corner lots at 5th/99W are for sale. ODOT and/or the City could purchase these. If we reconfigure or better yet rebuild the school gym, enough room is available for an overcrossing and on-ramps. This is not the easiest, quickest, or cheapest solution, but in both the long and short run it is the best solution. Even after the bypass is built, thousands of people a day will still want to enter or cross 99W in Dundee, and this will be the safe and simple way to do it.”

Response: Too costly and construction would take too long to constitute a short term solution.

Janis Timlick—Dundee: “The only plan that seems to make sense to me is the 5 lane right away with 2 lanes in each direction with a center turn lane FOR NOW. When the bypass is completed, turn the outside lane into parking to conform with the Dundee vision. That would also leave open the possibility to expand the roadway back to the 2 x 2 plan, should the bypass and 99 fill up in the long range future. I would like to see that plan revisited seriously. It makes sense for now and in the future and had the support of most of the people that cared enough to come to the meeting.”

Response: Too impactive to adjacent land uses, because right-of-way is not sufficient to construct five lanes. Not consistent with the Goal Exception, which states that 99W would not be five lanes. Not a short-term solution.
Group Comments

Group Leader: Anthony Yi
"Need under or overpass of 99W"
Not a short term project
"Five-lane cross-section"
Not a short term project
"Pedestrian bridge"
Not necessary
"If three-lane section is the only acceptable solution, then there should be no raised medians (too restrictive to commercial businesses or emergency vehicle access.)"
Point well taken; there will be no raised medians in short-range plan.

Group Leader: Julia Kuhns
"Reconsider five lanes through Dundee"
We did
"Reconsider one-way couplet on Maple Street or west of railroad"
We did

Group Leader: Kevin Lee
"Install ODOT cameras on 99W and include this information on ODOT’s Trip Check website. This would enable motorists to find out in advance when there is congestion in Dundee, and take alternative routes to avoid it."
Recommended in Plan

Group Leader: Eve Dolan
"Reconsider four-lanes (with jug handles) through City with no left turns, with additional signals at designated locations (10th Street)"
We did
"Consider overpass [interchange] at 5th Street and remove the signal"
We did
"Reconsider the Regional Bypass (thereby entirely bypassing Dundee of regional through travel)"
Regional Bypass was dismissed in the Locational Final EIS for the Bypass
"Reconsider one-way couplet on Maple Street"
Not a short-term solution, and too impactive to adjacent neighborhoods.
"This is America—the greatest country in the world. Do something to relieve congestion -- not everything can be unacceptable."
We have recommended a number of mitigations that will help Dundee residents get around the congestion before the Bypass.

Group Leader: Bill Ciz
"Use railroad right-of-way for one-way couplet"
Not a short-term solution -- too costly and impactive to adjacent land uses.
"Improve 5th Street/99W intersection and add pedestrian overpass"
"Four lane 99W [with jug handles] through Dundee"
Not sufficient ROW, and widening would impact neighboring land use; also, not consistant with City's vision to widen this intersection.
"Add signal at 1st Street for better Dundee circulation"
Considered, and intersection improvements addressed in Main Street Refinement Plan.
"Add signal at 10th Street for better Dundee circulation."
Recommended in Plan.
"Reconsider couplet on Maple Street, and change zoning east of 99W to commercial"
Not a short-term solution -- too costly and impactive to adjacent land uses.
"Pave Red Hills, Worden Hill and Warren Roads to facilitate improved ways for locals to bypass 99W congestion"
Recommended in Plan
"Install ramp meter for entering traffic coming from Newberg where 99W narrows to one westbound lane from two"
Considered, and dismissed

Group Leader: Dan Seeman
"Pave Warren Road (currently gravel) to Red Hills Road (straighten out terrible curve) to provide better route to Newberg."
Recommended in Plan.
"Provide alternative bike route off of 99W."
Ore 99W already has bike lanes.
"Pave Fullquartz Landing Road to Edwards, to provide better alternative route from McMinnville past the 5th Street signal"
Recommended in Plan
"Increase efforts toward ridesharing, especially to better facilitate work trips between McMinnville & Newberg"
Use County's existing rideshare program
"Connect Dayton-to-Edwards connection, but somehow restrict it for local resident use only (i.e. issue magnetic cards to activate gates for Yamhill County residents only)"
Not feasible
"In conjunction with construction of the Bypass, move the railroad away from town."
Not a short-term solution -- too expensive and impactive to adjacent land uses
Public Open House Summary
Thursday, January 12, 2006, 6:30-8:45 p.m. at Dundee Elementary

General Observations

"The majority of attendees felt that increased capacity on 99W through Dundee is needed, although most (not all) acknowledged the City's (and ODOT's) unwillingness to widen to five lanes."

