PLANNING COMMISSION AGENDA
December 10, 2015 7:00 PM
NEWBERG PUBLIC SAFETY BUILDING
401 EAST THIRD STREET

I. CALL MEETING TO ORDER

II. ROLL CALL

III. PUBLIC COMMENTS (5-minute maximum per person – for items not on the agenda)

IV. CONSENT CALENDAR (items are considered routine and are not discussed unless requested by the commissioners)

1. Approval of November 12, 2015 Planning Commission Meeting Minutes

VI. LEGISLATIVE PUBLIC HEARING (complete registration form to give testimony - 5 minute maximum per person, unless otherwise set by majority motion of the Planning Commission)

1. **TSP Amendments related to the Phase 1 Bypass**
   a. Changes to the road and lane configuration of southbound Oregon 219 from north of the Springbrook Road/Industrial Parkway intersection through the Phase 1 Bypass/Wilsonville Road intersection. RESOLUTION NO. 2015-310

   b. Changing the adopted Oregon 219/Phase 1 Bypass/Wilsonville Road intersection to a "No Thru Traffic" design. RESOLUTION NO. 2015-311

FILE NO.: CPTA-15-002

VII. ITEMS FROM STAFF

1. Update on Council items
2. Other reports, letters or correspondence
3. Next Planning Commission meeting: January 14, 2016 7:00 PM

VIII. ITEMS FROM COMMISSIONERS

IX. ADJOURNMENT

FOR QUESTIONS, PLEASE STOP BY CITY HALL OR CALL 503-537-1240, COMMUNITY DEVELOPMENT DEPT. – P.O. BOX 970 – 414 E. FIRST STREET

ACCOMMODATION OF PHYSICAL IMPAIRMENTS*: In order to accommodate persons with physical impairments, please notify the Community Development Department of any special physical or language accommodations you may need as far in advance of the meeting as possible as and no later than 48 business hours prior to the meeting. To request these arrangements, please contact the Planning Secretary at (503) 554-7788. For TTY services please dial 711.*

NEWBERG PLANNING COMMISSION MINUTES
November 12, 2015, 7:00 PM
PUBLIC SAFETY BUILDING (401 E. THIRD STREET)

Chair Gary Bliss called the meeting to order at 7:00 p.m.

ROLL CALL

Members Present:	Gary Bliss, Chair	Jason Dale
	Philip Smith	Luis Saavedra/student
	Cathy Stuhr	
Members Absent:	Allyn Edwards	Patrick Johnson
	Matthew Fortner	
Staff Present:	Jessica Pelz, Associate Planner	
	Steve Olson, Associate Planner	
	Doug Rux, Community Development Director	
	Bobbie Morgan, Planning Secretary	
	Mayor Bob Andrews, Ex-Officio	

PUBLIC COMMENTS: None.

CONSENT CALENDAR:
Approval of September 28, 2015 Joint Planning Commission and City Council Meeting Minutes and
Approval of October 8, 2015 Planning Commission Meeting Minutes.

PC Cathy Stuhr had changes to the October 8, 2015, minutes. Under the staff report regarding the letter from Thousand Friends, she suggested changing it to, "She discussed a letter from Thousand Friends who were concerned about the employment safe harbor forecast." She also suggested changing a sentence on the bottom of the same page to read, "PC Cathy Stuhr said whatever numbers the City started with they had to know there would not be a challenge."

MOTION: Stuhr/Dale moved to approve the September 28 and October 8, 2015 minutes as amended. Motion carried (3 Yes/0 No).

LEGISLATIVE PUBLIC HEARING: Chair Gary Bliss opened the public hearing at 7:05 p.m.
1. **Comprehensive Plan Amendment– Population Amendments:** Comprehensive Plan amendment to provide updated information in the historic population and population projections sections of the plan.
FILE NO.: CPTA-15-001 RESOLUTION NO.: 2015-309

Call for Abstentions and Objections to Jurisdiction: None.

Staff Report: Associate Planner Jessica Pelz presented the staff report. She explained the changes made to the Comprehensive Plan amendment. One was to update the historic population to be consistent with census data to 2010. Another was under population projections it would reference OAR 66024-30 and how the City would update the Comprehensive Plan with new projections when they were received from PSU in accordance with the new rule. In the meantime, the City would rely on the acknowledged 2012 Yamhill County coordinated forecast for any planning purposes.

Final Comments from staff and recommendation: Staff recommended approval of the resolution.

PC deliberation and discussion of criteria with findings of fact:

PC Philip Smith was concerned about using numbers from 2012 for controversial issues. AP Pelz thought they would be safe as the Statute clearly stated for the interim forecast they could rely on the adopted, acknowledged County forecast.

PC Cathy Stuhr suggested changing the title of the table under the historic population to reflect the correct dates.

PC Philip Smith thought this was an improvement to what had been done previously, especially the policy where everyone would be using the same projection numbers.

Action by the Planning Commission:

MOTION: Smith/Dale moved to approve RESOLUTION NO. 2015-309. Motion carried (3 Yes/0 No).

Chair Gary Bliss closed the public hearing at 7:15 p.m.

ITEMS FROM STAFF:
Associate Planner Steve Olson gave an update on the Newberg Downtown Improvement Plan. He listed the names of the consultant team which brought specialized expertise to the project. There was also a 15 member advisory committee who had met twice. The consultants and staff were working on an existing conditions report and a market conditions report. These reports were almost complete and would be posted on the City's website soon. There would be a Downtown Visioning Workshop on December 9.

Community Development Director Doug Rux gave an update on Council items including America's Best Communities competition and Economic Development Strategy. The Council approved repealing a development agreement with the Gablers and he gave an update on the WestRock acquisition of SP Fiber. On November 2, the Council adopted updates to the Council Rules and agreed to have City email accounts for all City Committee members.

PC Cathy Stuhr commented on the Lane County case regarding emails being subject to the public meetings law.

CDD Doug Rux said that was why they were moving to using City email accounts instead of personal email accounts. He said Chairs of City Committees would start giving the Council quarterly updates in 2016.

AP Jessica Pelz discussed the letter she sent to the Crag Law Center regarding the Wilsonville Road issue. They were going to treat it as a legislative action and it would be on the December 10 agenda.

There was discussion regarding notices for the meeting and getting the word out to the neighborhoods.

PC Philip Smith asked how the changing status of the mill might affect future planning.

CDD Doug Rux replied WestRock announced they were idling the mill. He gave options for how it might be developed in the future. He agreed an argument might be made that there was no need for more industrial land until this land was developed.

ITEMS FROM COMMISSIONERS:
Chair Gary Bliss asked if engineering would be at the next meeting. He also requested a police presence at the meeting. CDD Doug Rux confirmed the City Engineer would be in attendance.

PC Cathy Stuhr wanted to make sure there was a visible timer for public testimony.

Chair Gary Bliss asked about three County Commissioners who met off and on continually but it was not considered a quorum.

CDD Doug Rux answered Counties were in a unique situation as many only had three officials and many of those meetings had to be noticed.

Chair Gary Bliss had a question regarding the Bypass construction and if the City could do something for the nearby residents' complaints regarding ODOT.

Mayor Bob Andrews said that issue had not been brought forward to the Council. It was ODOT's project and he did not know if the City could intervene.

CDD Doug Rux said the Bypass was being built on ODOT's right-of-way and two contractors were doing the work.

Mayor Bob Andrews said there were some Planning Commission terms about to expire and encouraged those members to apply for reappointment or to help staff find replacements.

The next Planning Commission meeting would be held on December 10, 2015.

Chair Gary Bliss adjourned the meeting at 7:41 p.m.

Approved by the Newberg Planning Commission this 10 day of December, 2015.

_____ _____

Bobbie Morgan, Planning Secretary Gary Bliss, Planning Commission Chair

OUTLINE FOR LEGISLATIVE PUBLIC HEARING

Newberg Planning Commission

1. CALL TO ORDER

OPEN THE PUBLIC HEARING, ANNOUNCE THE PURPOSE, DISCUSS TESTIMONY PROCEDURE, AND TIME ALLOTMENTS

2. CALL FOR ABSTENTIONS AND OBJECTIONS TO JURISDICTION

3. STAFF REPORT

COMMISSION MAY ASK BRIEF QUESTIONS FOR CLARIFICATION

4. PUBLIC TESTIMONY

5 MINUTE TIME LIMIT PER SPEAKER (15 MINUTE LIMIT FOR APPLICANT AND PRINCIPAL OPPONENT). SPEAKER GOES TO WITNESS TABLE, STATES NAME & PRESENTS TESTIMONY. COMMISSION MAY ASK QUESTIONS OF SPEAKERS.

A. APPLICANT(S) (IF ANY)
B. OTHER PROPONENTS
C. OPPONENTS AND UNDECIDED
D. STAFF READS WRITTEN CORRESPONDENCE (TIME LIMIT APPLIES)
E. APPLICANT (IF ANY) REBUTTAL

5. CLOSE OF PUBLIC TESTIMONY PORTION OF HEARING

6. FINAL COMMENTS FROM STAFF AND RECOMMENDATION

7. PLANNING COMMISSION DELIBERATION

8. ACTION BY THE PLANNING COMMMISSION

A. RESOLUTION – Usually requires passage of resolution.
B. VOTE – Vote is done by roll call.
C. COMBINATION – Can be combined with other commission action; separate vote on each action is required.

Community Development Department
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Planning Commission Staff Report

Transportation System Plan Amendments – ODOT – Bypass Related

File No.: CPTA-15-002
Proposal: Transportation System Plan amendment for changes to the road and lane configuration of Highway 219 and the Highway 219/Phase 1 Bypass/Wilsonville Road intersection.

Planning Commission Hearing Date: December 10, 2015

Summary of Proposal

The Oregon Department of Transportation (ODOT) submitted an application to the City of Newberg for two proposed Transportation System Plan (TSP) amendments:

1. Changes to the road and lane configuration of southbound Oregon 219 from north of the Springbrook Road/Industrial Parkway intersection through the Phase 1 Bypass/Wilsonville Road intersection. This change is necessary due to further refinement of the construction plans for the Phase 1 Bypass and to address traffic safety concerns. The changes include removing one of the proposed southbound through lanes on Oregon 219 and one of the proposed southbound right turn lanes onto the Phase 1 Bypass. (Resolution No. 2015-310)

2. Changing the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection to a "No Thru Traffic" design. This change is proposed to address traffic safety concerns expressed by the Ladd Hill Neighborhood Association and their coalition. The "No Thru Traffic" design would remove traffic movements from Wilsonville Road onto the Phase 1 Bypass and from the Phase 1 Bypass onto Wilsonville Road. Westbound traffic on Wilsonville Road could only turn right or left onto Oregon 219, and eastbound traffic on the Phase 1 Bypass could only turn right or left onto Oregon 219. (Resolution No. 2015-311)

Discussion

Amendment 1: Changes to the road and lane configuration of southbound Oregon 219 from north of the Springbrook Road/Industrial Parkway intersection through the Phase 1 Bypass/Wilsonville Road intersection

During the final Phase 1 Bypass design process, ODOT reviewed all roadway lane and design configurations presented in the Final EIS Preferred Alternative to make sure all design and operational standards and practices were adhered to and followed. ODOT final design staff reviewed the intersection design and lane configuration on Oregon 219 between Springbrook Road and the Phase 1 Bypass/Wilsonville Road and identified traffic safety concerns due to the substandard merge and weave distance (about 1000 feet) between the two intersections. These concerns centered on Springbrook Road

southbound traffic turning left onto Oregon 219 from the dual left turn lanes being in the correct lane to enter the Phase 1 Bypass or continue south on Oregon 219. ODOT's analysis showed that with two through lanes and two left turn lanes, vehicles could get trapped in the wrong lane and have to make multiple merges to get into the correct lane. There is not enough distance between the two intersections to perform these movements safely. The solution was to remove one southbound travel lane and right turn on Oregon 219, create a dedicated right turn lane onto the Phase 1 Bypass, and direct left-turning vehicles into the correct left turn lane with signage further north on Springbrook Road.

ODOT performed a traffic analysis to understand how reducing the number of lanes affected the traffic performance of the affected intersections. The analysis showed the following:

- The Oregon 219/Springbrook Road/Industrial Parkway intersection would operate at a v/c ratio of 0.75 in the opening year of Phase 1 of the Bypass. This complies with ODOT's mobility standard of 0.80 for the intersection.
- The Oregon 219/Phase 1 Bypass/Wilsonville Road intersection would operate at a v/c ratio of 0.76 in the opening year of Phase 1. This exceeds ODOT's performance standard of 0.65 for this new intersection (as defined by the Highway Design Manual, HDM); however, the intersection would meet the Oregon Highway Plan (OHP) v/c standard of 0.80 for this section of Oregon 219. ODOT felt that the safety benefits associated with minimizing lane changes along Oregon 219 outweighed the need to comply with the HDM standard.

Based on the refined evaluation of operations and safety, ODOT modified the design for Phase 1 to reflect one southbound lane on Oregon 219 rather than the two originally included in the FEIS. In addition to the safety benefits, the Final Design Alternative also requires less right-of-way than the FEIS Alternative, thereby reducing the overall costs associated with the Phase 1 construction.

Staff concurs with this assessment and supports this proposed amendment. The proposed amendment will facilitate safe and convenient vehicular circulation and reduce potential accidents due to the substandard merge and weave. Staff recommends that Planning Commission adopt Resolution No. 2015-310, recommending that City Council adopt the proposed TSP amendment.

Amendment 2: Changing the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection to a "No Thru Traffic" design

The City of Newberg amended its TSP in 2013 to reflect the FEIS Alternative for Phase 1. During the 2013 TSP Amendment approval process, the Ladd Hill Neighborhood Association (LHNA) provided written and verbal testimony against the TSP amendment to reconnect Wilsonville Road to Oregon 219 at the Phase 1 Bypass intersection. LHNA, Clackamas County, and the City of Wilsonville expressed concerns that a through movement connection would raise the potential for increased traffic on Wilsonville Road. The group believes Wilsonville Road will be used as a new route to get to I-5 from Oregon 219 in Newberg and that the additional traffic will cause additional safety problems along Wilsonville Road between Newberg and Wilsonville. As part of the 2013 TSP Amendment, ODOT committed to installing specific signage that would discourage traffic from using Wilsonville Road and to provide ongoing traffic monitoring to ensure that no unanticipated impacts occur once Phase 1 of the Bypass is open to traffic.

Following approval of the TSP amendment in 2013, ODOT and LHNA have continued to investigate solutions to the LHNA concerns regarding the use of Wilsonville Road as a new route to get to I-5 from

Oregon 219 in Newberg. Clackamas County and the City of Wilsonville have also continued to express similar concerns about increased traffic on Wilsonville Road to ODOT and support development of a reasonable design alternative that limits traffic on Wilsonville Road. As noted in the last TSP amendment, the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection is an interim connection that is within the footprint of the Bypass and the Oregon 219 Interchange as shown in the Newberg Comprehensive Plan and TSP. When the full Bypass and Oregon 219 Interchange are built in a future phase, Wilsonville Road will be rerouted south to connect to Oregon 219 near Wynooski Road. The Oregon 219/Phase 1 Bypass/Wilsonville Road intersection will remain in place until such time as the Bypass and the Oregon 219 Interchange are funded and constructed.

In response to the concerns raised by LHNA and their coalition, ODOT explored additional design options that seek to minimize Phase 1 Bypass–related traffic using Wilsonville Road. ODOT reviewed the potential design options from an operational standpoint and also against their internal criteria that the solution should try to be constructed within the current right-of-way footprint and not require additional utility relocation to minimize impacts on the construction timeline and costs of the Phase 1 Bypass. ODOT reviewed eight potential design options for the intersection, which are shown in Attachment 1. Option 1 "Full Movement Intersection" is the currently adopted version in the TSP. ODOT is asking the city to consider a change to Option 8 "No Thru Traffic", as developed by ODOT and LHNA to mitigate LHNA's safety concerns.

Under Option 8, no direct connection would be provided between Wilsonville Road and the Phase 1 Bypass. Rather, the eastbound and westbound through movements would be prohibited at the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection. Travelers desiring to travel between Wilsonville Road and the Phase 1 Bypass would need to use one of these alternate routes:

- Travel northbound and use a median opening to make a U-turn on Oregon 219, or travel southbound and make a U-turn at Wynooski Road or another southbound point, and then turn at the Oregon 219/Phase 1 Bypass/Wilsonville Road traffic signal.
- Make a U-turn at the Oregon 219/Springbrook Road/Industrial Parkway traffic signal and then turn at the Oregon 219/Phase 1 Bypass/Wilsonville Road traffic signal.
- Use Springbrook Road and McKern Court (currently Wilsonville Road). The traveler could then turn left into Springbrook Estates and follow the local network to travel between Wilsonville Road and the Phase 1 Bypass. This would result in cut-through traffic in the Springbrook Estates mobile home park.
- Use Springbrook Road, Fernwood Road, Corral Creek Road, and Renne Road to travel between Wilsonville Road and Bypass.
- Travel northbound, turn right at 2nd Street, right on Springbrook Road, left onto Oregon 219, and then turn at the Oregon 219/Phase 1 Bypass/Wilsonville Road traffic signal.

From an operational standpoint, the Option 8 volume to capacity performance standard is about the same as the other options considered, including Option 1. However, the city is concerned with additional out of direction travel through neighborhoods and the potential safety issues that may arise from unsafe U-turn movements on Highway 219. It is particularly worrisome that cutting through Springbrook Estates will be an attractive route, as that is a mobile home park with 126 units that is served by internal narrow private drives and the residents already have complaints about cut-through traffic. According to the data, Option 8 would require an estimated 50 vehicles per hour to use the alternate routes. This is the same approximate number of vehicles that would be added to Wilsonville Road (25 cars each direction) using

Option 1. The City Engineer stated in her comments that the additional percentage of traffic on each alternate route would increase as shown below:

	Springbrook Estates	*Springbrook/ Fernwood*	*Renne Road*	*Wilsonville Road*
2016	125%	3%	50%	16%

Most intersections function about the same under all 8 options. Therefore, the principal issues for consideration come down to: 1) whether 50 cars an hour is a significant impact, and 2) which area should be impacted by the 50 cars – out of direction travel through Newberg/other county roads or Wilsonville Road by a direct connection. Statewide Planning Goal 12 (Transportation) is "to provide and encourage a safe, convenient and economic transportation system." The city's job is to meet identified local transportation needs consistent with Goal 12 and Oregon Administrative Rule 660 Division 12 (Transportation Planning), which directs transportation plans to:

(5) minimize adverse social, economic and environmental impacts and costs;
(6) conserve energy;
(9) conform with local and regional comprehensive land use plans.

The City Engineer and Planning Division staff are concerned about making changes to an intersection that may then cause impacts to safety and livability within the city, as well as the potential safety and social equity issues caused by permitting cut-through traffic through an existing mobile home park. Option 8 also causes an increase in travel time, energy use, and potential driver frustration, which can lead to unsafe driving conditions such as speeding through neighborhoods to make up time. Yamhill County recently adopted an updated TSP, and analysis was based on the currently adopted configuration of the Phase 1 Bypass layout. The average daily trips estimated for 2016 and 2035 are both in the 3,000-6,000 range, and the overall Wilsonville Road corridor health is rated as being good both in 2016 and 2035 (see Attachment 7 for more information). Based on safety and livability concerns, the low overall number of trips projected to use Wilsonville Road, and the overall health of the Wilsonville Road corridor expected in the Yamhill County TSP, staff recommends making no change to the current configuration of the intersection.

The Ladd Hill Neighborhood Association has submitted materials supporting the proposed change to Option 8. These materials are shown in Attachment 5. Much of the materials has previously been submitted to the city, and the City Engineer's response to the most recent report from Mackenzie is shown in Attachment 4.

Staff Recommendation:

Staff recommends that Planning Commission does the following:

1. Consider the staff report, public testimony, and the findings.
2. Deliberate.
3. Make a motion to adopt Resolution No. 2015-310, which recommends that City Council adopt proposed Amendment 1 to make changes to the road and lane configuration of southbound Oregon 219 from north of the Springbrook Road/Industrial Parkway intersection through the Phase 1 Bypass/Wilsonville Road intersection.
4. Make a motion to adopt Resolution No. 2015-311, which recommends that City Council deny proposed Amendment 2 to change the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection to a "No Thru Traffic" design.

Attachments:

Planning Commission Resolution No. 2015-310 with:
Exhibit "A": Transportation System Plan amendment
Exhibit "B": Findings
Planning Commission Resolution No. 2015-311 with:
Exhibit "A": Transportation System Plan amendment
Exhibit "B": Findings

1. Design options considered for the Highway 219/Phase 1 Bypass/Wilsonville Road intersection
2. Application submittal package
3. City Engineer comments to ODOT application
4. City Engineer letter to ODOT in response to Mackenzie analysis (6/24/15)
5. Ladd Hill Neighborhood Association submission (also in hard copy binder to Planning Commissioners), received 11/23/15
6. Crag Law letter to City (10/8/15), and City response (10/26/15)
7. Other public comments/correspondence
8. Yamhill County TSP Tech Memo 3 (Existing Transportation Conditions) and Tech Memo 4 (Future Transportation Conditions)

PLANNING COMMISSION RESOLUTION 2015-310

A RESOLUTION RECOMMENDING CITY COUNCIL ADOPT A TRANSPORTATION SYSTEM PLAN AMENDMENT TO CHANGE THE ROAD AND LANE CONFIGURATION OF SOUTHBOUND OREGON HIGHWAY 219 FROM NORTH OF THE SPRINGBROOK ROAD/INDUSTRIAL PARKWAY INTERSECTION THROUGH THE PHASE 1 BYPASS/WILSONVILLE ROAD INTERSECTION

RECITALS:

1. During the final Phase 1 Bypass design process, the Oregon Department of Transportation (ODOT) identified traffic safety concerns due to the substandard merge and weave distance (about 1000 feet) on Oregon 219 between Springbrook Road and the Phase 1 Bypass/Wilsonville Road intersection. ODOT's analysis showed that with two through lanes and two left turn lanes, vehicles could get trapped in the wrong lane and have to make multiple merges to get into the correct lane, and there is not enough distance between the two intersections to perform these movements safely.

2. Based on the refined evaluation of operations and safety, ODOT modified the design for Phase 1 to remove one southbound travel lane and right turn on Oregon 219, create a dedicated right turn lane onto the Phase 1 Bypass, and direct left-turning vehicles into the correct left turn lane with signage further north on Springbrook Road.

3. The proposed amendment will facilitate safe and convenient vehicular circulation and reduce potential accidents due to the substandard merge and weave. In addition to the safety benefits, the Final Design Alternative also requires less right-of-way than the FEIS Alternative, thereby reducing the overall costs associated with the Phase 1 construction.

4. After proper notice, the Newberg Planning Commission held a hearing on December 10, 2015 to consider the proposal.

NOW THEREFORE, BE IT RESOLVED by the Planning Commission of the City of Newberg that it recommends the City Council adopt the proposed Transportation System Plan amendment as shown in Exhibit "A", Final Design Alternative. This recommendation is based on the staff report, the findings in Exhibit "B", and testimony.

Adopted by the Newberg Planning Commission this 10th day of December, 2015.

ATTEST:

Planning Commission Chair

Planning Commission Secretary

Attached:
Exhibit "A": Transportation System Plan amendment
Exhibit "B": Findings

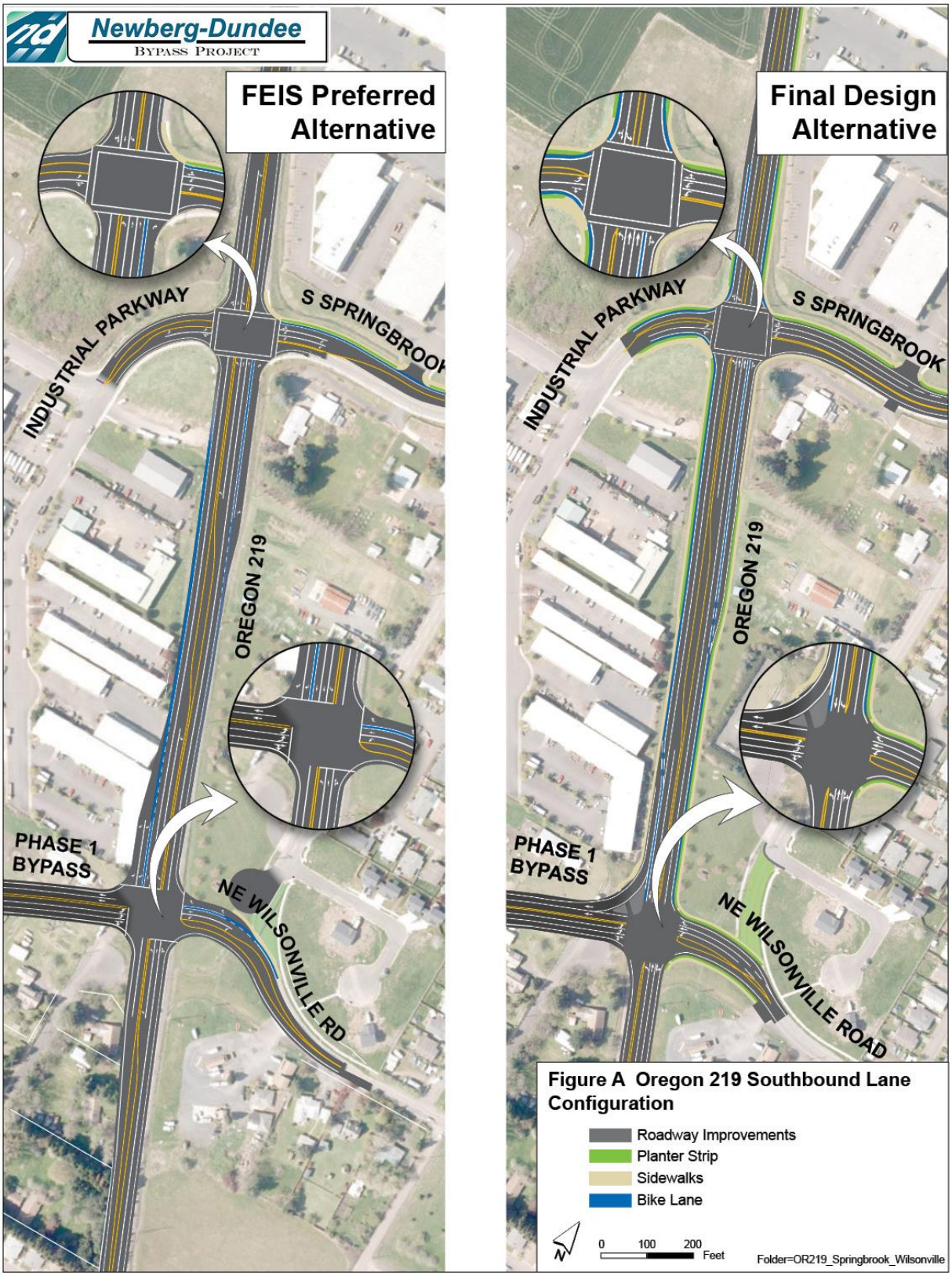
Newberg-Dundee
Bypass Project
FEIS Preferred Alternative
INDUSTRIAL PARKWAY
S SPRINGBROOK
OREGON 219
PHASE 1 BYPASS
NE WILSONVILLE RD
Final Design Alternative
INDUSTRIAL PARKWAY
S SPRINGBROOK
OREGON 219
PHASE 1 BYPASS
NE WILSONVILLE ROAD
Figure A Oregon 219 Southbound Lane Configuration
Roadway Improvements
Planter Strip
Sidewalks
Bike Lane
0 100 200 Feet
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Exhibit "B": Findings
CPTA-15-002 – ODOT TSP Amendments – Resolution No. 2015-310

Applicable Newberg Comprehensive Plan (NCP) Goals and Policies & Applicable Oregon Statewide Planning Goals (SPG)

SPG 1/NCP A. Citizen Involvement. Goal: To maintain a Citizen Involvement Program that offers citizens the opportunity for involvement in all phases of the planning process.