Widening to five lanes not a short-term solution, and not consistent with City's goals and vision

"There seems to be some support for four-lane 99W with jug handles, given that it would require relatively little widening over the existing cross-section."

Not a short-term solution -- to expensive and impactive to adjacent land uses.

"There was much support for providing an alternate route for locals by improving Warren, Worden Hill, and Red Hills Roads for travel from Dundee to Newberg. Improvements to these roads would include some paving, and realignment of sharp, dangerous curves."

Recommended in Plan

"Paving of Fullquartz Landing Road was also mentioned, to better facilitate an alternate route from McMinnville/Lafayette through Dundee."

Recommended in Plan

"Most attendees felt that something needs to be done to improve the capacity of the 5th/99W intersection, either by adding lanes or building a grade-separated intersection (i.e. overcrossing or interchange)."

Not a short-term solution -- to expensive and impactive to adjacent land uses

"Many attendees felt that a pedestrian bridge would benefit pedestrians to cross 99W at 5th Street."

Not needed in short-term, too expensive to constitute an interim solution
Appendix D

ORE 99W Roundabout

• Footprint
• Design Characteristics
### Exhibit 1.2: Basic design characteristics for each of the six roundabout categories.

<table>
<thead>
<tr>
<th>Design Element</th>
<th>Mini-Roundabout</th>
<th>Urban Compact</th>
<th>Urban Single-Lane</th>
<th>Urban Double-Lane</th>
<th>Rural Single-Lane</th>
<th>Rural Double-Lane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommended maximum entry design speed</td>
<td>25 km/h (15 mph)</td>
<td>25 km/h (15 mph)</td>
<td>35 km/h (22 mph)</td>
<td>40 km/h (25 mph)</td>
<td>40 km/h (25 mph)</td>
<td>50 km/h (30 mph)</td>
</tr>
<tr>
<td>Maximum number of entering lanes per approach</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Typical island diameter</td>
<td>13 m to 25 m (45 ft to 80 ft)</td>
<td>25 to 30 m (85 to 100 ft)</td>
<td>30 to 40 m (95 to 130 ft)</td>
<td>45 to 55 m (155 to 180 ft)</td>
<td>40 to 40 m (135 to 135 ft)</td>
<td>55 to 60 m (185 to 200 ft)</td>
</tr>
<tr>
<td>Splitter island treatment</td>
<td>Raised, if possible, crosswalk cut if raised</td>
<td>Raised, with crosswalk cut</td>
<td>Raised, with crosswalk cut</td>
<td>Raised, with crosswalk cut</td>
<td>Raised and extended, with crosswalk cut</td>
<td>Raised and extended, with crosswalk cut</td>
</tr>
<tr>
<td>Typical daily service volumes on 4-lag roundabouts (veh/day)</td>
<td>10,000</td>
<td>15,000</td>
<td>20,000</td>
<td>Refer to Chapter 4</td>
<td>20,000</td>
<td>Refer to Chapter 4</td>
</tr>
</tbody>
</table>

1. Assumes 90-degree entries and no more than four legs.
Appendix E

Short Term Improvement Plan Framework
### Dundee Oregon 99W Interim Measures Plan
#### FRAMEWORK FOR PUBLIC INVOLVEMENT