Finding: The city meets this requirement by having various citizen committees with opportunities for the public to testify on general or specific matters. For this specific application, the proposal will go to both the Planning Commission and the City Council, providing multiple opportunities for citizen participation. In addition, a mailed courtesy notice was sent to property owners within 500 feet of the affected intersection and notice was published in the Newberg Graphic newspaper.

SPG 2. Land Use Planning. Goal: To establish a land use planning process and policy framework as a basis for all decision and actions related to use of land and to assure an adequate factual base for such decisions and actions.

Finding: This Goal requires that actions related to land use be consistent with acknowledged comprehensive plans of cities and counties. The City of Newberg updated its Transportation System Plan (which is adopted as part of the Comprehensive Plan) in 2013 to include the Newberg Dundee Bypass and Phase 1 realignment of Wilsonville Road. The Goal also requires coordination with affected governments and agencies, evaluation of alternatives, and an adequate factual base. In developing the changes to the road and lane configuration of Oregon 219 from north of the Springbrook Road intersection through the Wilsonville Road intersection, ODOT engaged in coordination efforts with planners, officials, and other representatives of Newberg. All proposed changes are based on traffic modeling data and professional engineer analysis, and are supported by an adequate factual base.

SPG 6/NCP E. Air, Water, and Land Resource Quality. Goal: To maintain and, where feasible, enhance the air, water, and land resource qualities within the community.

Finding: Goal 6 addresses the quality of air, water, and land resources. In the context of a comprehensive plan amendment, a local government complies with Goal 6 by explaining why it is reasonable to expect that the proposed uses authorized by the plan amendment will be able to satisfy applicable federal and state environmental standards, including air and water quality standards. The changes to the road and lane configuration of Oregon 219 from north of the Springbrook Road intersection through the Wilsonville Road intersection will not affect air quality in Newberg and will reduce stormwater runoff and improve water quality by adding a smaller amount of impervious surface to the watershed area than the 2013 TSP amendment.

SPG 9. Economic Development/NCP H. The Economy. Goal: To develop a diverse and stable economic base.

Finding: The Phase 1 Bypass project, including the changes to the road and lane configuration of Oregon 219 from north of the Springbrook Road intersection through the Wilsonville Road intersection will

improve mobility and accessibility generally, and freight movement in particular, throughout the Newberg-Dundee urban area, thus resulting in substantially reduced congestion and fewer hours of delay. Having better freight movement through the area will also be attractive to industries, which will help Newberg create a stable economic base as envisioned by the Goal.

SPG 12. Transportation. Goal: To provide and encourage a safe, convenient and economic transportation system. A Transportation Plan shall…(2) be based upon an inventory of local, regional and state transportation needs; (3) consider the differences in social consequences that would result from utilizing differing combinations of transportation modes; (5) minimize adverse social, economic and environmental impacts and costs; (6) conserve energy; (8) facilitate the flow of goods and services so as to strengthen the local and regional economy…

> *Guideline B. Implementation. 2: Plans for new or for the improvement of major transportation facilities should identify the positive and negative impacts on: (1) local land use patterns, (2) environmental quality, (3) energy use and resources, (4) existing transportation systems, (5) fiscal resources in a manner sufficient to enable local governments to rationally consider the issues posed by the construction and operation of such facilities.*
>
> *NCP K. Transportation. Goal 1: Establish cooperative agreements to address transportation based planning, development, operation and maintenance. Policy f: The City shall coordinate with Yamhill County and the State on the development of the Newberg-Dundee Bypass.*
>
> *Goal 4: Minimize the impact of regional traffic on the local transportation system. Policy b: Provide for alternate routes for regional traffic. Policy g: Minimize the use of local and minor collector streets for regional traffic through application of traffic calming measures as traffic operations and/or safety problems occur. Policy s: Special planning and efforts shall be made to retain and create livable and desirable neighborhoods near the bypass. This shall include retaining or creating street connections, pedestrian paths, recreational areas, landscaping, noise attenuation, physical barriers to the bypass, and other community features.*
>
> *Goal 12: Minimize the negative impact of a Highway 99 bypass on the Newberg community.*

Finding: Goal 12 is implemented through the Transportation Planning Rule (TPR), OAR 660, Division 12. The Newberg-Dundee Bypass Project is an approved project in the City of Newberg's acknowledged TSP. The changes to the road and lane configuration of Oregon 219 from north of the Springbrook Road intersection through the Wilsonville Road intersection reflect final design decisions that are necessary to address traffic operation and safety to implement Phase 1G of the project. The TPR addresses project development activities. Changes in the number of travel lanes and intersection performance standards are not land use decisions. The changes to the road and lane configuration of Oregon 219 from north of the Springbrook Road intersection through the Wilsonville Road intersection are consistent with Goal 12 and with the TPR requirements. ODOT will address intersection performance on Oregon 219 by application of alternative mobility standards as part of Newberg TSP update process.

ODOT performed a traffic analysis to understand how reducing the number of lanes affected the traffic performance of the affected intersections. The analysis showed the following:

- The Oregon 219/Springbrook Road/Industrial Parkway intersection would operate at a v/c ratio of 0.75 in the opening year of Phase 1 of the Bypass. This complies with ODOT's mobility standard of 0.80 for the intersection.
- The Oregon 219/Phase 1 Bypass/Wilsonville Road intersection would operate at a v/c ratio of 0.76 in the opening year of Phase 1. This exceeds ODOT's performance standard of 0.65 for this new intersection (as defined by the Highway Design Manual, HDM); however, the intersection would meet the Oregon Highway Plan (OHP) v/c standard of 0.80 for this section of Oregon 219. ODOT felt that the safety benefits associated with minimizing lane changes along Oregon 219 outweighed the need to comply with the HDM standard.

Based on the refined evaluation of operations and safety, ODOT modified the design for Phase 1 to reflect one southbound lane on Oregon 219 rather than the two originally included in the FEIS. In addition to the safety benefits, the Final Design Alternative also requires less right-of-way than the FEIS Alternative, thereby reducing the overall costs associated with the Phase 1 construction. Staff concurs with this assessment. The proposed amendment will facilitate safe and convenient vehicular circulation and reduce potential accidents due to the substandard merge and weave movement.

SPG 13/NCP M. Energy. Goal: To conserve energy through efficient land use patterns and energy-related policies and ordinances.

Finding: The Bypass project, including Phase 1 and changes to the road and lane configuration of Oregon 219 from north of the Springbrook Road intersection through the Wilsonville Road intersection, are intended to improve statewide and regional mobility through the area and to make existing Oregon 99W more accessible for local and regional traffic. The project will help relieve much of the substantial traffic congestion that already exists along Oregon 99W. Facilitating the smooth flow of traffic at acceptable levels of service helps conserve fuel.

PLANNING COMMISSION RESOLUTION 2015-311

A RESOLUTION RECOMMENDING CITY COUNCIL DENY A TRANSPORTATION SYSTEM PLAN AMENDMENT TO CHANGE THE OREGON HIGHWAY 219/PHASE 1 BYPASS/WILSONVILLE ROAD INTERSECTION TO A "NO THRU TRAFFIC" DESIGN

RECITALS:

1. The City of Newberg amended its Transportation System Plan (TSP) in 2013 to reflect the approved Phase 1 Bypass details, which included a full movement intersection at Oregon 219/Phase 1 Bypass/Wilsonville Road. Following approval of the TSP amendment in 2013, the Oregon Department of Transportation (ODOT) and the Ladd Hill Neighborhood Association (LHNA) have continued to investigate solutions to the LHNA concerns regarding the use of Wilsonville Road as a route to get to I-5 from Oregon 219 in Newberg. In response to the concerns raised by LHNA and their coalition, ODOT explored additional design options seeking to minimize Phase 1 Bypass–related traffic using Wilsonville Road. ODOT submitted an application to the City of Newberg for a TSP amendment to change the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection to a "No Thru Traffic" option to mitigate LHNA's safety concerns.

2. Under the "No Thru Traffic" option, no direct connection would be provided between Wilsonville Road and the Phase 1 Bypass. Rather, the eastbound and westbound through movements would be prohibited at the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection. Travelers desiring to travel between Wilsonville Road and the Phase 1 Bypass would need to use one of these alternate routes: U-turn movements northbound and southbound; travel within Springbrook Estates mobile home park; travel on Springbrook Road, Fernwood Road, Corral Creek Road, and Renne Road as an alternate path to and from Wilsonville Road; or travel on 2nd Street and Springbrook Road to circle back around to Oregon 219 and the traffic light at the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection.

3. The "No Thru Traffic" option operational standard is about the same as all other options considered, including the currently adopted "Full Movement" intersection option. However, the city is concerned with additional out of direction travel through neighborhoods, the potential safety issues that may arise from unsafe U-turn movements on Highway 219, and the impacts on the Springbrook Estates mobile home park, which is 126 units served by an internal narrow private drive network.

4. According to the data, the "No Thru Traffic" option would require an estimated 50 vehicles per hour to use the alternate routes. This is the same approximate number of vehicles that would be added to Wilsonville Road (25 cars each direction) using the currently adopted "Full Movement" intersection option. The "No Thru Traffic" option may also cause an increase in travel time, energy use, and potential driver frustration, which can lead to unsafe driving conditions such as speeding through neighborhoods to make up time.

5. Based on safety and livability concerns, the low overall number of trips projected to use Wilsonville Road with the current "Full Movement" intersection option, and the overall good health of the Wilsonville Road corridor expected in the Yamhill County TSP in both 2016 and 2035, no change to the current configuration of the intersection can found to be warranted.

6. After proper notice, the Newberg Planning Commission held a hearing on December 10, 2015 to consider the proposal.

NOW THEREFORE, BE IT RESOLVED by the Planning Commission of the City of Newberg that it recommends the City Council deny the proposed Transportation System Plan amendment as shown in Exhibit "A". This recommendation is based on the staff report, the findings in Exhibit "B", and testimony.

Adopted by the Newberg Planning Commission this 10th day of December, 2015.

ATTEST:

Planning Commission Chair

Planning Commission Secretary

Attached:
Exhibit "A": Transportation System Plan amendment
Exhibit "B": Findings

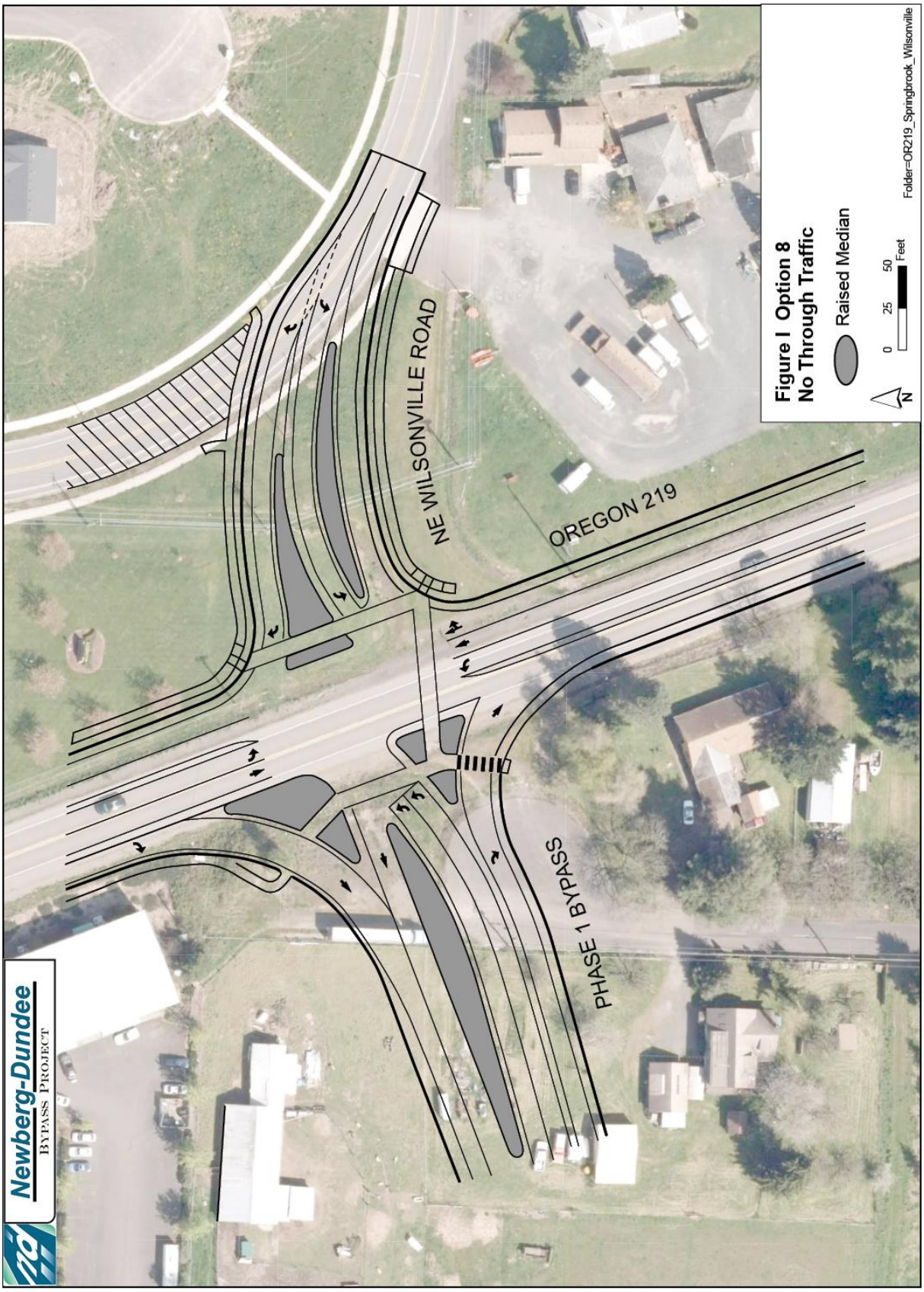
Newberg-Dundee
BYPASS PROJECT
NE WILSONVILLE ROAD
OREGON 219
PHASE 1 BYPASS
Figure I Option 8
No Through Traffic
Raised Median
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Exhibit "B": Findings
CPTA-15-002 – ODOT TSP Amendments – Resolution No. 2015-311

Applicable Newberg Comprehensive Plan (NCP) Goals and Policies & Applicable Oregon Statewide Planning Goals (SPG)

SPG 1/NCP A. Citizen Involvement. Goal: To maintain a Citizen Involvement Program that offers citizens the opportunity for involvement in all phases of the planning process.

Finding: The city meets this requirement by having various citizen committees with opportunities for the public to testify on general or specific matters. For this specific application, the proposal will go to both the Planning Commission and the City Council, providing multiple opportunities for citizen participation. In addition, a mailed courtesy notice was sent to property owners within 500 feet of the affected intersection and notice was published in the Newberg Graphic newspaper.

SPG 2. Land Use Planning. Goal: To establish a land use planning process and policy framework as a basis for all decision and actions related to use of land and to assure an adequate factual base for such decisions and actions.

Finding: This Goal requires that actions related to land use be consistent with acknowledged comprehensive plans of cities and counties. The City of Newberg updated its Transportation System Plan (which is adopted as part of the Comprehensive Plan) in 2013 to include the Newberg Dundee Bypass and Phase 1 realignment of Wilsonville Road. The Goal also requires coordination with affected governments and agencies, evaluation of alternatives, and an adequate factual base. All proposed changes are based on traffic modeling data and professional engineer analysis, and are supported by an adequate factual base.

SPG 6/NCP E. Air, Water, and Land Resource Quality. Goal: To maintain and, where feasible, enhance the air, water, and land resource qualities within the community.

Finding: Goal 6 addresses the quality of air, water, and land resources. In the context of a comprehensive plan amendment, a local government complies with Goal 6 by explaining why it is reasonable to expect that the proposed uses authorized by the plan amendment will be able to satisfy applicable federal and state environmental standards, including air and water quality standards. The same number of travel trips will be moving through the area with either of the proposed intersection configurations; consequently, air quality and stormwater runoff generated by the roadway will not change.

SPG 9. Economic Development/NCP H. The Economy. Goal: To develop a diverse and stable economic base.

Finding: The Phase 1 Bypass project will improve mobility and accessibility generally, and freight movement in particular, throughout the Newberg-Dundee urban area, thus resulting in substantially reduced congestion and fewer hours of delay. Having better freight movement through the area will also be attractive to industries, which will help Newberg create a stable economic base as envisioned by the Goal.

NCP J. Urban Design. Goal 2: To develop and maintain the physical context needed to support the livability and unique character of Newberg. Policy c: Neighborhoods should be designed to promote safety and interaction with neighbors, with items such as walking paths and neighborhood parks.

Finding: Local neighborhood streets are intended to have relatively small levels of traffic, generally just the neighborhood residents and visitors. Collector and arterial streets then funnel traffic from local streets out to destinations. ODOT is asking for a change to the intersection of a city minor arterial (Highway 219) and a Yamhill County minor arterial (Wilsonville Road) to divert through traffic from the Yamhill County minor arterial. One alternative traffic movement would be travel through the Springbrook Estates mobile home park, which has 126 units and is served by a network of narrow private drives. Adding cut-through traffic to this neighborhood would severely undermine the safety and livability of this area.

SPG 12. Transportation. Goal: To provide and encourage a safe, convenient and economic transportation system. A Transportation Plan shall…(2) be based upon an inventory of local, regional and state transportation needs; (3) consider the differences in social consequences that would result from utilizing differing combinations of transportation modes; (5) minimize adverse social, economic and environmental impacts and costs; (6) conserve energy; (8) facilitate the flow of goods and services so as to strengthen the local and regional economy…

> *Guideline B. Implementation. 2: Plans for new or for the improvement of major transportation facilities should identify the positive and negative impacts on: (1) local land use patterns, (2) environmental quality, (3) energy use and resources, (4) existing transportation systems, (5) fiscal resources in a manner sufficient to enable local governments to rationally consider the issues posed by the construction and operation of such facilities.*
>
> *NCP K. Transportation. Goal 1: Establish cooperative agreements to address transportation based planning, development, operation and maintenance. Policy f: The City shall coordinate with Yamhill County and the State on the development of the Newberg-Dundee Bypass.*
>
> *Goal 4: Minimize the impact of regional traffic on the local transportation system. Policy b: Provide for alternate routes for regional traffic. Policy g: Minimize the use of local and minor collector streets for regional traffic through application of traffic calming measures as traffic operations and/or safety problems occur. Policy s: Special planning and efforts shall be made to retain and create livable and desirable neighborhoods near the bypass. This shall include retaining or creating street connections, pedestrian paths, recreational areas, landscaping, noise attenuation, physical barriers to the bypass, and other community features.*
>
> *Goal 12: Minimize the negative impact of a Highway 99 bypass on the Newberg community.*

Finding: The adopted configuration of the Phase 1 Bypass in Newberg means that there will be some adverse impacts on local and regional circulation due to the use of Springbrook Road as a primary connection to the Bypass: increased traffic along Springbrook Road, impacting residential and commercial properties; increased traffic on other city streets in the eastern part of Newberg as drivers try to avoid the Highway 99W/Springbrook Road intersection and congestion along Springbrook Road; and the reconnection of Wilsonville Road to Highway 219 for operational reasons, which will increase traffic somewhat on Wilsonville Road. Traffic modeling shows an increase of approximately 50 cars in

the PM peak hour on Wilsonville Road due to the new Bypass intersection. The Ladd Hill Neighborhood Association objected to this adverse impact on their neighborhood, and has worked with ODOT on a potential solution that would divert traffic from Wilsonville Road. However, their identified solution adversely impacts local city streets by diverting that same number of cars into out-of-direction travel and alternate routes to reach their destinations.

The city must weigh the alternatives, and filter the proposals through the lens of what is best for Newberg's local transportation and land use system, particularly considering the social, economic, and environmental impacts and costs. ODOT's proposed alternative is referred to as the "No Thru Traffic" option. Under this option, no direct connection would be provided between Wilsonville Road and the Phase 1 Bypass. Rather, the eastbound and westbound through movements would be prohibited at the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection. Travelers desiring to travel between Wilsonville Road and the Phase 1 Bypass would need to use one of these alternate routes:

- Travel northbound and use a median opening to make a U-turn on Oregon 219, or travel southbound and make a U-turn at Wynooski Road or another southbound point, and then turn at the Oregon 219/Phase 1 Bypass/Wilsonville Road traffic signal.
- Make a U-turn at the Oregon 219/Springbrook Road/Industrial Parkway traffic signal and then turn at the Oregon 219/Phase 1 Bypass/Wilsonville Road traffic signal.
- Use Springbrook Road and McKern Court (currently Wilsonville Road). The traveler could then turn left into Springbrook Estates and follow the local network to travel between Wilsonville Road and the Phase 1 Bypass. This would result in cut-through traffic in the Springbrook Estates mobile home park.
- Use Springbrook Road, Fernwood Road, Corral Creek Road, and Renne Road to travel between Wilsonville Road and Bypass.
- Travel northbound, turn right at 2nd Street, right on Springbrook Road, left onto Oregon 219, and then turn at the Oregon 219/Phase 1 Bypass/Wilsonville Road traffic signal.

From an operational standpoint, the "No Thru Traffic" option volume to capacity performance standard is about the same as the other options considered, including the currently adopted "Full Movement" option. However, there are concerns with additional out of direction travel through neighborhoods and the potential safety issues that may arise from unsafe U-turn movements on Highway 219. It is particularly concerning that travel through Springbrook Estates will be an attractive route, as that is a mobile home park with 126 units that is served by a network of narrow private drives. The city believes this to be a significant social equity issue, and that permitting cut-through traffic through this neighborhood would significantly degrade the safety and livability of this area.

According to the data, the "No Thru Traffic" option would require an estimated 50 vehicles per hour to use the alternate routes. This is the same approximate number of vehicles that would be added to Wilsonville Road (25 cars each direction) using the "Full Movement" option. Therefore, the principal issues for consideration come down to: 1) whether 50 cars an hour is a significant impact, and 2) which area should be impacted by the 50 cars – out of direction travel through Newberg/other county roads or Wilsonville Road by a direct connection.

The City Engineer and Planning Division staff have significant concerns about making changes to an intersection that may then cause impacts to safety and livability within the city, as well as the potential safety and social equity issues caused by permitting cut-through traffic through an existing mobile home

park. The “No Thru Traffic” option may also cause an increase in travel time, energy use, and potential driver frustration, which can lead to unsafe driving conditions such as speeding through neighborhoods to make up time. Yamhill County recently adopted an updated TSP, and their analysis was based on the currently adopted Phase 1 layout. The average daily trips estimated for 2016 and 2035 are both in the 3,000-6,000 range, and the overall Wilsonville Road corridor health is rated as being good both in 2016 and 2035. Based on a review of all of the data submitted, including the information submitted by the Ladd Hill Neighborhood Association, we find that there would be an adverse impact to the safety and livability of Newberg’s transportation and land use system and cannot find that Goal 12 is met by this proposed change.

SPG 13/NCP M. Energy. Goal: To conserve energy through efficient land use patterns and energy-related policies and ordinances.

Finding: The Bypass project, including Phase 1 and changes to the road and lane configuration of Oregon 219 from north of the Springbrook Road intersection through the Wilsonville Road intersection, are intended to improve statewide and regional mobility through the area and to make existing Oregon 99W more accessible for local and regional traffic. The project will help relieve much of the substantial traffic congestion that already exists along Oregon 99W. Facilitating the smooth flow of traffic at acceptable levels of service helps conserve fuel.

Oregon 219/Phase 1 Bypass/Wilsonville Road Intersection

The City of Newberg amended its TSP in 2013 to reflect the FEIS Alternative for Phase 1. Since that time, ODOT and the Ladd Hill Neighborhood Association (LHNA) have continued to investigate potential design options related specifically to the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection to ensure that the Phase 1 Bypass will not cause significant traffic impacts to Wilsonville Road. As part of the 2013 TSP Amendment, ODOT committed to installing specific signage that would discourage traffic from using Wilsonville Road and to provide ongoing traffic monitoring to ensure that no unanticipated impacts occur once Phase 1 of the Bypass is open to traffic.

In addition to LHNA, Clackamas County and the City of Wilsonville have also raised questions about the potential use of Wilsonville Road to travel between I-5 and the Phase 1 Bypass. In response to these questions, ODOT explored additional design options that seek to minimize Phase 1 Bypass–related traffic using Wilsonville Road. In reviewing these additional design options, ODOT sought solutions that minimize potential delays to the overall schedule to open the Phase 1 Bypass to traffic in 2017. As part of the Phase 1 Bypass opening, it is essential that both Oregon 219 and Springbrook Road are improved to accommodate traffic between Oregon 99W and the Phase 1 Bypass in southeast Newberg. Any modifications to the design for Wilsonville Road must be included in the Phase 1G project, which is scheduled to go to construction bid in February 2016 and be completed in 2017. With these objectives in mind, ODOT identified two important considerations to assess:

- Could the modified design option be constructed within the current project right-of-way footprint? The right-of-way purchase process for the Phase 1 Bypass is well under way, and changes or additional right-of-way acquisition could delay construction completion.
- Would the design option require additional utility relocation? Most utilities have been or are in the process of being relocated. Requiring utility companies to move additional utilities or relocate utilities that have been moved could delay construction or increase the costs of Phase 1 Bypass construction if ODOT is required to pay the relocation costs.

Further discussion on each of the design options considered related to Wilsonville Road is provided below. These options were reviewed relative to projected intersection operations and the potential effect of out-of-direction travel on nearby ODOT and Newberg roads.

The following intersections were analyzed under Opening Year 2017 conditions:

- Oregon 219/Phase 1 Bypass
- Oregon 219/Springbrook Road/Industrial Parkway
- Oregon 219/Wynooski Road
- Springbrook Road/Wilsonville Road
- Springbrook Road/2nd Street/Fernwood Road

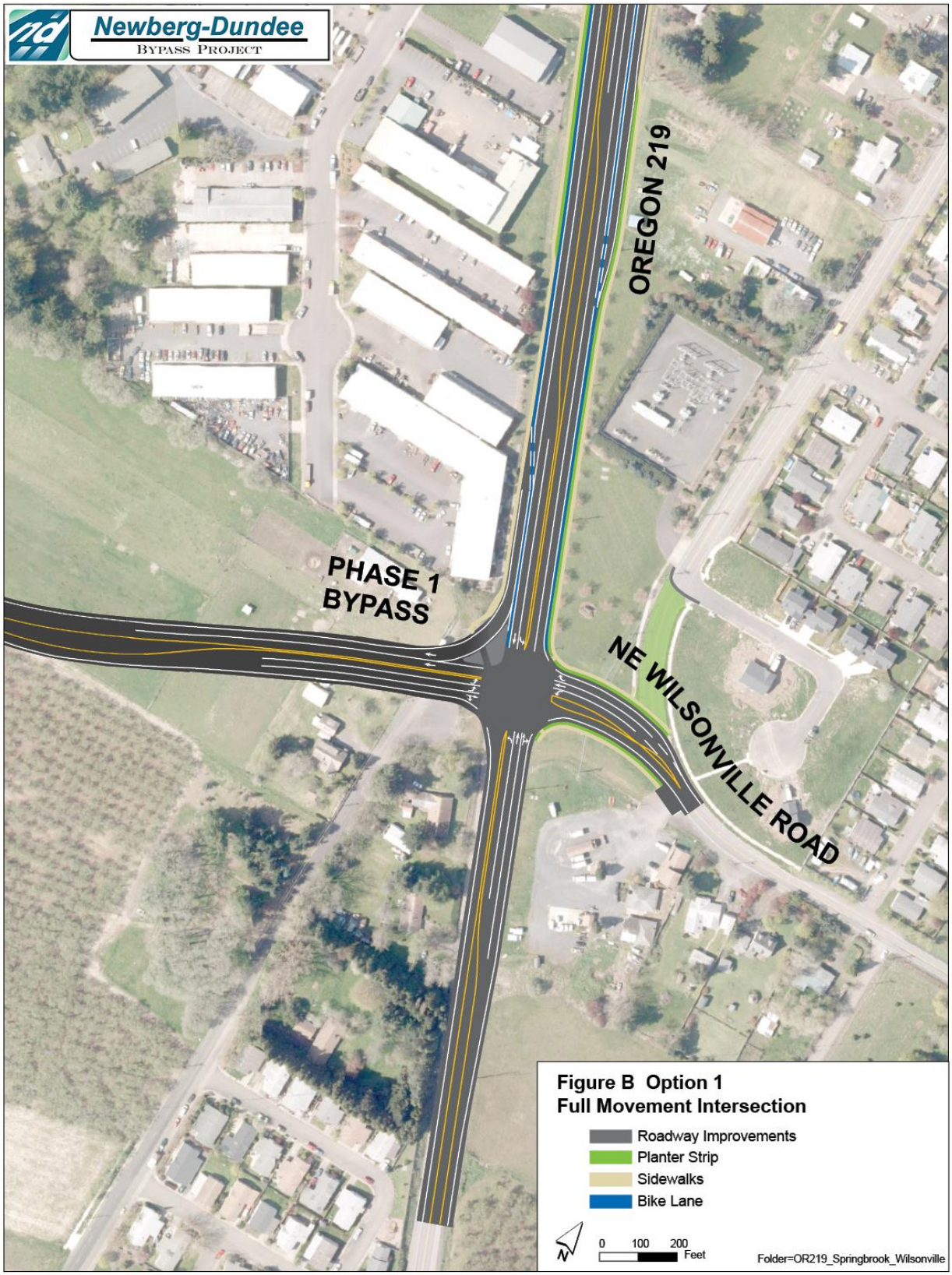
A summary of each option's intersection operations is provided in Table 1 at the end of this report as well as within the description of each option. Traffic analysis figures for each option are included in Appendix A.

Option 1 – Full Movement Intersection

Option 1 represents the Final Design Alternative proposed by ODOT as part of the requested TSP Amendment for the Oregon 219 lane configuration modification presented in this document (i.e., one continuous through lane southbound on Oregon 219). As part of Option 1, all turning movements would be allowed at the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection. As such, travel between Wilsonville Road and the Phase 1 Bypass could occur via through movements at the signalized intersection. The proposed intersection configuration as part of Option 1 is reflected in Figure B.

As shown below in Table 1, the v/c ratio at the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection is projected to be 0.76. Although this value is slightly above ODOT's design standard for a new intersection on the state highway system, the proposed design would meet the OHP mobility standard and provide enhanced safety benefits (see the previous section of this report for further discussion). The Oregon 219/Springbrook Road/Industrial Parkway, the existing Springbrook Road/Wilsonville Road, and Springbrook Road/2nd Street/Fernwood Road intersections will all meet the performance standards.

Because Option 1 is currently part of ODOT's recommended design, it can be built within the available right-of-way, with no further utility impacts or schedule delays.


Newberg-Dundee
Bypass Project
OREGON 219
PHASE 1
BYPASS
NE WILSONVILLE ROAD
Figure B Option 1
Full Movement Intersection
Roadway Improvements
Planter Strip
Sidewalks
Bike Lane
0 100 200
Feet
Folder=OR219_Springbrook_Wilsonville

Option 2 – Traffic Signal at the Springbrook Road/Wilsonville Road Intersection

Option 2 would maintain the existing configuration of Wilsonville Road and eliminate the future connection to the Oregon 219/Phase 1 Bypass intersection. Today, Wilsonville Road intersects Springbrook Road approximately 500 feet east of Oregon 219 at an unsignalized junction. Under Option 2, the Springbrook Road/Wilsonville Road intersection would require signalization or the installation of a roundabout. A traffic signal could operate with one lane in each direction on Springbrook Road plus a westbound left turn lane.

A roundabout at the Springbrook Road/Wilsonville Road intersection would require a two-lane entry on the westbound approach of Springbrook Road and a single-lane entry on the eastbound approach. Construction of the roundabout at the Springbrook Road/Wilsonville Road intersection would require additional right-of-way at the intersection. It would also likely cause additional utility relocations and impacts to existing parking areas and building structures. For these reasons, the roundabout option at the Springbrook Road/Wilsonville Road intersection has been eliminated from further consideration.

Figure C displays the roadway and intersection configurations for Option 2.

Under Option 2, anyone wishing to travel between the Phase 1 Bypass and Wilsonville Road would need to travel through the Springbrook Road/Wilsonville Road and Oregon 219/Springbrook Road/Industrial Parkway intersections. No direct connection between Wilsonville Road and the Phase 1 Bypass would be provided.

As a signalized intersection, the Springbrook/Wilsonville Road intersection would function at a v/c ratio of 0.68; as a multilane roundabout, the intersection would also function at a v/c ratio of 0.68. As shown in the Table 1, the operations at the remaining intersections would be similar to that experienced under Option 1.

Given the relatively close spacing of signalized intersections in this design option, a preliminary queuing analysis was performed assuming opening year traffic conditions. This analysis found that queues in the dual westbound left-turn lanes at the Oregon 219/Springbrook Road/Industrial Parkway intersection would extend approximately 400 feet. With approximately 450 feet available between intersections, these queues could theoretically be accommodated; however, there is insufficient distance for vehicles to transition into the turn lanes and no room for additional traffic growth in the future. Furthermore, this analysis assumed a balanced use of the dual left-turn lanes. Given the demand for traffic to make a right turn at the Phase 1 Bypass intersection downstream, it is likely that a majority of traffic would favor the right-hand lane. As such, queues at the Oregon 219/Springbrook Road/Industrial Parkway intersection are expected to extend into the Springbrook Road/Wilsonville Road intersection periodically during peak travel periods.

These queue spillback issues could cause blockages and conflicts for vehicles turning at the Springbrook Road/Wilsonville Road intersection, thereby reducing the intersection performance. Additionally, standing queues within the intersection would create concerns for pedestrian safety and other nonmotorized users.

Construction of a traffic signal at the Springbrook Road/Wilsonville Road intersection and modifying the Oregon 219/Phase 1 Bypass intersection would not result in right-of-way impacts. This option would likely require additional utility relocations, and the redesign could result in minor delays to the construction schedule.

While this option may perform acceptably in 2017, the opening year of the Phase 1 Bypass, as traffic volumes continue to grow the queueing will block the Springbrook Road/Wilsonville Road intersection. This amount of queueing will be problematic to traffic corridor operations and is not an acceptable option for Wilsonville Road, since there is no capacity for the future projected growth.


Newberg-Dundee
Bypass Project
INDUSTRIAL PARKWAY
S SPRINGBROOK RD
OREGON 219
NE WILSONVILLE RD
PHASE 1
BYPASS
NE WILSONVILLE RD
Figure C Option 2
Traffic Signal at Springbrook/Wilsonville
Road Intersection
Roadway Improvements
Planter Strip
Sidewalks
Bike Lane
Traffic Signal
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0 100 200
Feet
Folder=OR219_Springbrook_Wilsonville

Option 3 – Right In and Out at Springbrook Road/Wilsonville Road Intersection

Option 3 is the same as Option 2 except that the Springbrook Road/Wilsonville Road intersection would be right-in/right-out on the Wilsonville Road approach instead of allowing for full movement and signalization. Like Option 2, no direct connection between the Phase 1 Bypass and Wilsonville Road would be provided.

Option 3 would cause additional out-of-direction movements for westbound drivers seeking to travel between Wilsonville Road and the Phase 1 Bypass. Under this option, westbound travelers would need to use the Springbrook Road/Wilsonville Road, Springbrook Road/2nd Street/Fernwood Road, and Oregon 219/Springbrook Road/Industrial/Parkway intersections. In addition, travelers would either use 2nd Street, Hayes Street, or Oregon 99W to travel between northbound Springbrook Road and southbound Oregon 219 to access the Phase 1 Bypass. This would result in additional impacts to both city streets and state highways. Option 3 is reflected in Figure D.

Under this option, the Springbrook Road/Wilsonville Road intersection would function with a v/c ratio of 0.63. As shown in the Table 1, the operations at the remaining intersections would be similar to that experienced under Option 1.

Given the out-of-direction travel anticipated with this option, the Springbrook Road/2nd Street/Fernwood Road intersection operations were also reviewed. Per this analysis, this intersection would operate at a v/c ratio of 0.85, which meets the performance standard. However, approximately 200 vehicles per hour would need to find alternative routes and/or make U-turns to access the Phase 1 Bypass.

Option 3 can be built within the existing project right-of-way and with no utility impacts and no schedule delays.


Newberg-Dundee
Bypass Project
INDUSTRIAL PARKWAY
S SPRINGBROOK RD
OREGON 219
NE WILSONVILLE RD
PHASE 1
BYPASS
NE WILSONVILLE RD
Figure D Option 3
Right In/Out at Springbrook/Wilsonville
Road Intersection
Roadway Improvements
Planter Strip
Sidewalks
Bike Lane
Median
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0 100 200
Feet
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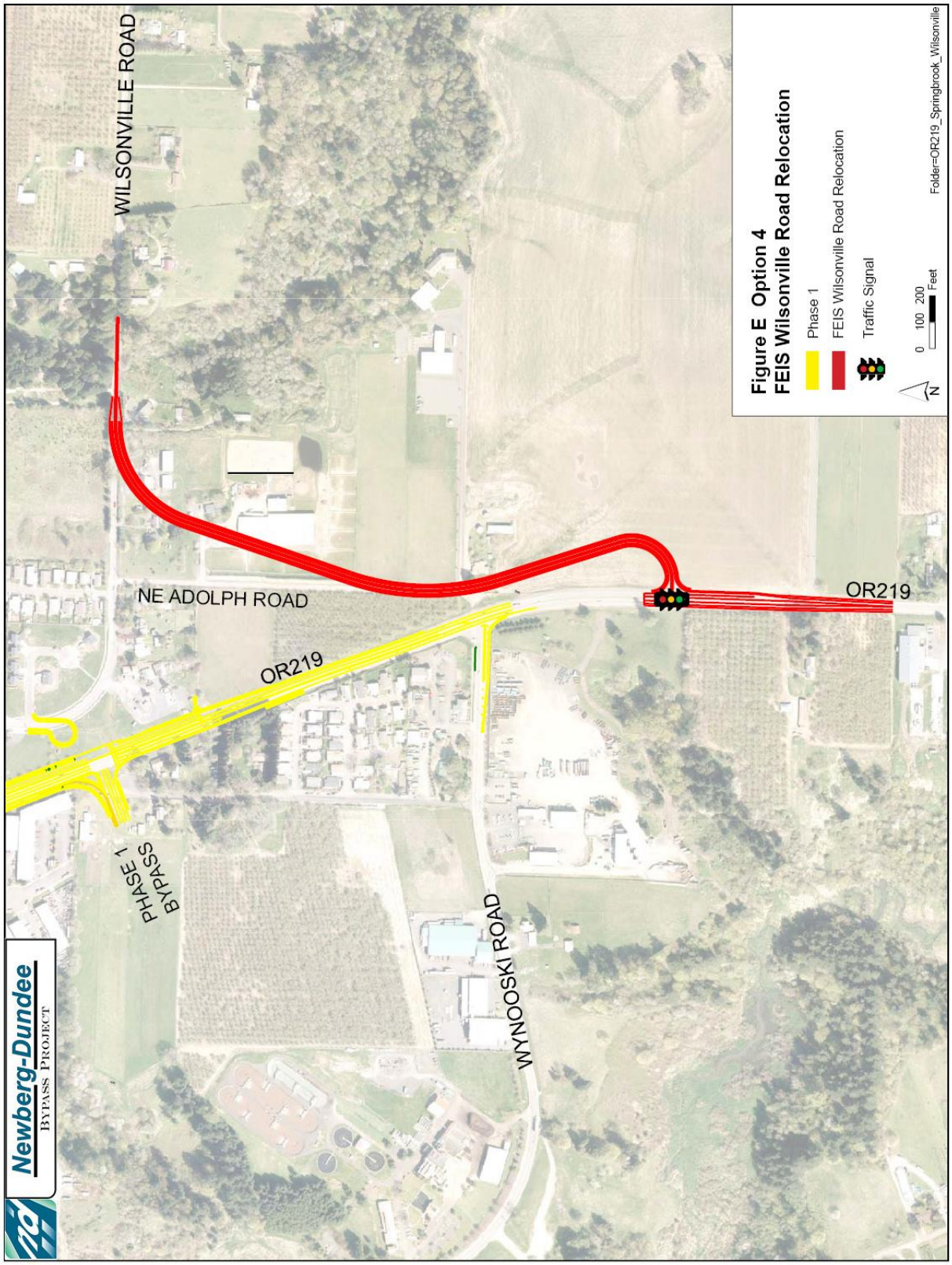
Option 4 – FEIS Wilsonville Road Relocation

Option 4 was developed as part of the FEIS Preferred Bypass Alternative for the relocation of Wilsonville Road. This option assumes that the Full Bypass and the Oregon 219 Interchange are constructed. No further relocation of Wilsonville Road would be required. Option 4 would realign Wilsonville Road to a new intersection on Oregon 219 south of the Oregon 219/Wynooski Road intersection. The southerly connection would occur partially via Adolf Road. This option would provide a direct connection between Wilsonville Road and Oregon 219, but would not directly provide a connection to the Phase 1 Bypass. Drivers would go through the new Oregon 219 intersection to travel to/from Wilsonville Road and the Phase 1 Bypass. Under this option, the new Oregon 219/Wilsonville Road intersection would require signalization. Option 4 is reflected in Figure E.

Under this option, the new signalized Oregon 219/Wilsonville Road intersection would operate acceptably with a v/c ratio of 0.54. As shown in the Table 1, the operations at the remaining intersections would be similar to that experienced under Option 1.

Option 4 would require new right-of-way, additional utility relocations, and could delay the construction schedule if it was added to the Phase 1G project.


WILSONVILLE ROAD
NE ADOLPH ROAD
OR219
OR219
PHASE 1 BYPASS
WYNOOSKI ROAD
Newberg-Dundee
BYPASS PROJECT
Figure E Option 4
FEIS Wilsonville Road Relocation
Phase 1
FEIS Wilsonville Road Relocation
Traffic Signal
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Folder=OR219_Springbrook_Wilsonville

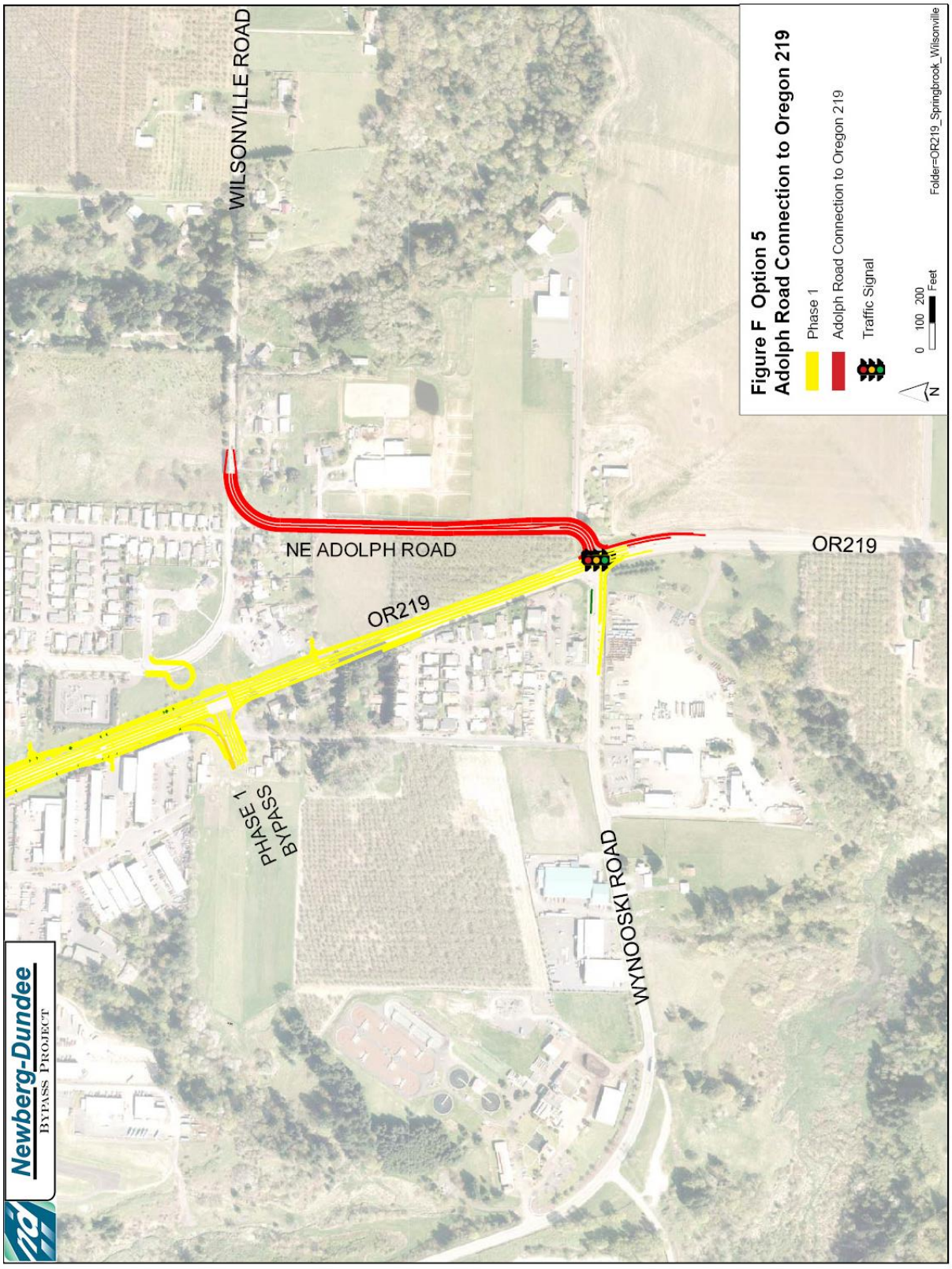
Option 5 – Adolf Road Connection to Oregon 219

Option 5 is similar to Option 4 except that Wilsonville Road would intersect Oregon 219 at the Oregon 219/Wynooski Road intersection rather than to the south. Option 5 would also create a southerly connection of Wilsonville Road to Oregon 219 that uses more of the Adolf Road right-of-way than Option 4 does. Option 5 is reflected in Figure F.

Like Option 4, Option 5 would not provide a direct connection between the Phase 1 Bypass and Wilsonville Road. Rather, drivers would use Oregon 219 to travel between Wilsonville Road and the Phase 1 Bypass.

Under this option, the Oregon 219/Wynooski Road/Wilsonville Road intersection would operate at a v/c ratio of 0.58 assuming signalization. As shown in Table 1, the operations at the remaining intersections would be similar to that experienced under Option 1.

Option 5 would require new right-of-way, additional utility relocations and could delay the construction schedule if it was added to the Phase 1G project.


WILSONVILLE ROAD
NE ADOLPH ROAD
OR219
OR219
PHASE 1 BYPASS
WYNOOSKI ROAD
Figure F Option 5
Adolph Road Connection to Oregon 219
Phase 1
Adolph Road Connection to Oregon 219
Traffic Signal
0 100 200 Feet
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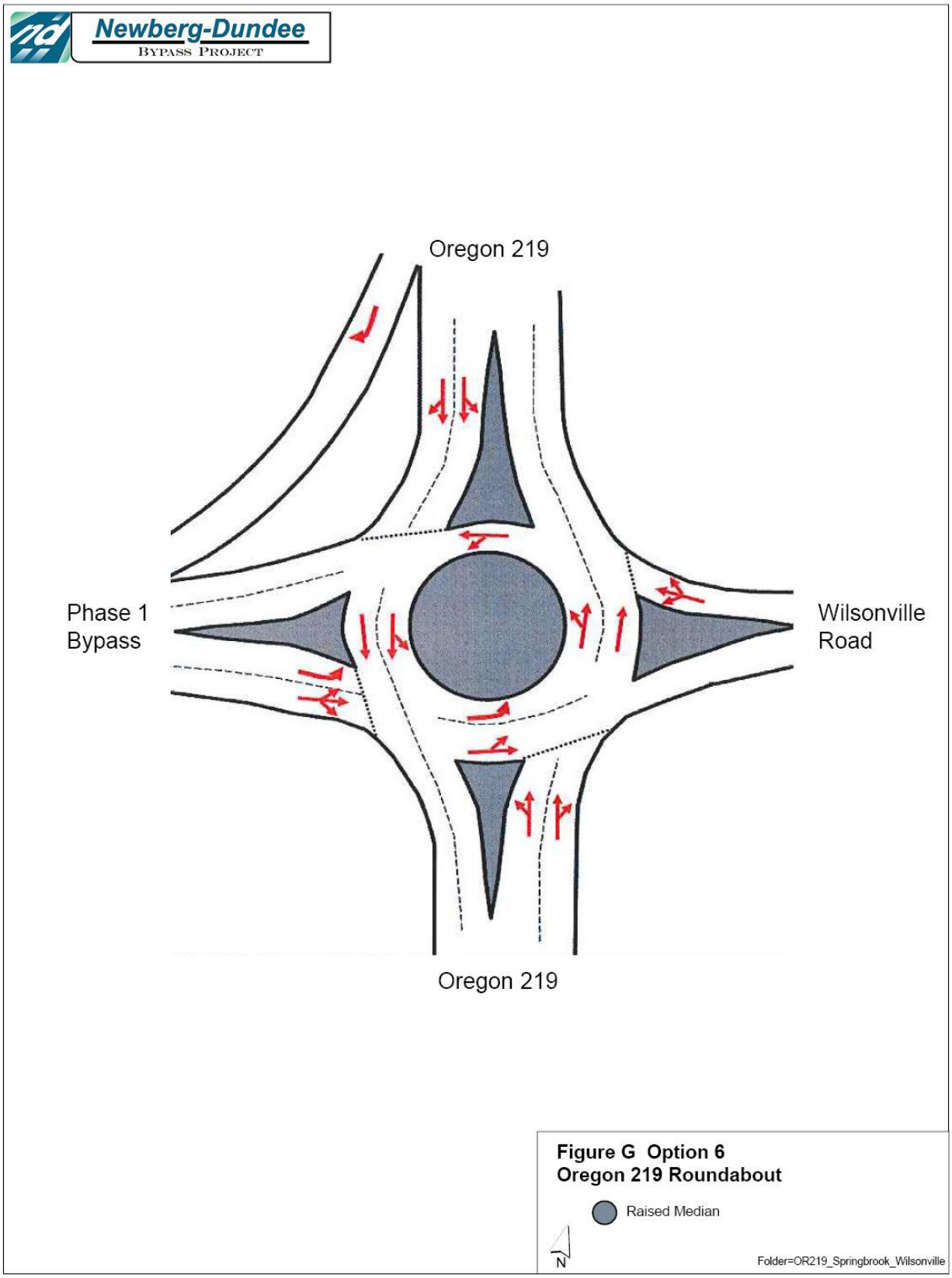
Folder=OR219_Springbrook_Wilsonville
Newberg-Dundee
BYPASS PROJECT

Option 6 – Oregon 219 Roundabout

Option 6 would be the same as Option 1 except that the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection would be constructed with a roundabout rather than a traffic signal. Construction of a roundabout would require two lanes northbound and southbound on Oregon 219. Like Option 1, Option 6 provides direct access between Wilsonville Road and the Phase 1 Bypass. This option is reflected in Figure G.