<table>
<thead>
<tr>
<th>Activity</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td>Initiation meeting with ODOT, City/County representatives</td>
<td>Thurs, July 7</td>
</tr>
</tbody>
</table>
|   • Discuss project goal – *to reduce congestion on OR 99W in Dundee until the Bypass is constructed*  
|   • Discuss public involvement effort                                    |                       |
| Review Framework for Public Involvement with ODOT Region 2 Management, Diane Ragsdale, Leslie Lewis and Dave Haugeberg | Sept 15               |
| Review Technical Memorandum with Yamhill County Parkway Committee and Road Improvement Advisory Committee | Sept 15, Oct 13       |
| Present Framework to POST                                               | Fri, Sept 16          |
| Prepare Background Technical Memorandum summarizing document review and history of 99W solutions and distribute to Dundee Interim Solutions Team (DIST) | Wed, Nov 9           |
| Initiation Meeting with DIST                                            | Tues, Nov 29          |
|   • Present review of relevant studies, plans (Dundee, Newberg and Yamhill County TSPs, OR 99W Main Street Refinement Plan, NDTIP LDEIS and Goal Exceptions)  
|   • Present Potential OR 99W solutions that have been considered, their benefit/cost, current disposition  
|   • Solicit feedback and new ideas                                       |                       |
|   • Discussoplan Public Meeting #1                                       |                       |
| Revise Technical Memorandum to reflect input from DIST                  | Wed, Dec 5            |
| Meeting with ODOT, City/County representatives and political representatives | Fri, Dec 7             |
|   • Discuss viability of alternative solutions to be considered         |                       |
|   • Identify new alternative solutions                                   |                       |
| Public Meeting #1                                                       | Thurs, Dec 15         |
|   • Present review of relevant studies, plans                            |                       |
|   • Present Potential 99W solutions that have been considered, their benefit/cost, current disposition  
|   • Define “sideboards” (decisional constraints)                         |                       |
|   • Solicit feedback and new ideas                                       |                       |
|   • Meeting Format                                                      |                       |
|     o Town hall opening (1st ½ hour), then provide opportunity for individuals with concerns/ideas/input to talk to technical experts one-on-one after formal meeting  
|     o Opening will be to: introduce mayors, representatives from cities, county, present background  
|     o ODOT (Terry Cole) to define position on 5-lane option through Dundee vis-à-vis Goal Exception process  
|     o Technical ODOT and consultants to be available after formal presentation to work one-on-one  
|     o Discuss next steps with larger group                               |                       |
|     ▪ Incorporate input into a Preferred Plan                             |                       |
|     ▪ Present Preferred Plan to DIST & Public                           |                       |
| Prepare Technical Memorandum #2: Concept Evaluation                     | Friday, Jan 13        |
|   • Evaluate new concepts identified in DIST or Public Meeting #1, and   |                       |
compare them to performance thresholds and goals and visions adopted by Dundee.

- Based on this analysis (to include estimated costs), develop Preferred Alternative
- Document analysis, evaluation, findings and recommendations in technical memorandum

<table>
<thead>
<tr>
<th>Task Description</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present Technical Memorandum #2 to DIST</td>
<td>Thurs, Jan 19</td>
</tr>
<tr>
<td>• Solicit input</td>
<td></td>
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<tr>
<td>• Refine Preferred Alternative</td>
<td></td>
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<tr>
<td>• Revise technical memorandum for presentation at Public Meeting #2</td>
<td></td>
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<tr>
<td>Present Tech Memo #2 to Yamhill Co. Commissioners, Road Improvement Advisory Committee, and Parkway Committee</td>
<td>Fri, Jan 20</td>
</tr>
<tr>
<td>Public Meeting #2</td>
<td>Thurs, Aug 3</td>
</tr>
<tr>
<td>• Present Preferred Plan for Interim Solutions to OR 99W congestion</td>
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<tr>
<td>Finalize Report</td>
<td>Thurs, Aug 17</td>
</tr>
<tr>
<td>• Incorporate contents of Tech Memos #1 and #2</td>
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<tr>
<td>• Add response to new ideas from Public meeting #2 in body of report, including revisions to graphics as needed</td>
<td></td>
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<tr>
<td>• Add appendix Public Meeting #2 Comments with response column added</td>
<td></td>
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<tr>
<td>Adopt Recommendations</td>
<td>Dates vary</td>
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<tr>
<td>• Present findings to Bypass stakeholders as directed by Area 3 Manager</td>
<td></td>
</tr>
<tr>
<td>• Present any proposed amendments to City/County TSPs, Comp Plans, Development Codes, etc. to include necessary changes to comp plans, development codes, etc.</td>
<td></td>
</tr>
<tr>
<td>• meetings with Dundee City Planning Commission/City Council as necessary</td>
<td></td>
</tr>
<tr>
<td>• meetings with County Planning Commission/Board of Commissioners as necessary</td>
<td></td>
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</table>