Assuming a multilane roundabout, the Oregon 219/Phase 1 Bypass/Wilsonville Road roundabout would operate with a v/c ratio of 0.66. As shown in the Table 1, the operations at the remaining intersections would be the same as that experienced under Option 1.

Construction of a roundabout at the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection would likely result in additional right-of-way impacts. This option would also likely require additional utility relocations, and the redesign could result in minor delays to the construction schedule.


Newberg-Dundee
Bypass Project
Oregon 219
Phase 1
Bypass
Wilsonville
Road
Oregon 219
Figure G Option 6
Oregon 219 Roundabout
Raised Median
N
Folder=OR219_Springbrook_Wilsonville

Option 7 – No Connection from Eastbound Phase 1 Bypass to Wilsonville Road

Option 7 is similar to Option 1 except that no eastbound through movements would be allowed at the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection. Under this option, westbound Wilsonville Road travelers could access the Phase 1 Bypass directly via the intersection, whereas eastbound travelers would either need to turn left or right onto Oregon 219 and find an alternative route to Wilsonville Road. Figure H represents this option. As shown, this intersection would require signalization as well as raised medians to prohibit eastbound through movements.

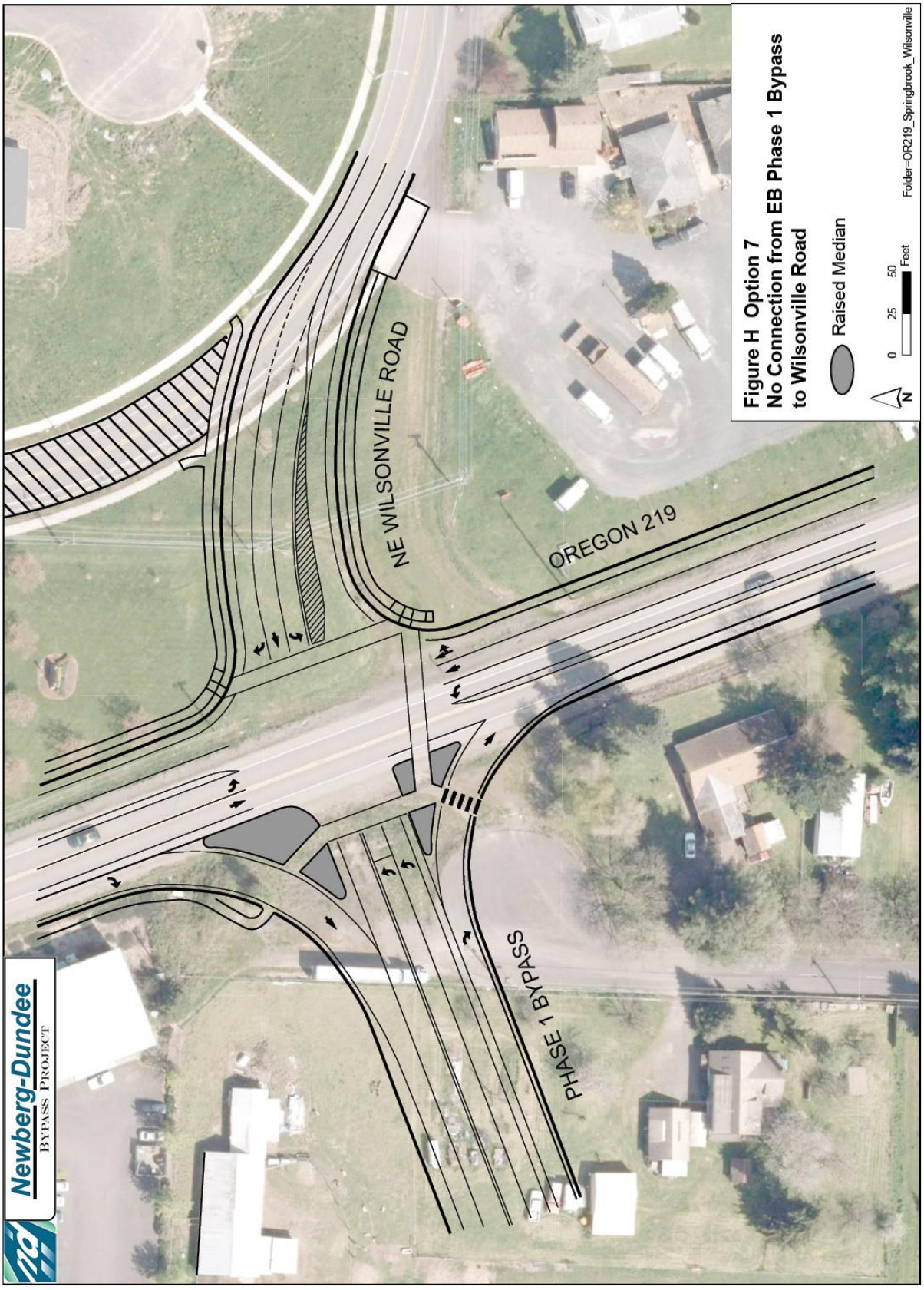
In the absence of eastbound through movements at the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection, eastbound travelers would potentially use one of a number of alternative routes to travel between the Phase 1 Bypass and Wilsonville Road. These could include:

- Travelers could turn right to head southbound on Oregon 219 and make a U-turn at a median opening or at the Oregon 219/Wynooski Road intersection. After heading northbound, the traveler could turn right onto Wilsonville Road at the Oregon 219/Phase 1 Bypass/Wilsonville Road traffic signal.
- Travelers could turn left to head northbound on Oregon 219 and make one of the following maneuvers to head southbound:
  - Make a U-turn at a median opening and turn left onto Wilsonville Road at the Oregon 219/Phase 1 Bypass/Wilsonville Road traffic signal.
  - Make a U-turn at the Oregon 219/Springbrook Road/Industrial Parkway traffic signal to head southbound on Oregon 219. The traveler can then turn left at the Oregon 219/Phase 1 Bypass/Wilsonville Road traffic signal.
  - Turn right at the Oregon 219/Springbrook Road/Industrial Parkway traffic signal and then turn right onto McKern Court (currently Wilsonville Road). The traveler could then turn left into Springbrook Estates and follow the local street system to get to Wilsonville Road. This would result in cut-through traffic in the Springbrook Estates neighborhood.
  - Turn right at the Oregon 219/Springbrook Road/Industrial Parkway traffic signal and then turn right onto Fernwood Road. The traveler could then travel past the Chehalem Glenn Golf Course and turn right onto Corral Creek Road, turn right onto Renne Road, and then turn left onto Wilsonville Road.

For the purposes of the traffic analysis, all eastbound travelers between the Phase 1 Bypass and Wilsonville Road were assumed to use the Fernwood Road/Corral Creek/Renne Road option discussed above. This option affects the most number of intersections and thereby provides a conservative analysis of impact.

Under this option, the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection would operate with a v/c ratio of 0.76. As shown in the Table 1, the operations at the remaining intersections would be similar to that experienced under Option 1. This option would require an estimated 25 vehicles per hour to use alternate routes to access Wilsonville Road from the Phase 1 Bypass, but these do not result in significant impacts to the performance of the intersections.

Option 7 may result in minor increases to the construction schedule associated with redesign of the intersection. No additional right-of-way and no additional utility relocation costs are anticipated with this option.


Newberg-Dundee
BYPASS PROJECT
NE WILSONVILLE ROAD
OREGON 219
PHASE 1 BYPASS
Figure H Option 7
No Connection from EB Phase 1 Bypass
to Wilsonville Road
Raised Median
0
25
50
Feet
N
Folder=OR219_Springbrook_Wilsonville

Option 8 – No Through Traffic

This option was developed by ODOT and LHNA in early 2015. Under this option, no direct connection would be provided between Wilsonville Road and the Phase 1 Bypass. Rather, the eastbound and westbound through movements would be prohibited at the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection. For those travelers desiring to travel between Wilsonville Road and the Phase 1 Bypass, there are a number of routes that could be used:

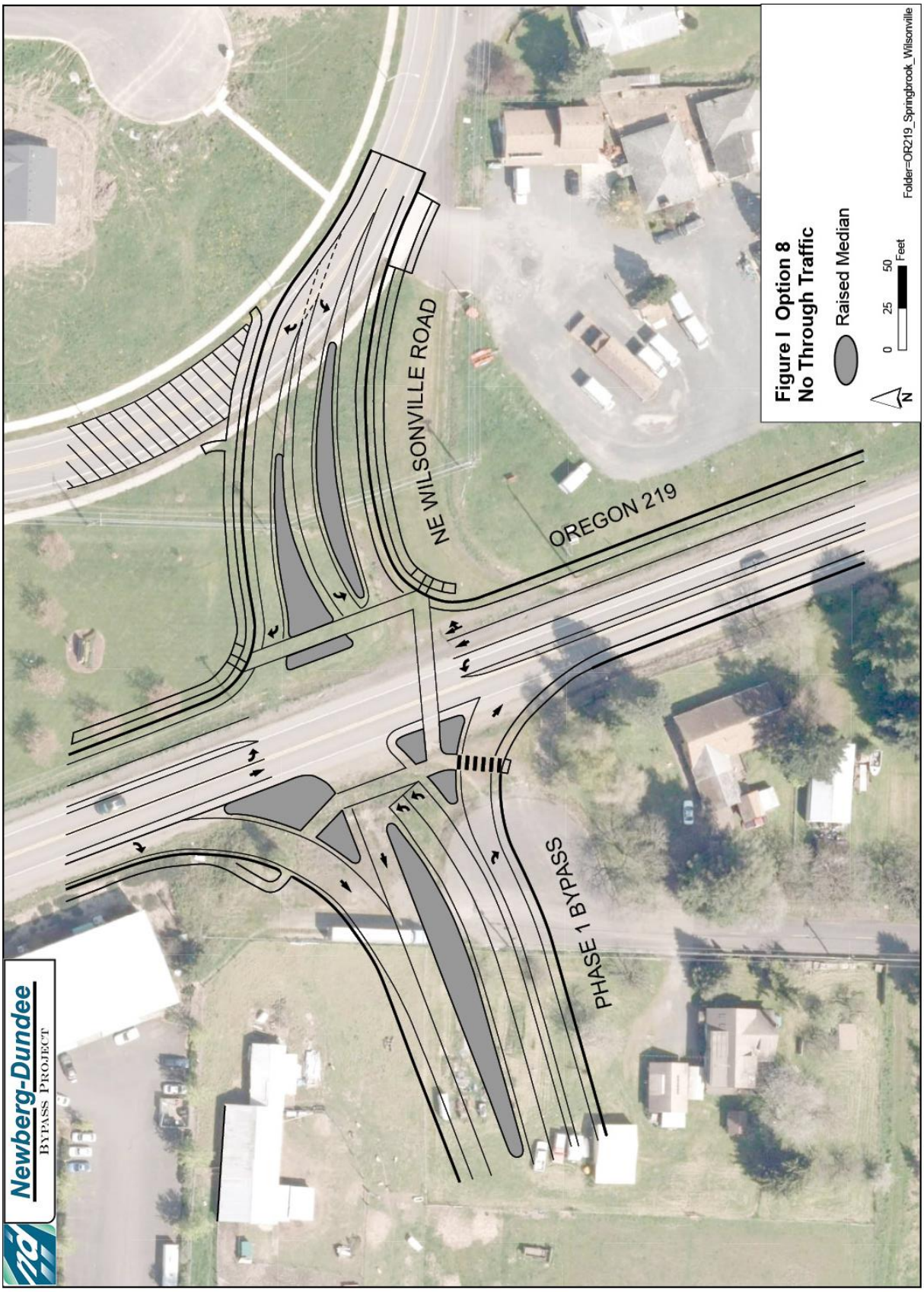
- Use a median opening to make a U-turn on Oregon 219 and then turn at the Oregon 219/Phase 1 Bypass/Wilsonville Road traffic signal.
- Make a U-turn at the Oregon 219/Springbrook Road/Industrial Parkway traffic signal and then turn at the Oregon 219/Phase 1 Bypass/Wilsonville Road traffic signal.
- Use Springbrook Road and McKern Court (currently Wilsonville Road). The traveler could then turn left into Springbrook Estates and follow the local street system to travel between Wilsonville Road and the Phase 1 Bypass. This would result in cut-through traffic in the Springbrook Estates neighborhood.
- Use Springbrook Road, Fernwood Road, Corral Creek Road, and Renne Road to travel between Wilsonville Road and Bypass.

As shown in Figure I, this option would require signalization as well as raised medians to prohibit eastbound and westbound through movements at the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection.

For the purposes of the traffic analysis, similar to Option 7, all travel between Wilsonville Road and the Phase 1 Bypass was assumed to use the Fernwood Road/Corral Creek/Renne Road route as this impacts the most number of study intersections.

Under this option, the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection would operate with a v/c ratio of 0.67. As shown in the Table 1, the operations at the remaining intersections would be similar to that experienced under Option 1. This option would require an estimated 50 vehicles (25 vehicles in each direction) per hour to use alternate routes to travel between Wilsonville Road and the Phase 1 Bypass; however, these trips do not result in significant impacts to the performance of the intersections.

Option 8 may result in minor increases to the construction schedule associated with intersection redesign. No additional right-of-way and no additional utility relocation costs are anticipated with this option.


Newberg-Dundee
BYPASS PROJECT
NE WILSONVILLE ROAD
OREGON 219
PHASE 1 BYPASS
Figure I Option 8
No Through Traffic
Raised Median
0 25 50 Feet
N
Folder=OR219_Springbrook_Wilsonville

Summary of Traffic Operations

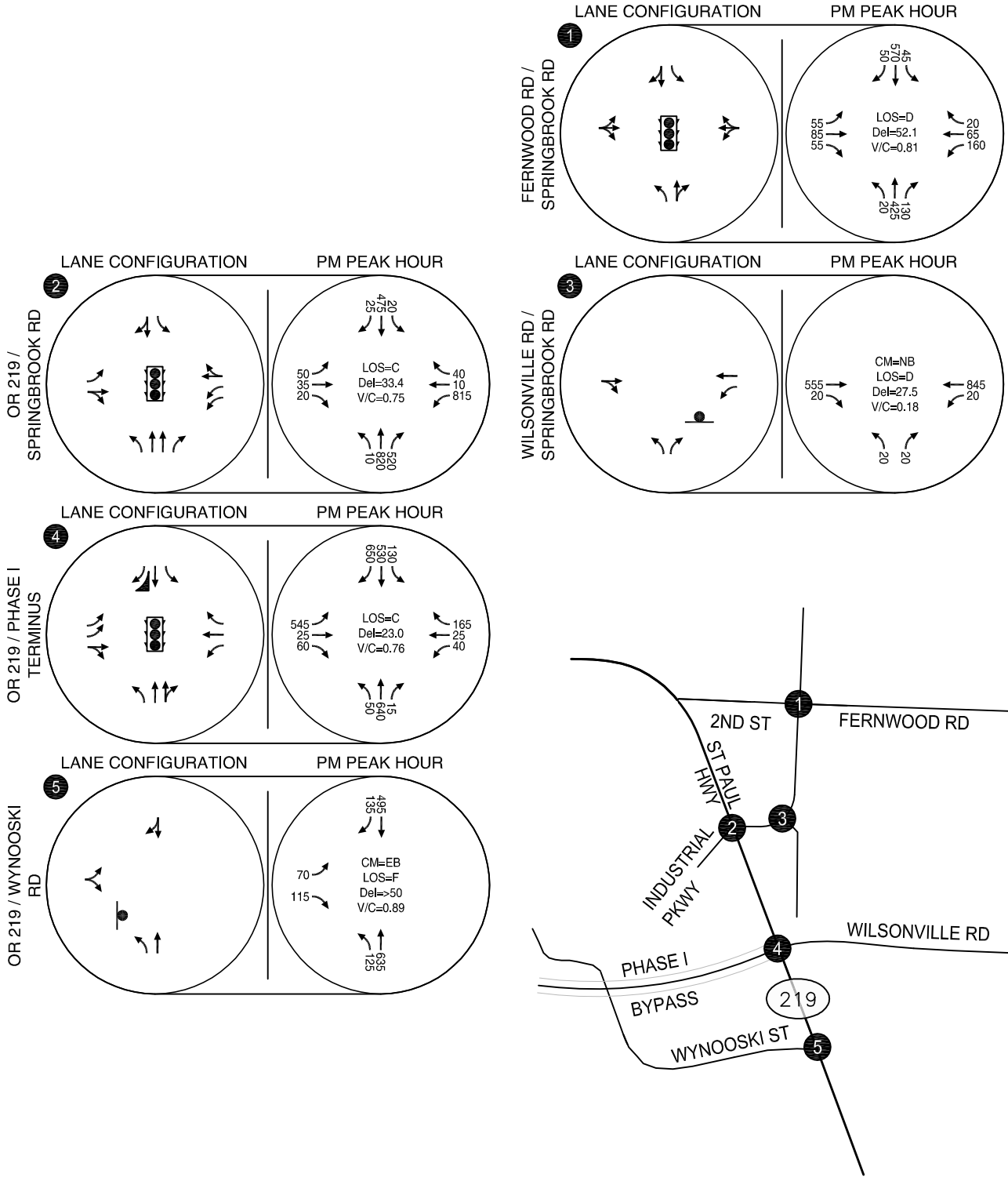
Table 1 summarizes the traffic operations at the four affected intersections associated with the design options considered.

Table 1. Opening Year of Bypass (2017) Intersection Operations

Intersection	Performance Standard	Option 1 Full Movement Intersection	Option 2 Traffic Signal at Springbrook/ Wilsonville Road Intersection	Option 3 Right In/Out at Springbrook/ Wilsonville Road Intersection	Option 4 FEIS Wilsonville Road Relocation	Option 5 Adolph Road Connection to Oregon 219	Option 6 Oregon 219 Roundabout	Option 7 No Connection from EB Phase 1 Bypass to Wilsonville Road	Option 8 No Through Traffic
OR 219/Springbrook Rd	0.80	0.75	0.71	0.75	0.75	0.75	0.75	0.75	0.76
OR 219/Bypass	0.65	0.76	0.68	0.70	0.74	0.74	0.66	0.76	0.67
OR 219/Wynooski Rd	0.80	0.89	0.89	0.89	0.93	0.58	0.89	0.89	0.89
Springbrook Rd/ Wilsonville Rd	0.90	0.18	0.68	0.63	0.18	0.18	0.18	0.19	0.20
Springbrook Rd/2nd St/ Fernwood Rd	0.90	0.78	0.78	0.85	0.78	0.78	0.78	0.79	0.81

Appendix A

Traffic Analysis Figures



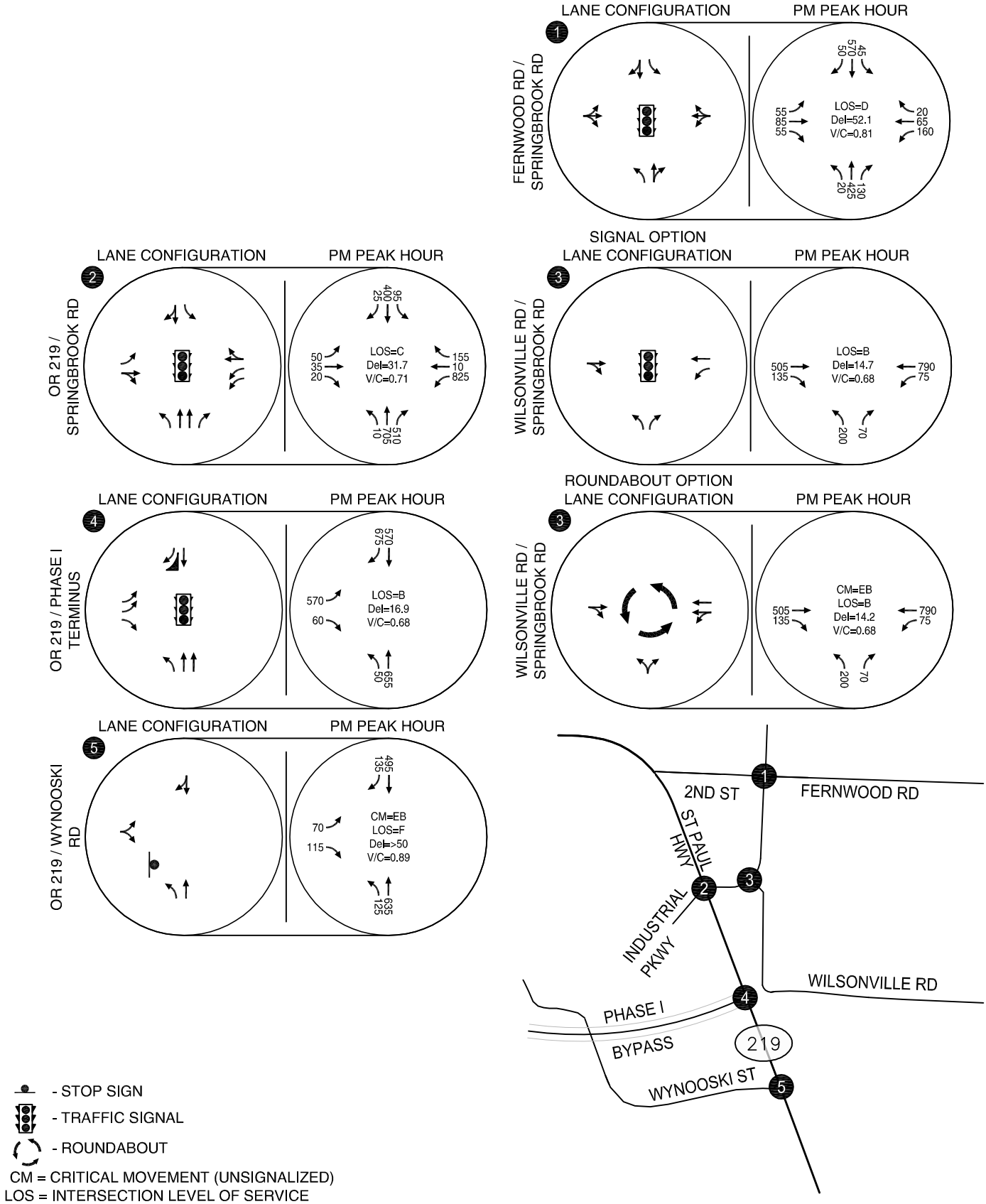
- STOP SIGN
- TRAFFIC SIGNAL

CM = CRITICAL MOVEMENT (TWSC)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED) / CRITICAL MOVEMENT LEVEL OF SERVICE (TWSC)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED) / CRITICAL MOVEMENT CONTROL DELAY (TWSC)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

Option 1 Traffic Conditions
Year 2016 PM Peak Hour
Newberg, Oregon

Figure
1

K:\H_Portland\proj\file\9372 - Newberg-Dundee Bypass\2015 August Analysis ZHB\9372_August_figs.dwg Nov 16, 2015 - 2:26pm - zbugg Layout Tab: Option 1



Option 2 Traffic Conditions
Year 2016 PM Peak Hour
Newberg, Oregon

Figure **2**

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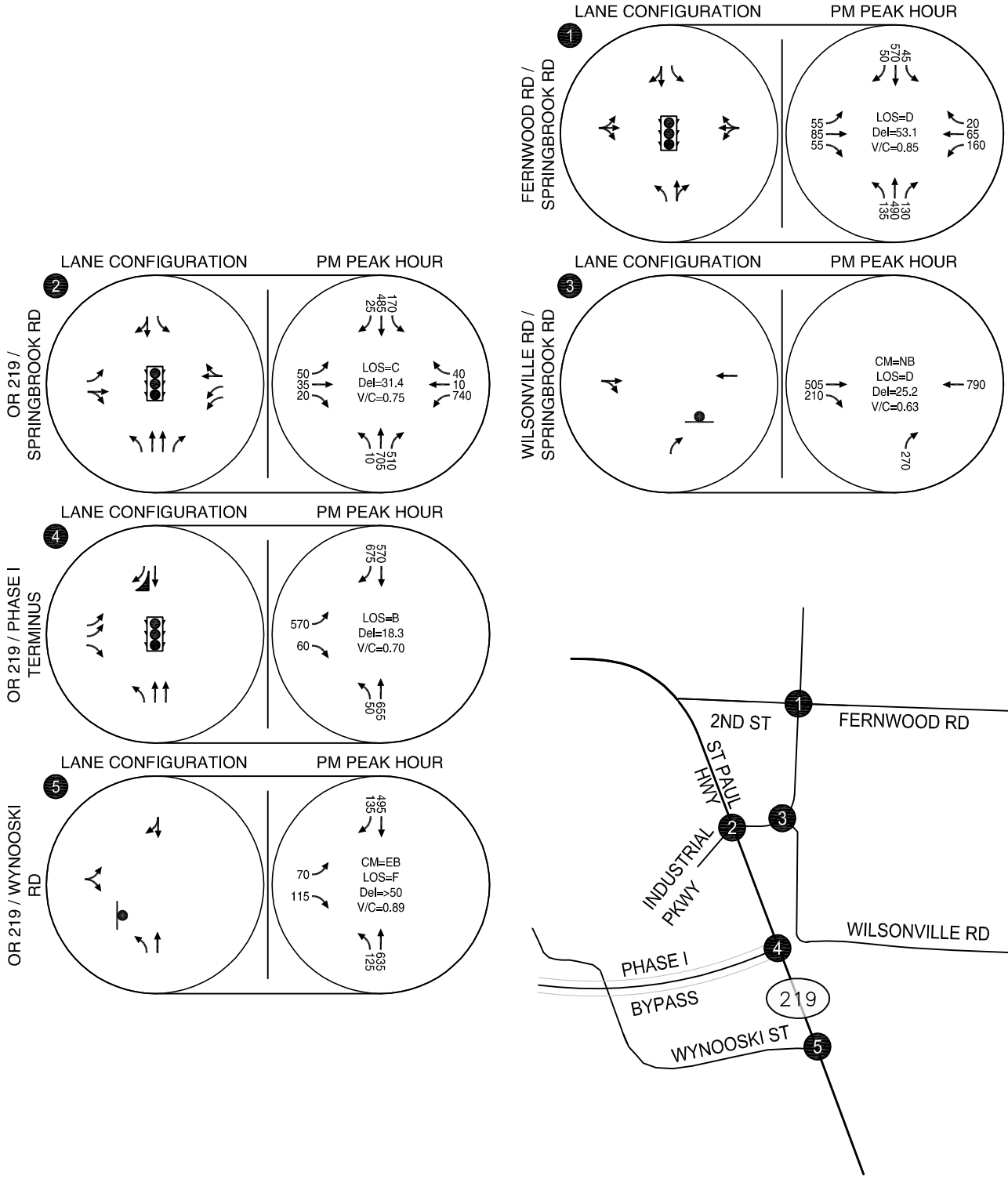

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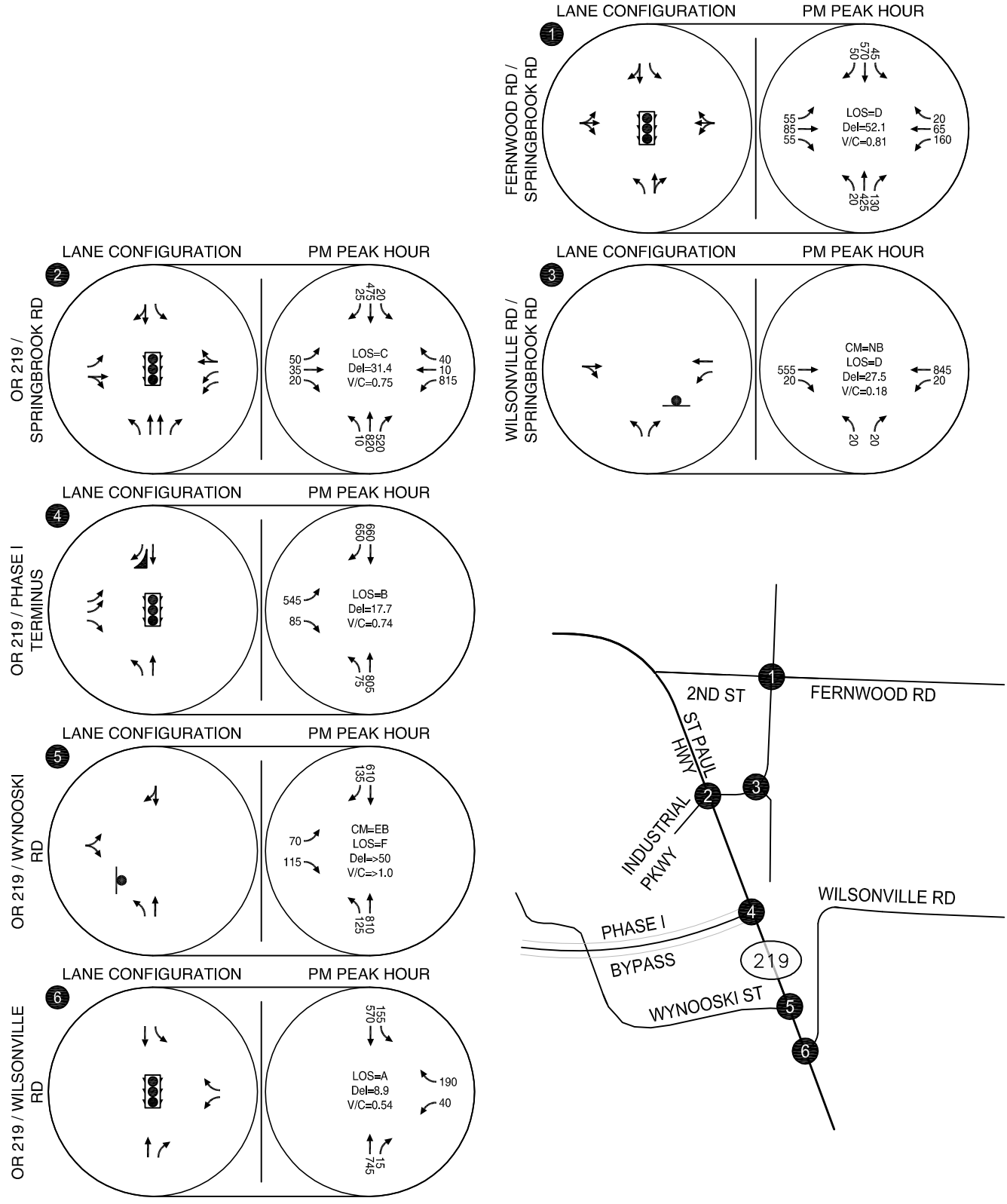
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

Option 3 Traffic Conditions
Year 2016 PM Peak Hour
Newberg, Oregon

Figure **3**

K:\H_Portland\proj\file\9372 - Newberg-Dundee Bypass\2015 August Analysis Z'HB\9372_August_figs.dwg Nov 16, 2015 - 2:27pm - zbugg Layout Tab: Option 3



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V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

Option 4 Traffic Conditions
Year 2016 PM Peak Hour
Newberg, Oregon

Figure
4

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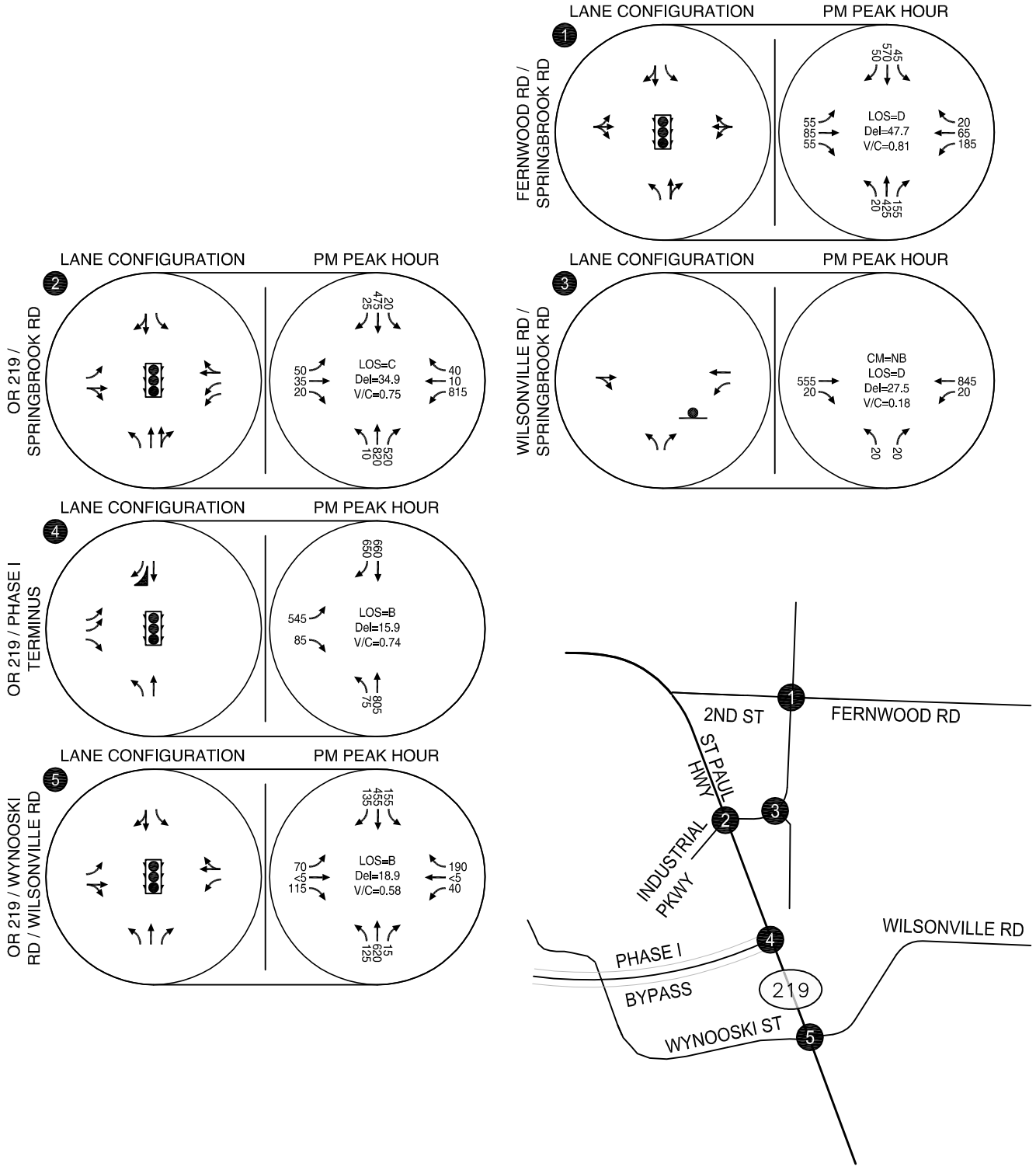

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Option 5 Traffic Conditions
Year 2016 PM Peak Hour
Newberg, Oregon

Figure
5

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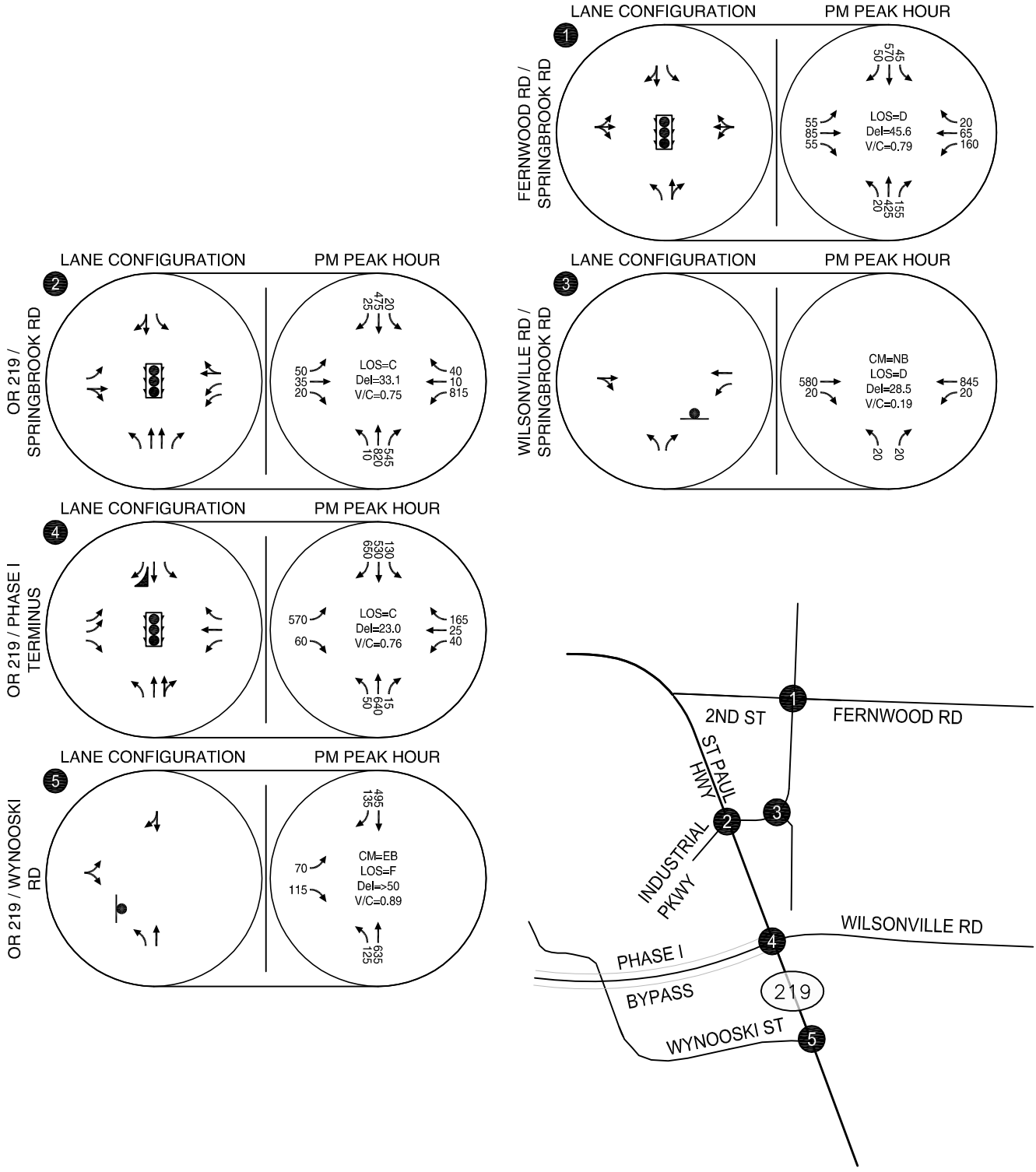

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Option 7 Traffic Conditions
Year 2016 PM Peak Hour
Newberg, Oregon

Figure **7**

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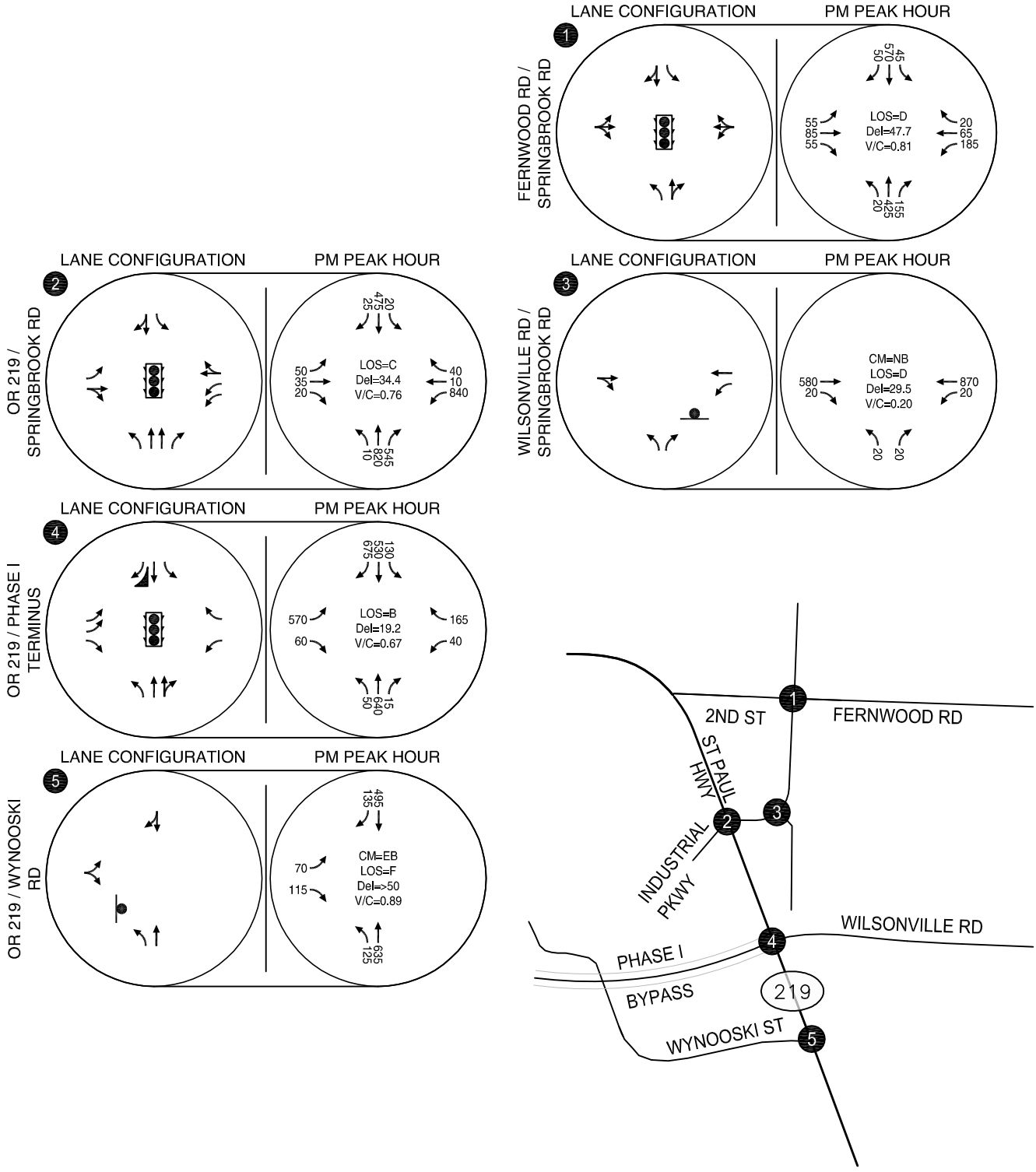

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Option 8 Traffic Conditions
Year 2016 PM Peak Hour
Newberg, Oregon

Figure **8**

K:\H_Portland\proj\file\9372 - Newberg-Dundee Bypass\2015 August Analysis ZHB\9372_August_figs.dwg Nov 16, 2015 - 2:27pm - zbugg Layout Tab: Option 8

City of Newberg

TYPE IV APPLICATION (LEGISLATIVE AMENDMENTS) -- 2015

OFFICE USE ONLY: (Pre-Application Conference is Optional for Type 2)
Total App. Fee: _____ File #: _____ Project Cost: _____
Less Pre-App Fee: _____ Date: _____

TYPES – PLEASE CHECK ALL THAT APPLY:

- [x] Comprehensive Plan Text Amendment
- [ ] Development Code Text Amendment
- [ ] Comprehensive Plan Map (Large Areas) Amendment
- [ ] Zoning Map (Large Areas) Amendment

APPLICANT INFORMATION:

APPLICANT: Oregon Dept. of Transportation, Region 2
ADDRESS: 885 Airport Rd. SE, Bldg. P, Salem, OR 97301-4788

GENERAL INFORMATION:

PROJECT NAME: Newberg Dundee Bypass, Phase 1G PROJECT LOCATION: Newberg, OR
PROJECT DESCRIPTION/USE: Widen Oregon 219, Springbrook Road and Wilsonville Road
MAP/TAX LOT NO.(i.e. 3200AB-400): R3221 2200 ZONE: M-2 SITE SIZE: _____ SQ. FT. ☐ ACRE: . ☐
COMP PLAN DESIGNATION: Industrial TOPOGRAPHY: Flat
CURRENT USE: Vacant
SURROUNDING USES:
NORTH: Vacant right-of-way SOUTH: Residential
EAST: Wilsonville Rd. right-of-way WEST: Oregon 219 right-of-way

SPECIFIC PROJECT CRITERIA AND REQUIREMENTS ARE ATTACHED

General Checklist:

- [x] Fees
- [x] Criteria Response
- [ ] Noticing Information
- [ ] Owner Signature/Letter of Consent
- [ ] Site Development Plan (12 reduced, 2 full sized)
- [ ] Title Report

Design Review Checklist:

- [ ] Site Analysis Diagram
- [ ] Existing Features/Natural Landscape
- [ ] Buffering/Screening
- [ ] Roadways/Utilities
- [ ] Architectural Drawings
- [ ] Drives/Parking/Circulation
- [ ] Signs/Graphics
- [ ] Traffic Study
- [ ] Landscape Plan
- [ ] Drainage
- [ ] Exterior Lighting
- [ ] Trash/Refuse Storage
- [ ] Special Needs for Handicapped

Preliminary Plat for Partition/Subdivision Checklist:

- [ ] Reproducible Final Plat (3 sets)
- [ ] Preliminary Approval Conditions
- [ ] Preliminary Plat File No.
- [ ] Phasing Plan (optional)

Minor Design Review: Duplex, Comm/Ind Checklist:

- [ ] Vicinity Map
- [ ] Landscape/Fencing Plan
- [ ] Proposed CCRs
- [ ] Tentative Plan
- [ ] Existing Features/Natural Landscape
- [ ] Traffic Study
- [ ] Architectural Drawings (optional)
- [ ] Roadways/Utilities/Drainage
- [ ] Phasing Plan (optional)

Variance Checklist:

- [ ] Landscape Plan
- [ ] Signs/Graphics

The above statements and information herein contained are in all respects true, complete, and correct to the best of my knowledge and belief. Tentative plans must substantially conform to all standards, regulations, and procedures officially adopted by the City of Newberg. All owners must sign the application or submit letters of consent. Incomplete or missing information may delay the approval process.

Kelly Amador 9-3-15
Applicant Signature Date

Kelly Amador
Print Name

Owner Signature Date

Print Name

Attachments: General Information, Fee Schedule, Criteria, Checklists

Newberg Dundee Bypass Transportation System Type IV Application (Legislative Amendments)

This document includes a description of the proposed Newberg Transportation System Plan (TSP) amendment and the criteria response for the amendment. There are no proposed text changes to the TSP, and the two figures included in this amendment request will replace those previously adopted as part of the 2013 TSP amendment.

Background

This plan amendment application is before the Newberg Planning Commission and the Newberg City Council to authorize changes to the road and lane configuration of Oregon 219 from north of the Springbrook Road intersection through the Wilsonville Road intersection as part of Phase 1G of the Newberg Dundee Bypass Project (Bypass). In late 2013, the Newberg City Council and Planning Commission approved Ordinance No. 2013-2766 to amend the Newberg TSP to reflect the Phase 1 alignment of the Newberg Dundee Bypass in east Newberg. The TSP amendment covered connecting Wilsonville Road to the Oregon 219/Phase 1 Bypass intersection. It also included discussion of improvements to the Oregon 99W/Springbrook Road intersection, widening of Springbrook Road, widening of Oregon 219, and adding a right turn lane to Wynooski Road; these were already part of the Newberg TSP. The 2013 TSP Amendment included the number of lanes on specific roads and at improved intersections. The lane configuration on Oregon 219 has been changed during the preparation of final design plans, therefore a TSP amendment is needed to reflect the project as it will be constructed.

During the 2013 TSP Amendment approval process, the Ladd Hill Neighborhood Association (LHNA) provided written and verbal testimony against the TSP amendment to reconnect Wilsonville Road to Oregon 219 at the Phase 1 Bypass intersection. LHNA, Clackamas County, and the City of Wilsonville have expressed concerns that a through movement connection would raise the potential for increased traffic on Wilsonville Road. The group believes Wilsonville Road will be used as a new route to get to I-5 from Oregon 219 in Newberg and that the additional traffic will cause additional safety problems along Wilsonville Road between Newberg and Wilsonville..

Following approval of the TSP amendment in 2013, ODOT and LHNA have continued to investigate solutions to the LHNA concerns regarding the use of Wilsonville Road as a new route to get to I-5 from Oregon 219 in Newberg. Clackamas County and the City of Wilsonville have also continued to express similar concerns about increased traffic on Wilsonville Road to ODOT and support development of a reasonable design alternative that limits traffic on Wilsonville Road. As noted in the last TSP amendment, the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection is an interim connection that is within the footprint of the Bypass and the Oregon 219 Interchange as shown in the Newberg Comprehensive Plan and TSP. When the full Bypass and Oregon 219 Interchange are built in a future phase, Wilsonville Road will be rerouted south to connect to Oregon 219 near Wynooski Road. The Oregon 219/Phase 1 Bypass/Wilsonville Road intersection will remain in place until such time as the Bypass and the Oregon 219 Interchange are funded and constructed.

Transportation System Plan Amendment

This TSP amendment application reflects changes to the road and lane configuration of Oregon 219 north of the Springbrook Road intersection through the Wilsonville Road intersection made in the ODOT final roadway design process and changes to the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection. The changes include:

1. Remove one of the proposed southbound through lanes on Oregon 219 and remove one of the proposed southbound right turn lanes (between Springbrook Road and the Phase 1 Bypass). (See Figure 1.)

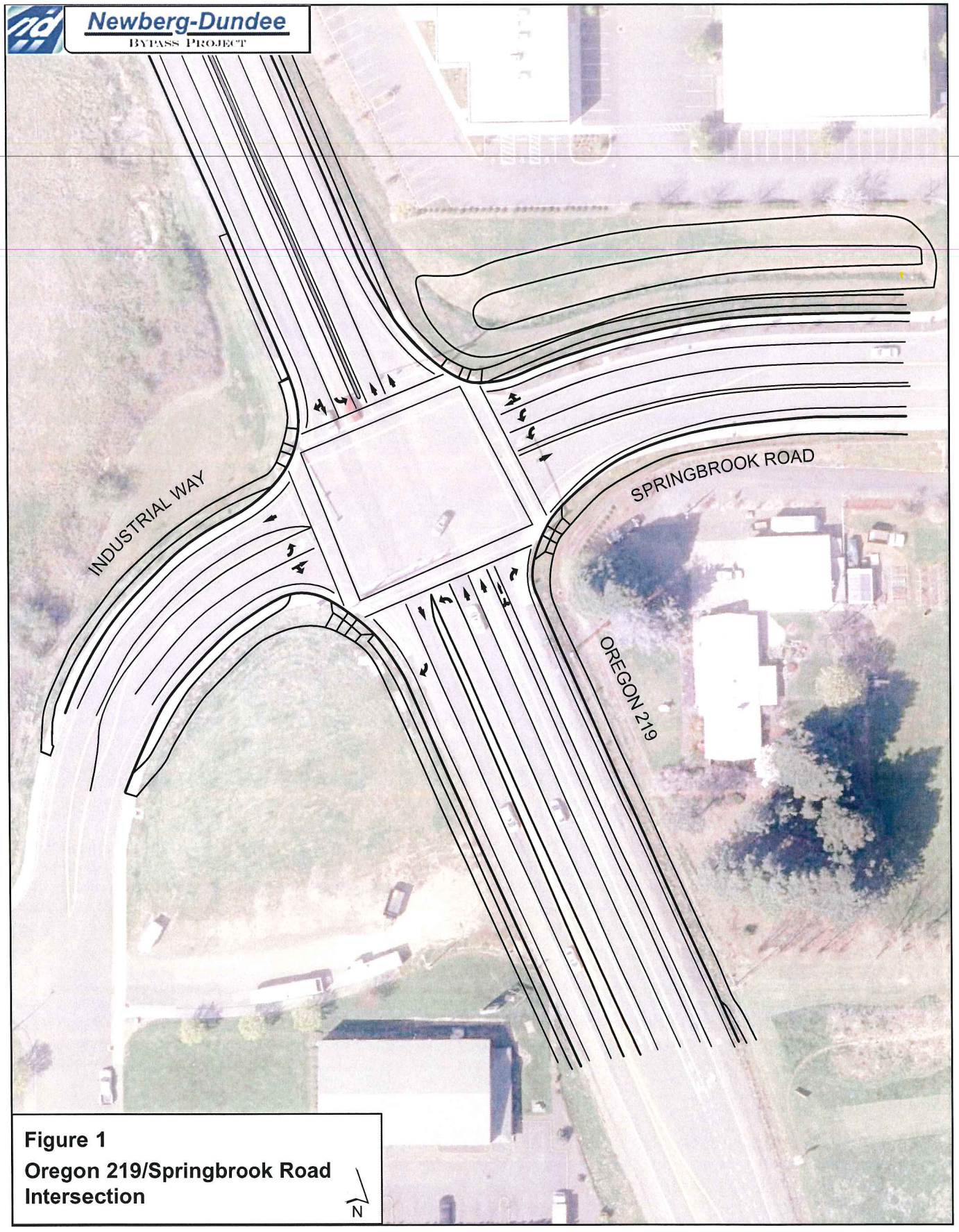
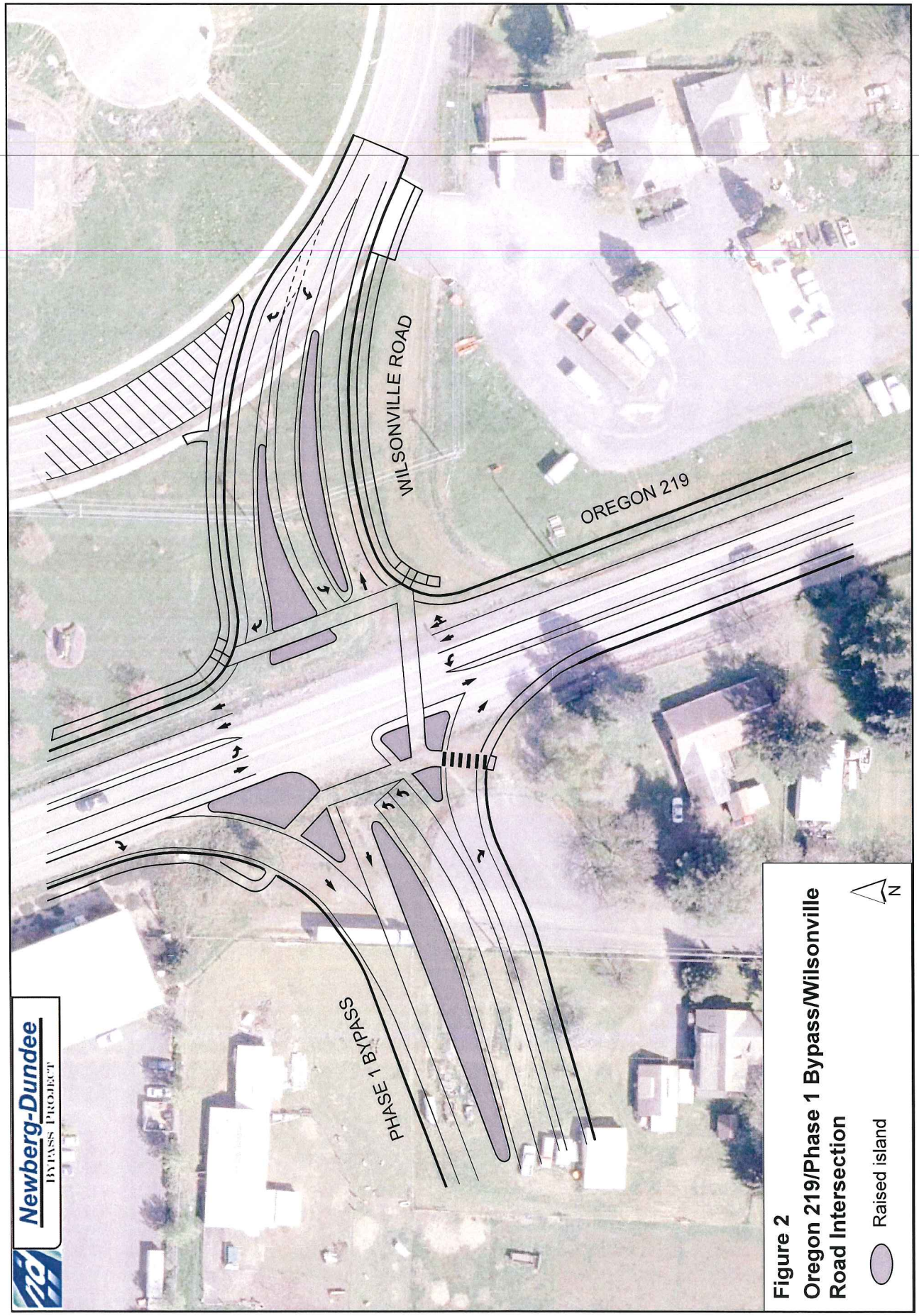


Figure 1
Oregon 219/Springbrook Road Intersection


Newberg-Dundee
BYPASS PROJECT
WILSONVILLE ROAD
OREGON 219
PHASE 1 BYPASS
N
Figure 2
Oregon 219/Phase 1 Bypass/Wilsonville Road Intersection
Raised island

2. Change the intersection design of the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection to a "No Thru Traffic" design. With the "No Thru Traffic" design, westbound traffic on Wilsonville Road could only turn right or left onto Oregon 219, and eastbound traffic on the Phase 1 Bypass could only turn right or left onto Oregon 219. (See Figure 2.)

Removal of Southbound Through Lane and One Right Turn Lane on Oregon 219

During the final design process, ODOT reviewed all roadway lane and design configurations presented in the Final EIS Preferred Alternative to make sure all design and operational standards and practices were adhered to and followed. ODOT final design staff reviewed the intersection design and lane configuration on Oregon 219 between Springbrook Road and the Phase 1 Bypass/Wilsonville Road. Traffic safety concerns were identified due to the substandard merge and weave distance (about 1000 feet) between the two intersections. These concerns centered on Springbrook Road southbound traffic turning left onto Oregon 219 from the dual left turn lanes being in the correct lane to enter the Phase 1 Bypass or continue south on Oregon 219. ODOT's analysis showed that with two through lanes and two left turn lanes, vehicles could get trapped in the wrong lane and have to make multiple merges to get into the correct lane. There is not enough distance between the two intersections to perform these movements safely. The solution was to remove one southbound travel lane and right turn on Oregon 219, create a dedicated right turn lane onto the Phase 1 Bypass, and direct left-turning vehicles into the correct left turn lane with signage further north on Springbrook Road.

As the new Oregon 219 lane configuration was developed, a traffic analysis was performed to understand how reducing the number of lanes affected the traffic performance of the Oregon 219/Springbrook Road intersection. The Oregon Highway Plan (OHP) volume to capacity performance standard of this existing intersection is 0.80. The volume to capacity ratio of the revised intersection design is 0.94 in the opening year of the Phase 1 Bypass. The performance of the intersection exceeds the ODOT performance standard by about 10 percent. The higher volume to capacity ratio is a result of increased travel demand on the Oregon 219 southbound approach to the Oregon 219 intersection with Springbrook (see Attachment A).

ODOT evaluated trade-offs between traffic operations and safety relative to the intersection mobility performance standard. ODOT decided that traffic operation and safety concerns were more important to address in the intersection design than the performance standard of the intersection. The June 16, 2015, Traffic Signal Approval letter (see Attachment A) states that "These modifications are part of the Newberg – Dundee By-pass Project (ODOT Key No. 17099). They are necessary to accommodate traffic routed over Springbrook Road as an interim segment of the Bypass until such time in the future the final east phase of the bypass is constructed." The revised intersection design also reduced right-of-way impacts along Oregon 219 and reduced the overall cost of Phase 1G. The original design with two southbound through lanes and two southbound right turn lanes would have caused a number of business displacements and/or building modifications in the industrial park west of Oregon 219 between the Springbrook Road and Phase 1 Bypass/Wilsonville Road intersections.

Phase 1 Bypass/Wilsonville Road at Oregon 219 Intersection "No Thru Traffic" Design

Following approval of the TSP amendment in 2013, ODOT and LHNA have continued to investigate solutions to the LHNA concerns regarding Wilsonville Road. In early 2015, ODOT and LHNA developed a "No Thru Traffic" design for the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection. With the "No Thru Traffic" design, westbound traffic on Wilsonville Road could only turn right or left onto Oregon 219 and eastbound traffic on the Phase 1 Bypass could only turn right or left onto Oregon 219. No direct traffic movements between the Phase 1 Bypass and Wilsonville Road would be allowed with the redesigned intersection. ODOT and LHNA have designed the "No Thru Traffic" to stay within existing right of way and meet ODOT design standards. Channelization of the intersection is achieved by adding a number of raised medians and islands to the intersection design.

A traffic analysis was preformed to understand the traffic performance of "No Thru Traffic" design. The ODOT volume to capacity performance standard of this intersection is 0.65. The performance standard reflects the requirements in the ODOT Highway Design Manual (HDM) for new intersections added to the state highway system. The volume to capacity ratio of the "No Thru Traffic" design is 0.67 in the opening year of the Phase 1 Bypass. If the intersection was in place today, the OHP volume to capacity performance standard would be 0.80. While the "No Thru Traffic" design slightly exceeds the HDM performance standard, it is well within the OHP performance standard in 2017, the opening year of the Phase 1 Bypass. The intersection performance analysis is attached (see Attachment B).

In conclusion, ODOT requests approval of a TSP amendment to enable construction of the Phase 1 Bypass modifications described herein. ODOT will work with the City after completion of the Newberg TSP update to address the performance standards at the Oregon 219 intersections with both Springbrook and Wilsonville Roads and at several other state highway intersections elsewhere within Newberg that are not expected to meet the current OHP mobility standards in 2035. Following City adoption of the updated TSP, ODOT will prepare a package of alternative mobility standards to submit to the Oregon Transportation Commission (OTC) for adoption into the OHP. This change in the OHP will establish new mobility performance standards that match ODOT's and the City's expectations for transportation system performance in 2035. These expectations will be based on local and regional population and employment growth forecasts and implementation of the transportation system improvements that are identified in the updated TSP as reasonably likely to be constructed during the 20-year planning horizon given existing and anticipated funding constraints.

ODOT commits, with the City's assistance, to continue, to monitor the performance of the local street network along the Bypass route. If deficiencies above the anticipated impact of this amendment are identified, ODOT further commits to pursuit of a project as appropriate mitigation for that impact.

Consistency with Statewide Planning Goals, City of Newberg Comprehensive Plan, and Newberg Transportation System Plan

Statewide Planning Goals

The proposed TSP and related Comprehensive Plan map amendments are consistent with all applicable Statewide Planning Goals.

The goals identified below are the only Statewide Planning Goals applicable to the changes to the road and lane configuration of Oregon 219 from north of the Springbrook Road intersection through the Wilsonville Road intersection. Goals not identified do not apply.

A. Goal 1 (Citizen Involvement)

Goal 1 requires the opportunity for citizens to be involved in all phases of the planning process. Generally, Goal 1 is satisfied when a local government follows the public involvement procedures set out in its acknowledged comprehensive plan and land use regulations.

The City of Newberg Comprehensive Plan requires the city maintain a Citizen Involvement Program that offers citizens the opportunity for involvement in all phases of the planning process. Compliance with these regulations results in compliance with Goal 1.

B. Goal 2 (Land Use Planning), Part I

Goal 2, Part I requires that actions related to land use be consistent with acknowledged comprehensive plans of cities and counties. It is specifically noted that the City of Newberg updated the Comprehensive Plan to include the Newberg Dundee Bypass and Phase 1 realignment of Wilsonville Road.

Goal 2, Part I also requires coordination with affected governments and agencies, evaluation of alternatives, and an adequate factual base. In developing the changes to the road and lane configuration of Oregon 219 from north of the Springbrook Road intersection through the Wilsonville Road intersection, ODOT engaged in coordination efforts with planners, officials, and other representatives of Newberg through review of ODOT Final Design plan sets at the Design Acceptance Package (30%), Preliminary Plan (60%), and Advanced Plan (90%) phases.

E. Goal 5 (Open Spaces, Scenic and Historic Areas, and Natural Resources)

Goal 5 requires local governments to adopt programs to protect natural resources and conserve scenic, historic, and open space resources for present and future generations as provided in the Oregon Department of Land Conservation and Development's Goal 5 administrative rule, OAR 660, Division 23.

Under OAR 660-023-0250(3)(b), local governments are not required to apply Goal 5 in post-acknowledgment plan amendment proceedings unless the amendment affects a Goal 5 resource to allow new uses that could be conflicting uses with a particular significant Goal 5 resource site. The changes to the road and lane configuration of Oregon 219 from north of the Springbrook Road intersection through the Wilsonville Road intersection do not impact any resource sites inventoried and designated as significant under Goal 5. Therefore, Goal 5 does not apply.

F. Goal 6 (Air, Water and Land Resources Quality)

Goal 6 addresses the quality of air, water, and land resources. In the context of a comprehensive plan amendment, a local government complies with Goal 6 by explaining why it is reasonable to expect that the proposed uses authorized by the plan amendment will be able to satisfy applicable federal and state environmental standards, including air and water quality standards. The changes to the road and lane configuration of Oregon 219 from north of the Springbrook Road intersection through the Wilsonville Road intersection will not affect air quality in Newberg and will impact water resources by adding a smaller amount of impervious surface to the watershed area than the 2013 TSP amendment.

The changes to the road and lane configuration of Oregon 219 from north of the Springbrook Road intersection through the Wilsonville Road intersection are necessary to ensure safe and efficient traffic operation in the first step (Phase 1) of implementing the Bypass project. The Bypass project is an approved project in the City of Newberg's acknowledged TSP and Comprehensive Plan and will improve air quality by substantially relieving traffic congestion in Newberg. Water quality impacts will be mitigated by stormwater treatment facilities included in Phase 1G. This amendment will facilitate implementation of Phase 1 and is consistent with the City's TSP and Comprehensive Plan findings of compliance with Goal 6.

H. Goal 8 (Recreational Needs)

Goal 8 provides for local governments to meet the recreational needs of the citizens of Oregon. The Bypass project, including the changes to the road and lane configuration of Oregon 219 from north of the Springbrook Road intersection through the Wilsonville Road intersection, will further Goal 8 objectives by improving access to recreational destination areas such as the Oregon coast, Yamhill County wineries, and the Spirit Mountain Casino. The proposed road realignment will not impact existing park or recreational lands.

I. Goal 9 (Economic Development)

Goal 9 requires local governments to adopt comprehensive plans and policies that "contribute to a stable and healthy economy in all regions of the state." The City of Newberg's Comprehensive Plan has been acknowledged to comply with Goal 9. The Phase 1 Bypass project, including the changes to the road and lane configuration of Oregon 219 from north of the Springbrook Road intersection through the Wilsonville

Road intersection will improve mobility and accessibility generally, and freight movement in particular, throughout the Newberg-Dundee urban area, thus resulting in substantially reduced congestion and fewer hours of delay.

J. Goal 10 (Housing)

Goal 10 applies inside urban growth boundaries. The changes to the road and lane configuration of Oregon 219 from north of the Springbrook Road intersection through the Wilsonville Road intersection is within land zoned as medium-density residential and industrial and there are no impacts to housing. Therefore, this action is consistent with Goal 10.

L. Goal 12 (Transportation)

Goal 12 requires local governments to "provide and encourage a safe, convenient, and economic transportation system." Goal 12 is implemented through the Transportation Planning Rule (TPR), OAR 660, Division 12. The Newberg Dundee Bypass Project is an approved project in the City of Newberg's acknowledged TSP. The changes to the road and lane configuration of Oregon 219 from north of the Springbrook Road intersection through the Wilsonville Road intersection reflect final design decisions that are necessary to address traffic operation and safety to implement Phase 1G of the project. The TPR addresses project development activities. Changes in the number of travel lanes and intersection performance standards are not land use decisions. The changes to the road and lane configuration of Oregon 219 from north of the Springbrook Road intersection through the Wilsonville Road intersection are consistent with Goal 12 and with the TPR requirements. ODOT will address intersection performance on Oregon 219 by application of alternative mobility standards as part of Newberg TSP update process.

M. Goal 13 (Energy Conservation)

Goal 13 directs cities and counties to manage and control land and uses developed on the land to maximize the conservation of all forms of energy, based on sound economic principles.

The Bypass project, including Phase 1 and changes to the road and lane configuration of Oregon 219 from north of the Springbrook Road intersection through the Wilsonville Road intersection, are intended to improve statewide and regional mobility through the area and to make existing Oregon 99W more accessible for local and regional traffic. The project will help relieve much of the substantial traffic congestion that already exists along Oregon 99W. Facilitating the smooth flow of traffic at acceptable levels of service helps conserve fuel.

Compliance with City of Newberg's Comprehensive Plan and Transportation System Plan

In addition to compliance with applicable statewide planning goals, TSP amendments must comply with applicable local comprehensive plan policies (including relevant policies in adopted transportation system plans) and with applicable standards in local land use regulations.

The findings below address only those policies and associated actions that are directly applicable to the changes to the road and lane configuration of Oregon 219 from north of the Springbrook Road intersection through the Wilsonville Road intersection.

A. Citizen Involvement

Policy A, Citizen Involvement, notes that the City of Newberg will continue to implement an ongoing citizen involvement program that provides residents with the opportunity to be involved in all phases of the planning process. For the changes to the road and lane configuration of Oregon 219 from north of the Springbrook Road intersection through the Wilsonville Road intersection, the city will provide public notice to affected property owners, opportunities for testimony at public hearings, and appeal of local decisions.

B. Land Use Planning

The goal is to maintain an ongoing land use planning program to implement statewide and local goals. The program shall be consistent with natural and cultural resources and needs.

The changes to the road and lane configuration of Oregon 219 from north of the Springbrook Road intersection through the Wilsonville Road intersection are consistent with the land use planning goal because it will help implement Phase 1 of the Bypass which is an approved project in the Newberg TSP and Comprehensive Plan.

H. The Economy

The goal is to develop a diverse and stable economic base.

The Phase 1 Bypass Project, including the changes to the road and lane configuration of Oregon 219 from north of the Springbrook Road intersection through the Wilsonville Road intersection, will improve mobility and accessibility generally, and freight movement in particular, throughout the Newberg Dundee urban area, thus resulting in substantially reduced congestion and fewer hours of delay. This supports the goal of developing a diverse and stable economic base.

M. Energy

Goal M, Energy, is to conserve energy through efficient land use patterns and energy-related policies and ordinances.

The Bypass project, including Phase 1, including the changes to the road and lane configuration of Oregon 219 from north of the Springbrook Road intersection through the Wilsonville Road intersection, are intended to improve statewide and regional mobility through the area and to make existing Oregon 99W more accessible for local and regional traffic. The project will help relieve much of the substantial traffic congestion that already exists along Oregon 99W and will conserve fuel.

There is a public need for a change of the kind in question.

The public need for this amendment is only to clarify changes to the road and lane configuration of Oregon 219 from north of the Springbrook Road intersection through the Wilsonville Road intersection that occurred as part of the final design project development process.

The need will be best served by changing the classification of the particular piece of property in question as compared with other available property.

There is no reclassification of the property in question. The action is entirely within the Newberg city limits and urban growth boundary.

Newberg TSP Text Change Proposal

There are no proposed text changes to the TSP, and the two figures included in this amendment request will replace those previously adopted as part of the 2013 TSP amendment.

Attachment A

OR 219 at Springbrook/Industrial Parkway

FEIS Build - Dual Through lanes on southbound approach
ODOT Build - Current Design Configuration

Cycle length - 110 seconds - Each option optimized

2016 v/c ratio

	Intersection	Eastbound		Westbound		Northbound			Southbound		
		Left	Thru/Rt	Left	Thru/Rt	Left	Thru	Right	Left	Thru/Rt Thru	Right
Standard	0.8	------	------	------	------	------	------	------	------	------	------
No Build @	0.66	0.65	0.27	0.74	0.15	0.04	0.74	0.19	0.29	0.61	------
FEIS build	0.69	0.57	0.23	0.66	0.05	0.11	0.86	0.4	0.27	0.79	------
ODOT Build	0.94	0.57	0.23	0.84	0.05	0.14	0.67	0.4	0.15	1.18	------

@ - Volumes for Southbound Through are about 350 vehicles less thatn any of the build options.

From Analysis file - not memo reported
In Standard
Over Standard
Over Capacity

Queue Lengths - Simulation - 5 runs (feet)

Configuration	Cycle Length	Eastbound		Westbound			Northbound				Southbound		
		Left	Thru/Rt	Left	Left	Thru/Rt	Left	Thru	Thru	Right	Left	Thru/Rt Thru	Right
Link length	------	100	1042	425	2300	300	310	1256	1256	360	360	5013	150 +/-
ODOT Build	110 sec	86	101	445	533	198	22	286	287	144	420	3615	185
	Acceptable ?	Yes	Yes	Yes **	Yes	Yes	Yes	Yes	Yes	Yes	Yes ***	NO ****	Yes **
ODOT Build	120 sec	90	96	399	416	181	16	286	296	126	492	3136	151
	Acceptable ?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes ***	NO ****	Yes
ODOT Build	145 sec	91	99	444	555	186	17	317	318	122	358	1392	144
	Acceptable ?	Yes	Yes	Yes **	Yes	Yes	Yes	Yes	Yes	Yes	Yes	NO ****	Yes

Yes — Queues are within the link length
Yes ** — While queue is long, it is within 1 or 2 vehicle lengths
Yes *** — Queues spill outside of lane, but only about 5-6 can lengths
NO **** — Long queue even though it fits on the link

INTEROFFICE MEMO

TECHNICAL SERVICES
Traffic-Roadway Section
Office Phone: (503) 986-3568
Fax: (503) 986-3749

DATE: June 16, 2015

File Code: Hwy 140, MP 21.60

TO: Dorothy Upton, P.E.
Region 2 Traffic Engineer

FROM: Bob Pappe, P.E., P.L.S.
State Traffic/Roadway Engineer

SUBJECT: **Traffic Signal Modifications**
OR 219 @ Springbrook Road/Industrial Drive
City of Newberg
Yamhill County

We have reviewed your request for signal modifications at the intersection of OR 219 (Hillsboro – Silverton Hwy) and Springbrook Road/Industrial Drive in Yamhill County. The proposed modifications consist of dual left turn lanes from Springbrook Road and an additional through lane on OR 219 northbound. The existing U-Turn on OR 219 from the southbound left turn lane will remain in place. These modifications are part of the Newberg – Dundee By-Pass Project (ODOT Key No. 17099). They are necessary to accommodate traffic routed over Springbrook Road as an interim segment of the Bypass until such time in the future the final east phase of the bypass is constructed.

In accordance with OAR 734-20-0410, your request is approved. The approval is based on our review of the information your office submitted. The approval has the following stipulations:

- The design and operation will be according to the **Manual on Uniform Traffic Control Devices** (2009 edition), ODOT'S **Traffic Signal Policy and Guidelines,** and ODOT's **Traffic Signal Design Manual.**
- Lane configuration and phasing shall be designed according to the attached Preliminary Signal Operations Design Reports signed by the Region Traffic Operations Engineer.
- This office must approve the final signal design plans.

If you have concerns or questions regarding this approval, please contact Craig Black at 503-986-3576.

CB/lbm

Attachment: Preliminary Signal Operations Design Reports

Electronic Copies to:
Craig Black, Traffic Operations
Angela Kargel, Region 2 Traffic Manager
Scott Cramer, Traffic Standards
Julie Infante, Region 2 Traffic

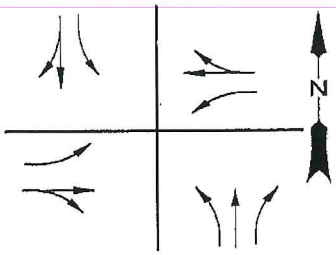
Preliminary Signal Operations Design (Revision 2)

Region 2
Traffic Unit
Phone: (503) 986-2826

Project: Newberg-Dundee Bypass (Phase IG) Key #: 17099 Date: 09/23/14
Location: OR 219 at Springbrook Rd/Industrial Way City: Newberg County: Yamhill
Highway: OR 219 Hillsboro-Silverton Hwy No: 140 Mile Point: 21.60
Project- Signal Modification

Existing Information

Lane Configuration



Crosswalks

- [x] North Approach
- [x] South Approach
- [x] East Approach
- [x] West Approach

Bike Lanes

- [ ] North Approach
- [x] South Approach
- [ ] East Approach
- [ ] West Approach

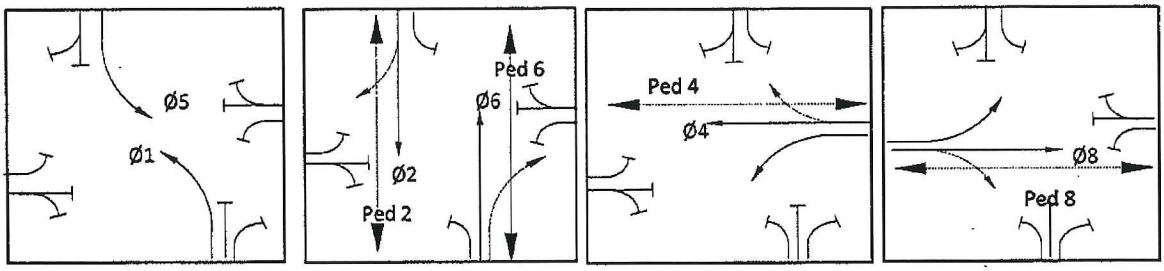
Traffic Control

- [ ] 2-Way Stop
- [ ] All-Way Stop
- [x] Signalized

Posted Speed Limit

Highway: 45 mph
Side Street: 35/25 mph

Existing Vehicle and Pedestrian Phasing (if Signalized)



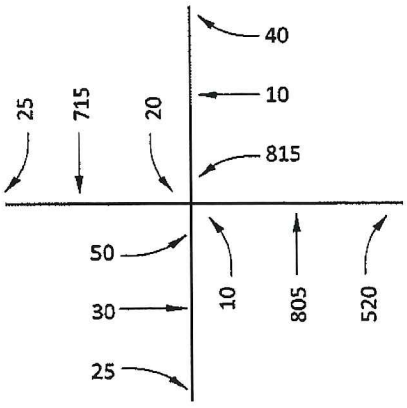
Ø1+Ø5 Ø2+Ø6 Ø4 Ø8

U-turn allowed on Phase 5

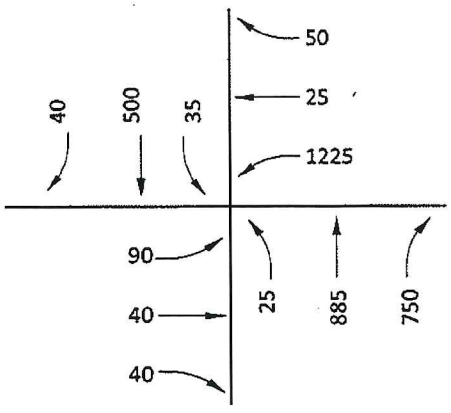
Traffic Volumes

PM

Opening Year 2016



Future Year 2035*



Other Relevant Information

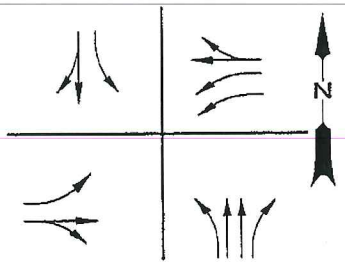
*Note: the rest of the bypass is planned to be built before 2035

Preliminary Signal Operations Design (Revision 2)

Region 2
Traffic Unit
Phone: (503) 986-2826

Recommended Signal Design

Lane Configuration



Crosswalks

- ☑ All crosswalks provided
- ☐ Following crosswalks closed
  - ☐ North Approach
  - ☐ South Approach
  - ☐ East Approach
  - ☐ West Approach

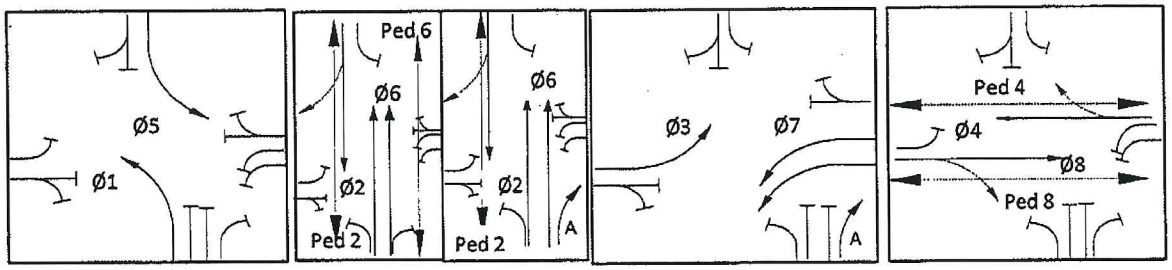
Bike Lanes/Paths

- ☐ North Approach
- ☑ South Approach
- ☑ East Approach*
- ☑ West Approach*

Other Required Features

- ☑ Signal interconnect to: OR 219 @ OR 18, Springbrook @ Fernwood
- ☑ Communication type: ethernet over fiber
- ☑ 2070 controller
- ☑ Illumination
- ☑ Audible/accessible pedestrian signals
- ☐ Railroad preemption
- ☐ Other: _____

Recommended Vehicle and Pedestrian Phasing



Ø1+Ø5 | Ø2+Ø6 | Ø3 +Ø7 | Ø4+Ø8

OLA = 6 + 7 - 6 PED

Notes regarding right turn lane control

Northbound right turn: protected w/overlap
Southbound right turn, eastbound right turn, westbound right turn: permitted

Primary considerations used to determine left turn phasing

All left turns are protected
U-turn allowed on Phase 5

Considerations for mitigating bike-vehicle conflicts (if any)

*Multi-use path (project build) uses south side of this intersection. Bikes and peds to use crosswalk (Ped 8).

Design Vehicle Information (to be confirmed with Roadway Designer)

☑ Design for

Design Vehicle: WB-67

If Bus or Other, specify: _____

☐ Accommodate

Recommended by: _____
Region 2 Signal Operations Engineer

Attachment B

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING / PLANNING
610 SW Alder Street, Suite 700, Portland, OR 97205 P 503.228.5230 F 503.273.8169

MEMORANDUM

Date: August 18, 2015 Project #: 9372

To: Bill Ciz, Parametrix

From: Sarah Miller and Wade Scarbrough

Project: Newberg Dundee Bypass

Subject: Modified Bypass Intersection Operations

Per your request, this memorandum summarizes our preliminary analysis of the revised ODOT plans for the Oregon 219/Bypass/Wilsonville Road intersection. We understand that the conceptual design for the intersection now reflects three primary modifications from what we previously analyzed:

- The southbound Oregon 219 approach will include a right-turn, a through lane and a left-turn lane.
- The westbound Wilsonville Road approach will include a right-turn lane and a left-turn lane. No westbound through movements to the Bypass will be allowed.
- The eastbound Bypass approach will include a right-turn lane and dual left-turn lanes. No eastbound through movements to Wilsonville Road will be allowed.

We analyzed year of opening (2017) and 2035 intersection operations with the above modifications in-place. The traffic volumes used in the analyses are consistent with those we previously used as part of Bypass Phase 1 work. Table 1 summarizes the results of our analyses.

Table 1. Oregon 219/Wilsonville Road/Bypass Intersection Operations

Analysis Year	Level-of-Service (LOS)	Volume-to-Capacity Ratio (V/C)
2017	C	0.67
2035	C	0.82

Please let us know if you need any additional information.

FILENAME: U:\PORT\SHARED\EMPLOYEES\MILLESAR\AUGUST 18 WILSONVILLE ROAD MEMO.DOCX

Newberg TSP Amendment – Additional Information on Oregon 219 Southbound Lane Configuration and on the Oregon 219/Phase 1 Bypass/ Wilsonville Road Intersection

Introduction

This document provides supplemental information requested by the City of Newberg as part of the Transportation System Plan (TSP) Amendment proposed by the Oregon Department of Transportation (ODOT) related to the Newberg Dundee Bypass (Bypass). In response to City comments, this document summarizes the transportation modeling performed for the Bypass as part of the Environmental Impact Statement (EIS) and the results of the alternative analyses conducted to support the final design for Oregon 219 and for the location and configuration of Wilsonville Road. This supplemental information also updates the traffic performance analysis originally provided in the TSP application for the Oregon 219/Springbrook Road/Industrial Parkway and Oregon 219/Phase 1 Bypass/Wilsonville Road intersections.

Newberg Dundee Bypass Transportation Modeling

To understand the changes in travel patterns associated with the Bypass, ODOT collected and analyzed information about existing traffic volumes, existing and future households and employees in the area, measured travel times using various routes for common destinations, and the delay experienced by drivers traveling the Oregon 99W corridor today. This data informed the transportation-related analyses performed for the Tier 1 Final EIS (FEIS), Tier 2 FEIS, and the 2004 Goal Exception. This information also served as inputs to the design of the streets and intersections that will be modified as part of the Bypass as well as for the design of the Bypass itself.

In addition to data collected about today's conditions, ODOT's Transportation Planning and Analysis Unit (TPAU) maintains travel demand forecasting models that are used to understand how increases in population and employment throughout regions of the state as well as increases in non-regional "through" traffic will contribute to traffic volumes in the year 2035. The population and employment forecasts for the Newberg Dundee area are also "coordinated" with forecasts for Yamhill County and statewide for compliance with Oregon planning requirements.

For the FEIS analyses, TPAU's model for the Newberg Dundee area was used as one of the tools that informed the roadway and intersection needs anticipated in the year 2035. Forecasts from this model as well as existing traffic volumes measured in 2011 were used to understand:

- How increases in traffic volumes traveling through the area as well as increases in population and employment in the Newberg Dundee area would change traffic volumes between now and 2035 at 33 intersections throughout Newberg and Dundee if the Bypass was not constructed.
- How volumes at the 33 intersections plus 8 Bypass-related intersections/ramp termini would change in the year 2035 if the Full Bypass were constructed.
- How volumes at the intersections would change in the year 2016 and the year 2035 would change if only Phase 1 of the Bypass were constructed.

ODOT used the traffic volumes forecast for the above scenarios as part of the intersection and roadway designs at Bypass-related intersections to ensure that the Bypass would not create a significant effect on the transportation system.

To supplement the Tier 1 analysis and resulting design, ODOT also used information from its Gen1 Model to understand how the Bypass could change commuting patterns between Yamhill County and the Portland Metro area (Washington, Clackamas, and Multnomah Counties). This model showed commuting from the McMinnville area would slightly increase but commuting from Newberg would slightly decrease. These changes result in very small net increases in the traffic volumes and passenger and freight miles traveled as a result of the Bypass. The Gen1 Model results confirmed that the roadway and intersection designs would be the same as those developed using the TPAU modeling and other tools.

Oregon 219 Southbound Lane Configuration

During the final design process for Phase 1 of the Bypass, ODOT reviewed all roadway lane configurations and intersection designs presented in the FEIS Preferred Alternative to ensure compliance with applicable design and operational standards and practices. As part of this process, two alternatives were evaluated for Oregon 219 southbound between the Springbrook Road/Industrial Parkway intersection and just south of the Phase 1 Bypass/Wilsonville Road intersection. These alternatives include:

- FEIS Preferred Alternative – Provide two lanes southbound and two lanes northbound on Oregon 219.
- Final Design Alternative – Provide one lane southbound and two lanes northbound on Oregon 219.

More detail on each of these alternatives is provided below.

FEIS Preferred Alternative (Two Southbound Through Lanes on Oregon 219)

As part of the Tier 2 FEIS for Phase 1, Oregon 219 was planned to be widened to two lanes southbound, north of the Oregon 219/Springbrook Road/Industrial Parkway intersection. This widening would continue southbound to south of the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection. The FEIS Alternative also includes two southbound right turn lanes onto the Phase 1 Bypass. Northbound Oregon 219 in this same segment would also be widened to two through lanes. This design is shown in Figure A.

Analysis of the operational impacts of the FEIS Alternative revealed the following:

- The Oregon 219/Springbrook Road/Industrial Parkway intersection would operate at a volume-to-capacity ratio (v/c ratio) of 0.62 with the widening and a traffic signal in-place in the opening year of Phase 1 of the Bypass. This complies with ODOT's mobility standard of 0.80 for the intersection.
- The Oregon 219/Phase 1 Bypass/Wilsonville Road intersection would operate at a v/c ratio of 0.65 with the widening and a traffic signal in-place in the opening year of Phase 1. This complies with ODOT's design standard of 0.65 for this intersection.

Final Design Alternative (One Southbound Through Lane on Oregon 219)

Following completion of the Tier 2 FEIS, ODOT's design staff refined the evaluation of Oregon 219 operations between the Oregon 219/Springbrook Road/Industrial Parkway intersection and the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection. This review revealed that although the intersections' comply with ODOT's performance standards, the FEIS configuration could present difficulties for drivers

turning left from Springbrook Road onto Oregon 219 that also wanted to turn right on the Bypass, given that there is approximately 1,000 feet between these intersections available to "weave" over to the right turn lanes to the Bypass. To minimize the number of lane changes, ODOT developed a design for this segment of Oregon 219 that included only one southbound through lane and one channelized right turn lane onto the Phase 1 Bypass (with no changes to the lane configuration in the northbound direction). This updated design is shown in Figure A.

Based on this updated design alternative, the operations were reviewed at the Oregon 219/Springbrook Road/Industrial Parkway and Oregon 219/Phase 1 Bypass/Wilsonville Road intersections. This review revealed:

- The Oregon 219/Springbrook Road/Industrial Parkway intersection would operate at a v/c ratio of 0.75 in the opening year of Phase 1 of the Bypass. This complies with ODOT's mobility standard of 0.80 for the intersection.
- The Oregon 219/Phase 1 Bypass/Wilsonville Road intersection would operate at a v/c ratio of 0.76 in the opening year of Phase 1. This exceeds ODOT's performance standard of 0.65 for this new intersection (as defined by the Highway Design Manual, HDM); however, the intersection would meet the Oregon Highway Plan (OHP) v/c standard of 0.80 for this section of Oregon 219. ODOT felt that the safety benefits associated with minimizing lane changes along Oregon 219 outweighed the need to comply with the HDM standard.

ODOT Preferred Alternative

Based on the refined evaluation of operations and safety, ODOT modified the design for Phase 1 to reflect one southbound lane on Oregon 219 rather than the two originally included in the FEIS. In addition to the safety benefits, the Final Design Alternative also requires less right-of-way than the FEIS Alternative, thereby reducing the overall costs associated with the Phase 1 construction.

The FEIS Alternative also could have resulted in a number of business displacements and/or building modifications in the industrial park west of Oregon 219 between the Oregon 219/Springbrook Road/Industrial Parkway and Oregon 219/Phase 1 Bypass/Wilsonville Road intersections. With the revised design, these impacts and displacements would be minimized.

Based on the review of safety, operations, design considerations, and right-of-way impacts, ODOT requests the City of Newberg approve the requested TSP amendment to reflect the Final Design Alternative of providing one southbound lane on Oregon 219.

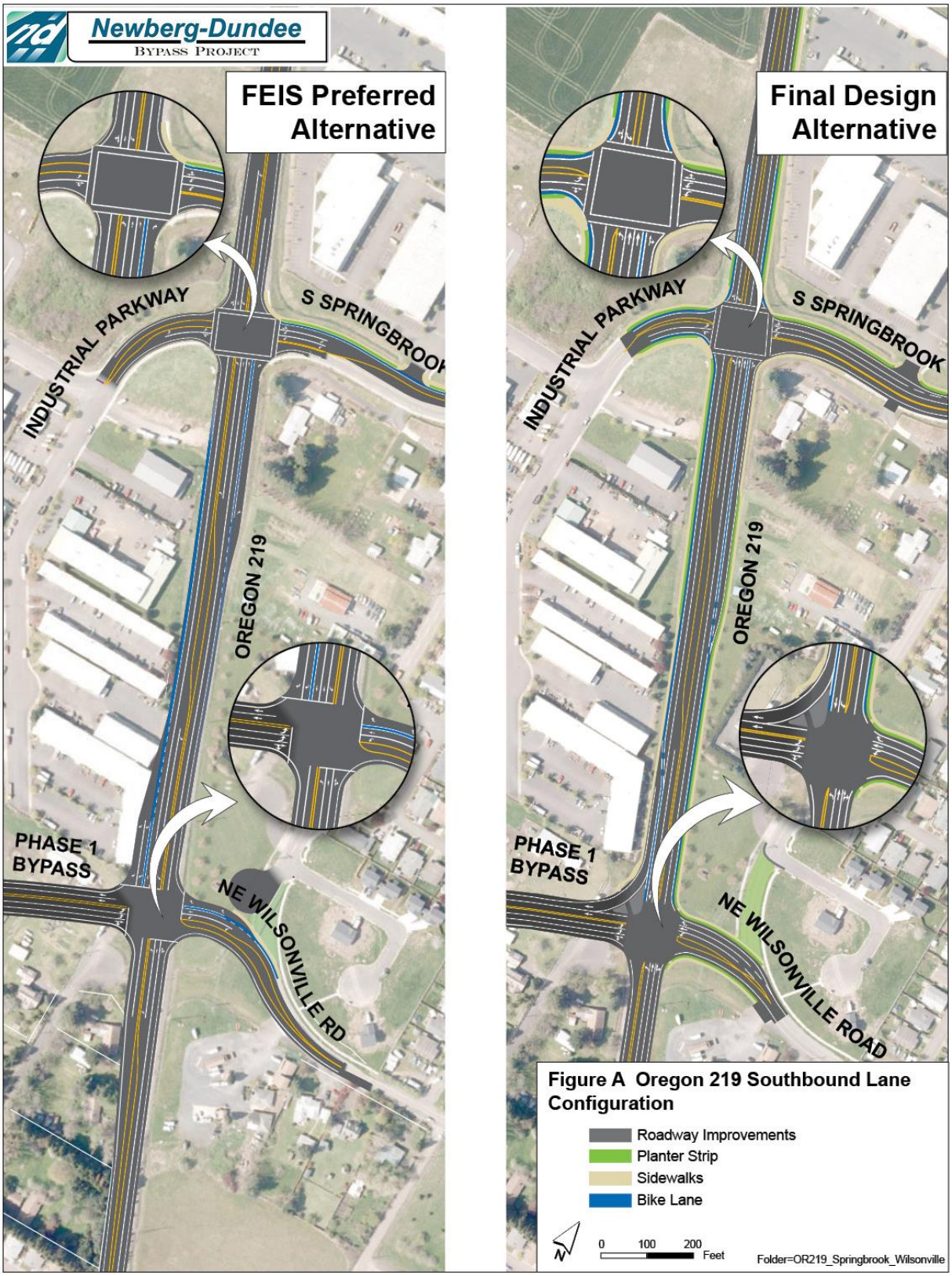


Figure A Oregon 219 Southbound Lane Configuration

Oregon 219/Phase 1 Bypass/Wilsonville Road Intersection

The City of Newberg amended its TSP in 2013 to reflect the FEIS Alternative for Phase 1. Since that time, ODOT and the Ladd Hill Neighborhood Association (LHNA) have continued to investigate potential design options related specifically to the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection to ensure that the Phase 1 Bypass will not cause significant traffic impacts to Wilsonville Road. As part of the 2013 TSP Amendment, ODOT committed to installing specific signage that would discourage traffic from using Wilsonville Road and to provide ongoing traffic monitoring to ensure that no unanticipated impacts occur once Phase 1 of the Bypass is open to traffic.

In addition to LHNA, Clackamas County and the City of Wilsonville have also raised questions about the potential use of Wilsonville Road to travel between I-5 and the Phase 1 Bypass. In response to these questions, ODOT explored additional design options that seek to minimize Phase 1 Bypass–related traffic using Wilsonville Road. In reviewing these additional design options, ODOT sought solutions that minimize potential delays to the overall schedule to open the Phase 1 Bypass to traffic in 2017. As part of the Phase 1 Bypass opening, it is essential that both Oregon 219 and Springbrook Road are improved to accommodate traffic between Oregon 99W and the Phase 1 Bypass in southeast Newberg. Any modifications to the design for Wilsonville Road must be included in the Phase 1G project, which is scheduled to go to construction bid in February 2016 and be completed in 2017. With these objectives in mind, ODOT identified two important considerations to assess:

- Could the modified design option be constructed within the current project right-of-way footprint? The right-of-way purchase process for the Phase 1 Bypass is well under way, and changes or additional right-of-way acquisition could delay construction completion.
- Would the design option require additional utility relocation? Most utilities have been or are in the process of being relocated. Requiring utility companies to move additional utilities or relocate utilities that have been moved could delay construction or increase the costs of Phase 1 Bypass construction if ODOT is required to pay the relocation costs.

Further discussion on each of the design options considered related to Wilsonville Road is provided below. These options were reviewed relative to projected intersection operations and the potential effect of out-of-direction travel on nearby ODOT and Newberg roads.

The following intersections were analyzed under Opening Year 2017 conditions:

- Oregon 219/Phase 1 Bypass
- Oregon 219/Springbrook Road/Industrial Parkway
- Oregon 219/Wynooski Road
- Springbrook Road/Wilsonville Road
- Springbrook Road/2nd Street/Fernwood Road

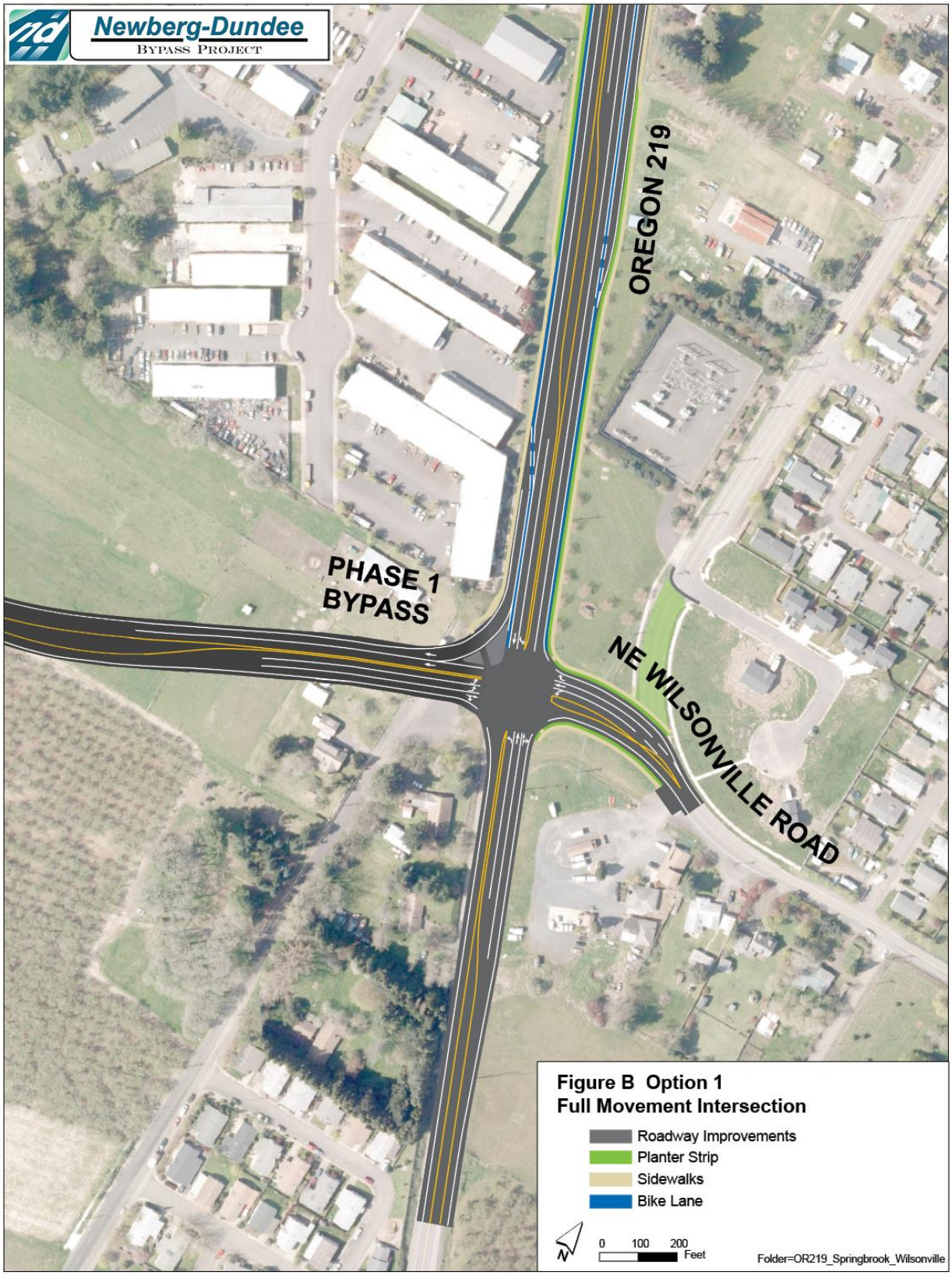
A summary of each option's intersection operations is provided in Table 1 at the end of this report as well as within the description of each option. Traffic analysis figures for each option are included in Appendix A.

Option 1 – Full Movement Intersection

Option 1 represents the Final Design Alternative proposed by ODOT as part of the requested TSP Amendment for the Oregon 219 lane configuration modification presented in this document (i.e., one continuous through lane southbound on Oregon 219). As part of Option 1, all turning movements would be allowed at the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection. As such, travel between Wilsonville Road and the Phase 1 Bypass could occur via through movements at the signalized intersection. The proposed intersection configuration as part of Option 1 is reflected in Figure B.

As shown below in Table 1, the v/c ratio at the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection is projected to be 0.76. Although this value is slightly above ODOT's design standard for a new intersection on the state highway system, the proposed design would meet the OHP mobility standard and provide enhanced safety benefits (see the previous section of this report for further discussion). The Oregon 219/Springbrook Road/Industrial Parkway, the existing Springbrook Road/Wilsonville Road, and Springbrook Road/2nd Street/Fernwood Road intersections will all meet the performance standards.

Because Option 1 is currently part of ODOT's recommended design, it can be built within the available right-of-way, with no further utility impacts or schedule delays.


Newberg-Dundee
Bypass Project
OREGON 219
PHASE 1
BYPASS
NE WILSONVILLE ROAD
Figure B Option 1
Full Movement Intersection
Roadway Improvements
Planter Strip
Sidewalks
Bike Lane
0 100 200
Feet
Folder=OR219_Springbrook_Wilsonville

Option 2 – Traffic Signal at the Springbrook Road/Wilsonville Road Intersection

Option 2 would maintain the existing configuration of Wilsonville Road and eliminate the future connection to the Oregon 219/Phase 1 Bypass intersection. Today, Wilsonville Road intersects Springbrook Road approximately 500 feet east of Oregon 219 at an unsignalized junction. Under Option 2, the Springbrook Road/Wilsonville Road intersection would require signalization or the installation of a roundabout. A traffic signal could operate with one lane in each direction on Springbrook Road plus a westbound left turn lane.

A roundabout at the Springbrook Road/Wilsonville Road intersection would require a two-lane entry on the westbound approach of Springbrook Road and a single-lane entry on the eastbound approach. Construction of the roundabout at the Springbrook Road/Wilsonville Road intersection would require additional right-of-way at the intersection. It would also likely cause additional utility relocations and impacts to existing parking areas and building structures. For these reasons, the roundabout option at the Springbrook Road/Wilsonville Road intersection has been eliminated from further consideration.

Figure C displays the roadway and intersection configurations for Option 2.

Under Option 2, anyone wishing to travel between the Phase 1 Bypass and Wilsonville Road would need to travel through the Springbrook Road/Wilsonville Road and Oregon 219/Springbrook Road/Industrial Parkway intersections. No direct connection between Wilsonville Road and the Phase 1 Bypass would be provided.

As a signalized intersection, the Springbrook/Wilsonville Road intersection would function at a v/c ratio of 0.68; as a multilane roundabout, the intersection would also function at a v/c ratio of 0.68. As shown in the Table 1, the operations at the remaining intersections would be similar to that experienced under Option 1.

Given the relatively close spacing of signalized intersections in this design option, a preliminary queuing analysis was performed assuming opening year traffic conditions. This analysis found that queues in the dual westbound left-turn lanes at the Oregon 219/Springbrook Road/Industrial Parkway intersection would extend approximately 400 feet. With approximately 450 feet available between intersections, these queues could theoretically be accommodated; however, there is insufficient distance for vehicles to transition into the turn lanes and no room for additional traffic growth in the future. Furthermore, this analysis assumed a balanced use of the dual left-turn lanes. Given the demand for traffic to make a right turn at the Phase 1 Bypass intersection downstream, it is likely that a majority of traffic would favor the right-hand lane. As such, queues at the Oregon 219/Springbrook Road/Industrial Parkway intersection are expected to extend into the Springbrook Road/Wilsonville Road intersection periodically during peak travel periods.

These queue spillback issues could cause blockages and conflicts for vehicles turning at the Springbrook Road/Wilsonville Road intersection, thereby reducing the intersection performance. Additionally, standing queues within the intersection would create concerns for pedestrian safety and other nonmotorized users.

Construction of a traffic signal at the Springbrook Road/Wilsonville Road intersection and modifying the Oregon 219/Phase 1 Bypass intersection would not result in right-of-way impacts. This option would likely require additional utility relocations, and the redesign could result in minor delays to the construction schedule.

While this option may perform acceptably in 2017, the opening year of the Phase 1 Bypass, as traffic volumes continue to grow the queueing will block the Springbrook Road/Wilsonville Road intersection. This amount of queueing will be problematic to traffic corridor operations and is not an acceptable option for Wilsonville Road, since there is no capacity for the future projected growth.


Newberg-Dundee
Bypass Project
INDUSTRIAL PARKWAY
S SPRINGBROOK RD
OREGON 219
NE WILSONVILLE RD
PHASE 1
BYPASS
NE WILSONVILLE RD
Figure C Option 2
Traffic Signal at Springbrook/Wilsonville
Road Intersection
Roadway Improvements
Planter Strip
Sidewalks
Bike Lane
Traffic Signal
N
0 100 200
Feet
Folder=OR219_Springbrook_Wilsonville

Option 3 – Right In and Out at Springbrook Road/Wilsonville Road Intersection

Option 3 is the same as Option 2 except that the Springbrook Road/Wilsonville Road intersection would be right-in/right-out on the Wilsonville Road approach instead of allowing for full movement and signalization. Like Option 2, no direct connection between the Phase 1 Bypass and Wilsonville Road would be provided.

Option 3 would cause additional out-of-direction movements for westbound drivers seeking to travel between Wilsonville Road and the Phase 1 Bypass. Under this option, westbound travelers would need to use the Springbrook Road/Wilsonville Road, Springbrook Road/2nd Street/Fernwood Road, and Oregon 219/Springbrook Road/Industrial/Parkway intersections. In addition, travelers would either use 2nd Street, Hayes Street, or Oregon 99W to travel between northbound Springbrook Road and southbound Oregon 219 to access the Phase 1 Bypass. This would result in additional impacts to both city streets and state highways. Option 3 is reflected in Figure D.

Under this option, the Springbrook Road/Wilsonville Road intersection would function with a v/c ratio of 0.63. As shown in the Table 1, the operations at the remaining intersections would be similar to that experienced under Option 1.

Given the out-of-direction travel anticipated with this option, the Springbrook Road/2nd Street/Fernwood Road intersection operations were also reviewed. Per this analysis, this intersection would operate at a v/c ratio of 0.85, which meets the performance standard. However, approximately 200 vehicles per hour would need to find alternative routes and/or make U-turns to access the Phase 1 Bypass.

Option 3 can be built within the existing project right-of-way and with no utility impacts and no schedule delays.

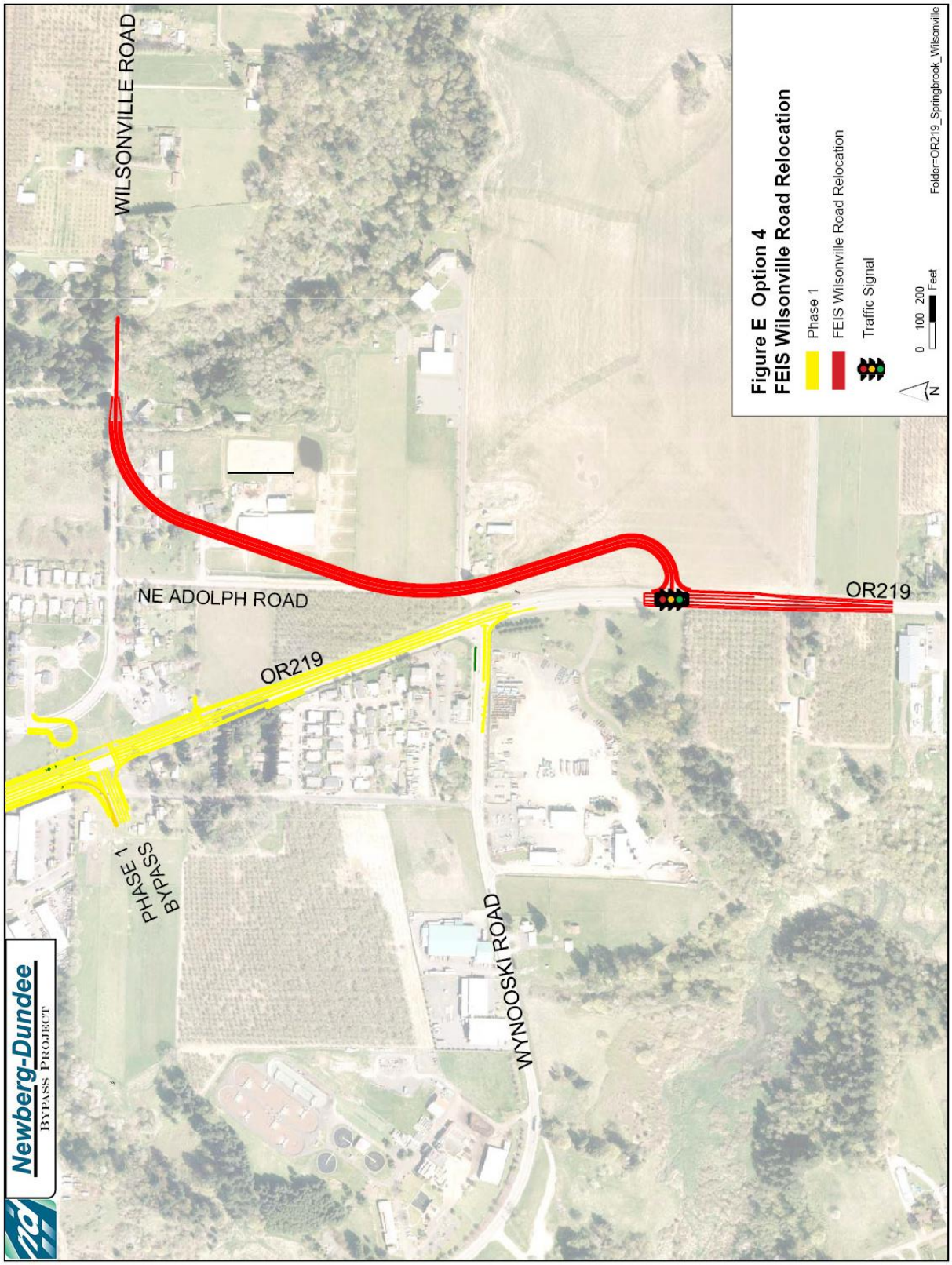

Newberg-Dundee
Bypass Project
INDUSTRIAL PARKWAY
S SPRINGBROOK RD
OREGON 219
NE WILSONVILLE RD
PHASE 1
BYPASS
NE WILSONVILLE RD
Figure D Option 3
Right In/Out at Springbrook/Wilsonville
Road Intersection
Roadway Improvements
Planter Strip
Sidewalks
Bike Lane
Median
N
0 100 200
Feet
Folder=OR219_Springbrook_Wilsonville

Option 4 – FEIS Wilsonville Road Relocation

Option 4 was developed as part of the FEIS Preferred Bypass Alternative for the relocation of Wilsonville Road. This option assumes that the Full Bypass and the Oregon 219 Interchange are constructed. No further relocation of Wilsonville Road would be required. Option 4 would realign Wilsonville Road to a new intersection on Oregon 219 south of the Oregon 219/Wynooski Road intersection. The southerly connection would occur partially via Adolf Road. This option would provide a direct connection between Wilsonville Road and Oregon 219, but would not directly provide a connection to the Phase 1 Bypass. Drivers would go through the new Oregon 219 intersection to travel to/from Wilsonville Road and the Phase 1 Bypass. Under this option, the new Oregon 219/Wilsonville Road intersection would require signalization. Option 4 is reflected in Figure E.

Under this option, the new signalized Oregon 219/Wilsonville Road intersection would operate acceptably with a v/c ratio of 0.54. As shown in the Table 1, the operations at the remaining intersections would be similar to that experienced under Option 1.

Option 4 would require new right-of-way, additional utility relocations, and could delay the construction schedule if it was added to the Phase 1G project.


WILSONVILLE ROAD
NE ADOLPH ROAD
OR219
OR219
PHASE 1 BYPASS
WYNOOSKI ROAD
Newberg-Dundee
BYPASS PROJECT
Figure E Option 4
FEIS Wilsonville Road Relocation
Phase 1
FEIS Wilsonville Road Relocation
Traffic Signal
0 100 200 Feet
N
Folder=OR219_Springbrook_Wilsonville

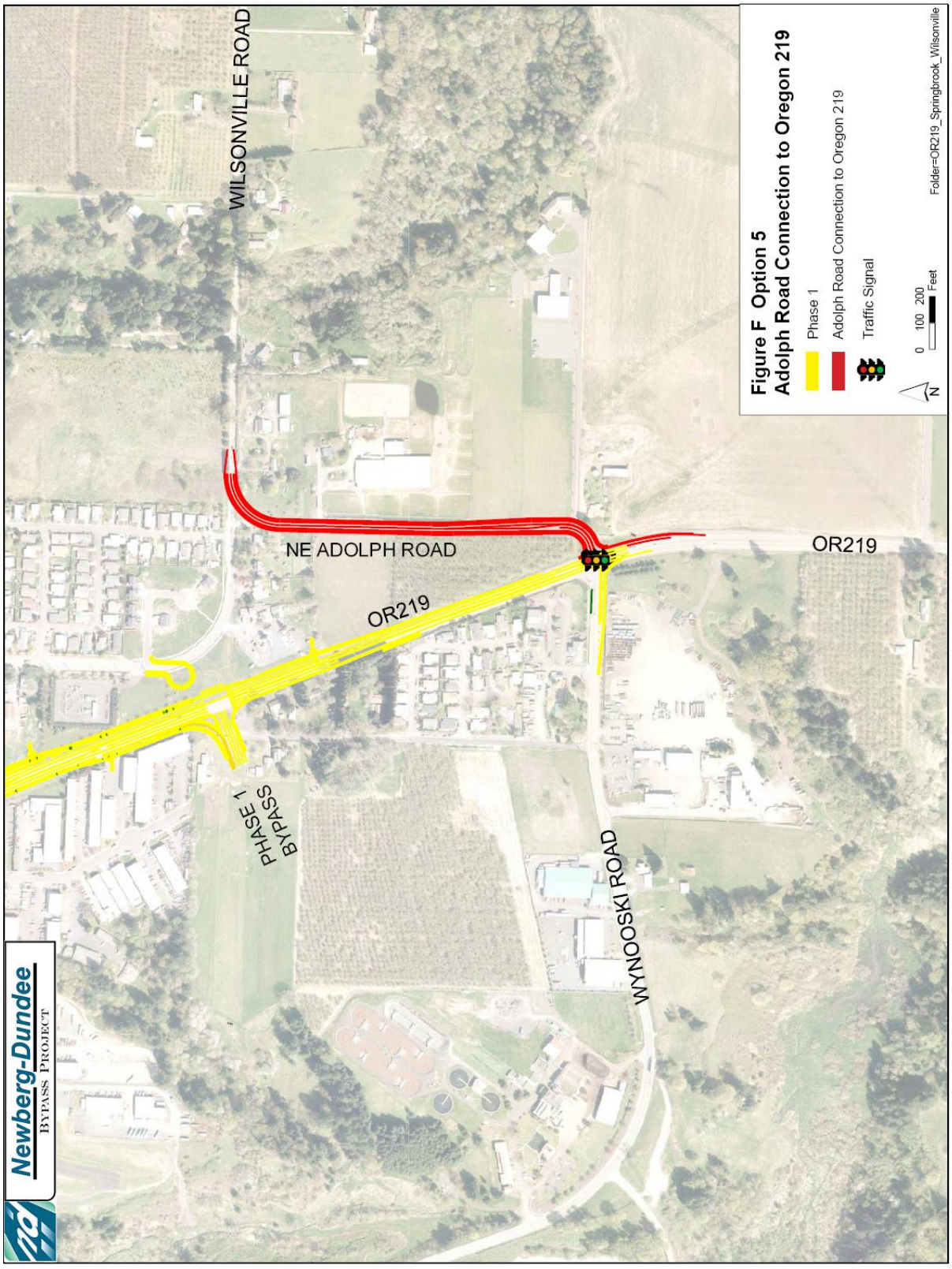
Option 5 – Adolf Road Connection to Oregon 219

Option 5 is similar to Option 4 except that Wilsonville Road would intersect Oregon 219 at the Oregon 219/Wynooski Road intersection rather than to the south. Option 5 would also create a southerly connection of Wilsonville Road to Oregon 219 that uses more of the Adolf Road right-of-way than Option 4 does. Option 5 is reflected in Figure F.

Like Option 4, Option 5 would not provide a direct connection between the Phase 1 Bypass and Wilsonville Road. Rather, drivers would use Oregon 219 to travel between Wilsonville Road and the Phase 1 Bypass.

Under this option, the Oregon 219/Wynooski Road/Wilsonville Road intersection would operate at a v/c ratio of 0.58 assuming signalization. As shown in Table 1, the operations at the remaining intersections would be similar to that experienced under Option 1.

Option 5 would require new right-of-way, additional utility relocations and could delay the construction schedule if it was added to the Phase 1G project.

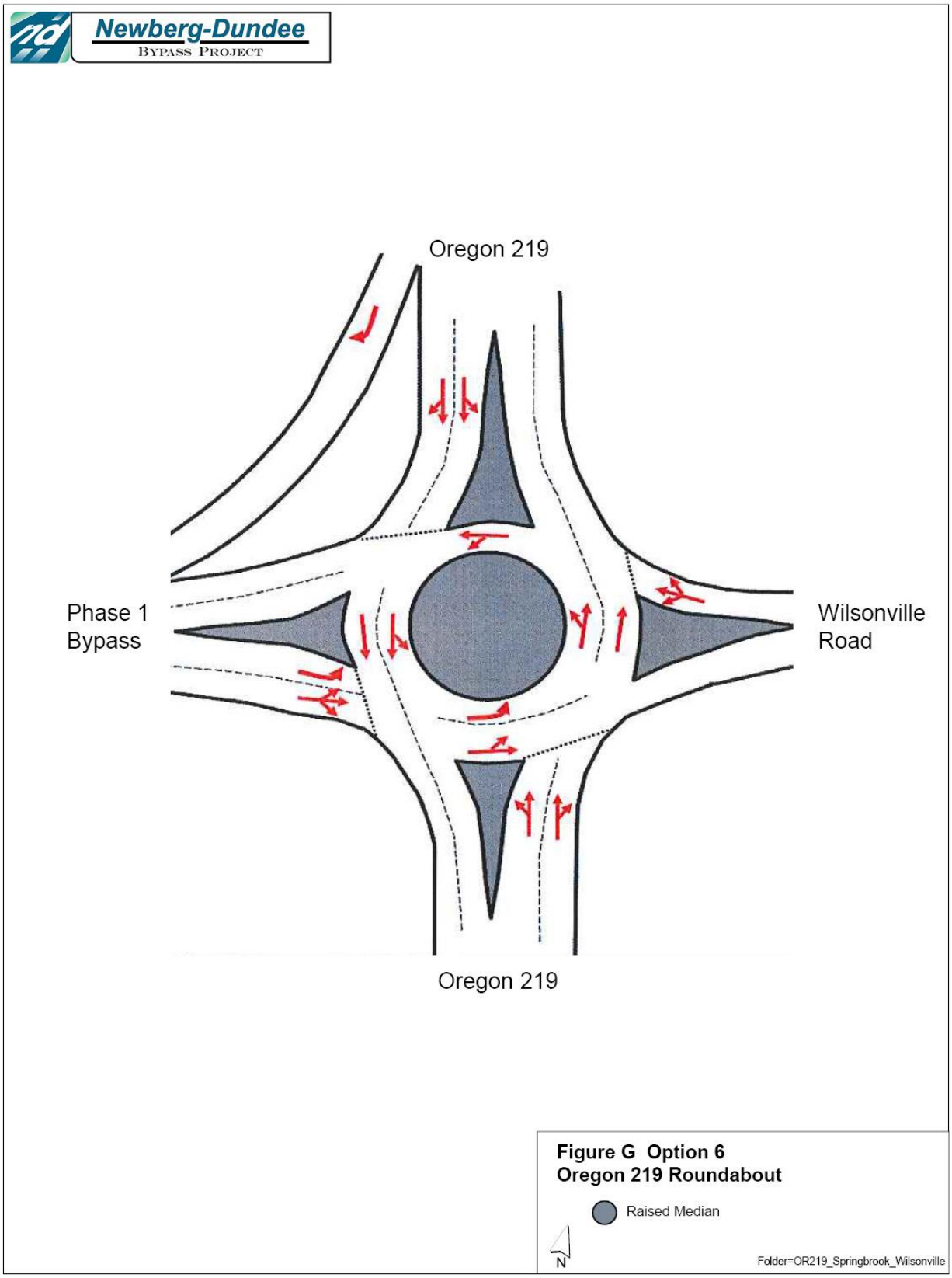

WILSONVILLE ROAD
NE ADOLPH ROAD
OR219
OR219
PHASE 1 BYPASS
WYNOOSKI ROAD
Figure F Option 5
Adolph Road Connection to Oregon 219
Phase 1
Adolph Road Connection to Oregon 219
Traffic Signal
0 100 200 Feet
N
Folder=OR219_Springbrook_Wilsonville
Newberg-Dundee
BYPASS PROJECT

Option 6 – Oregon 219 Roundabout

Option 6 would be the same as Option 1 except that the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection would be constructed with a roundabout rather than a traffic signal. Construction of a roundabout would require two lanes northbound and southbound on Oregon 219. Like Option 1, Option 6 provides direct access between Wilsonville Road and the Phase 1 Bypass. This option is reflected in Figure G.

Assuming a multilane roundabout, the Oregon 219/Phase 1 Bypass/Wilsonville Road roundabout would operate with a v/c ratio of 0.66. As shown in the Table 1, the operations at the remaining intersections would be the same as that experienced under Option 1.

Construction of a roundabout at the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection would likely result in additional right-of-way impacts. This option would also likely require additional utility relocations, and the redesign could result in minor delays to the construction schedule.


Newberg-Dundee
Bypass Project
Oregon 219
Phase 1
Bypass
Wilsonville
Road
Oregon 219
Figure G Option 6
Oregon 219 Roundabout
Raised Median
N
Folder=OR219_Springbrook_Wilsonville

Option 7 – No Connection from Eastbound Phase 1 Bypass to Wilsonville Road

Option 7 is similar to Option 1 except that no eastbound through movements would be allowed at the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection. Under this option, westbound Wilsonville Road travelers could access the Phase 1 Bypass directly via the intersection, whereas eastbound travelers would either need to turn left or right onto Oregon 219 and find an alternative route to Wilsonville Road. Figure H represents this option. As shown, this intersection would require signalization as well as raised medians to prohibit eastbound through movements.

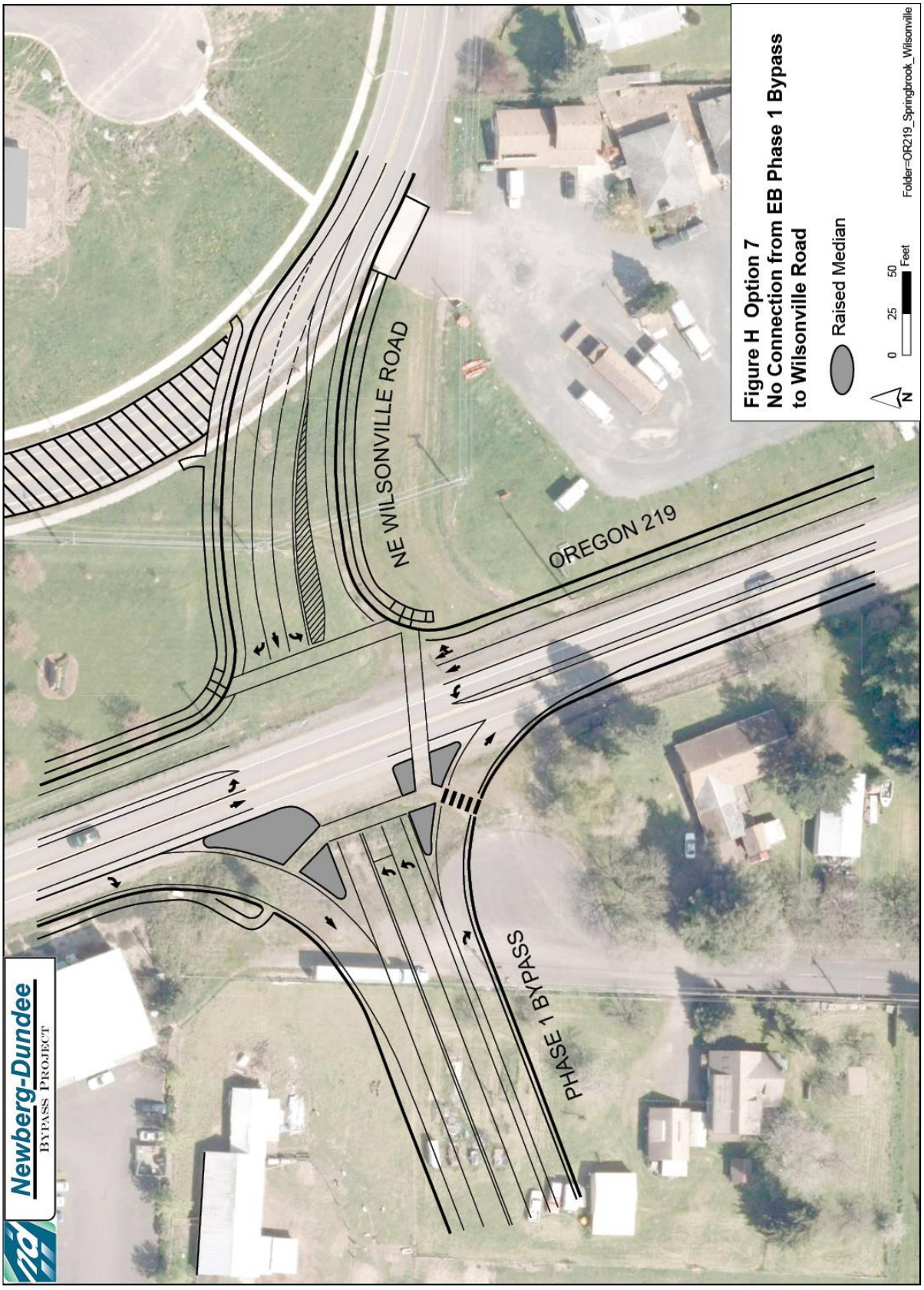
In the absence of eastbound through movements at the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection, eastbound travelers would potentially use one of a number of alternative routes to travel between the Phase 1 Bypass and Wilsonville Road. These could include:

- Travelers could turn right to head southbound on Oregon 219 and make a U-turn at a median opening or at the Oregon 219/Wynooski Road intersection. After heading northbound, the traveler could turn right onto Wilsonville Road at the Oregon 219/Phase 1 Bypass/Wilsonville Road traffic signal.
- Travelers could turn left to head northbound on Oregon 219 and make one of the following maneuvers to head southbound:
  - Make a U-turn at a median opening and turn left onto Wilsonville Road at the Oregon 219/Phase 1 Bypass/Wilsonville Road traffic signal.
  - Make a U-turn at the Oregon 219/Springbrook Road/Industrial Parkway traffic signal to head southbound on Oregon 219. The traveler can then turn left at the Oregon 219/Phase 1 Bypass/Wilsonville Road traffic signal.
  - Turn right at the Oregon 219/Springbrook Road/Industrial Parkway traffic signal and then turn right onto McKern Court (currently Wilsonville Road). The traveler could then turn left into Springbrook Estates and follow the local street system to get to Wilsonville Road. This would result in cut-through traffic in the Springbrook Estates neighborhood.
  - Turn right at the Oregon 219/Springbrook Road/Industrial Parkway traffic signal and then turn right onto Fernwood Road. The traveler could then travel past the Chehalem Glenn Golf Course and turn right onto Corral Creek Road, turn right onto Renne Road, and then turn left onto Wilsonville Road.

For the purposes of the traffic analysis, all eastbound travelers between the Phase 1 Bypass and Wilsonville Road were assumed to use the Fernwood Road/Corral Creek/Renne Road option discussed above. This option affects the most number of intersections and thereby provides a conservative analysis of impact.

Under this option, the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection would operate with a v/c ratio of 0.76. As shown in the Table 1, the operations at the remaining intersections would be similar to that experienced under Option 1. This option would require an estimated 25 vehicles per hour to use alternate routes to access Wilsonville Road from the Phase 1 Bypass, but these do not result in significant impacts to the performance of the intersections.

Option 7 may result in minor increases to the construction schedule associated with redesign of the intersection. No additional right-of-way and no additional utility relocation costs are anticipated with this option.


Newberg-Dundee
BYPASS PROJECT
NE WILSONVILLE ROAD
OREGON 219
PHASE 1 BYPASS
Figure H Option 7
No Connection from EB Phase 1 Bypass
to Wilsonville Road
Raised Median
0
25
50
Feet
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Folder=OR219_Springbrook_Wilsonville

Option 8 – No Through Traffic

This option was developed by ODOT and LHNA in early 2015. Under this option, no direct connection would be provided between Wilsonville Road and the Phase 1 Bypass. Rather, the eastbound and westbound through movements would be prohibited at the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection. For those travelers desiring to travel between Wilsonville Road and the Phase 1 Bypass, there are a number of routes that could be used:

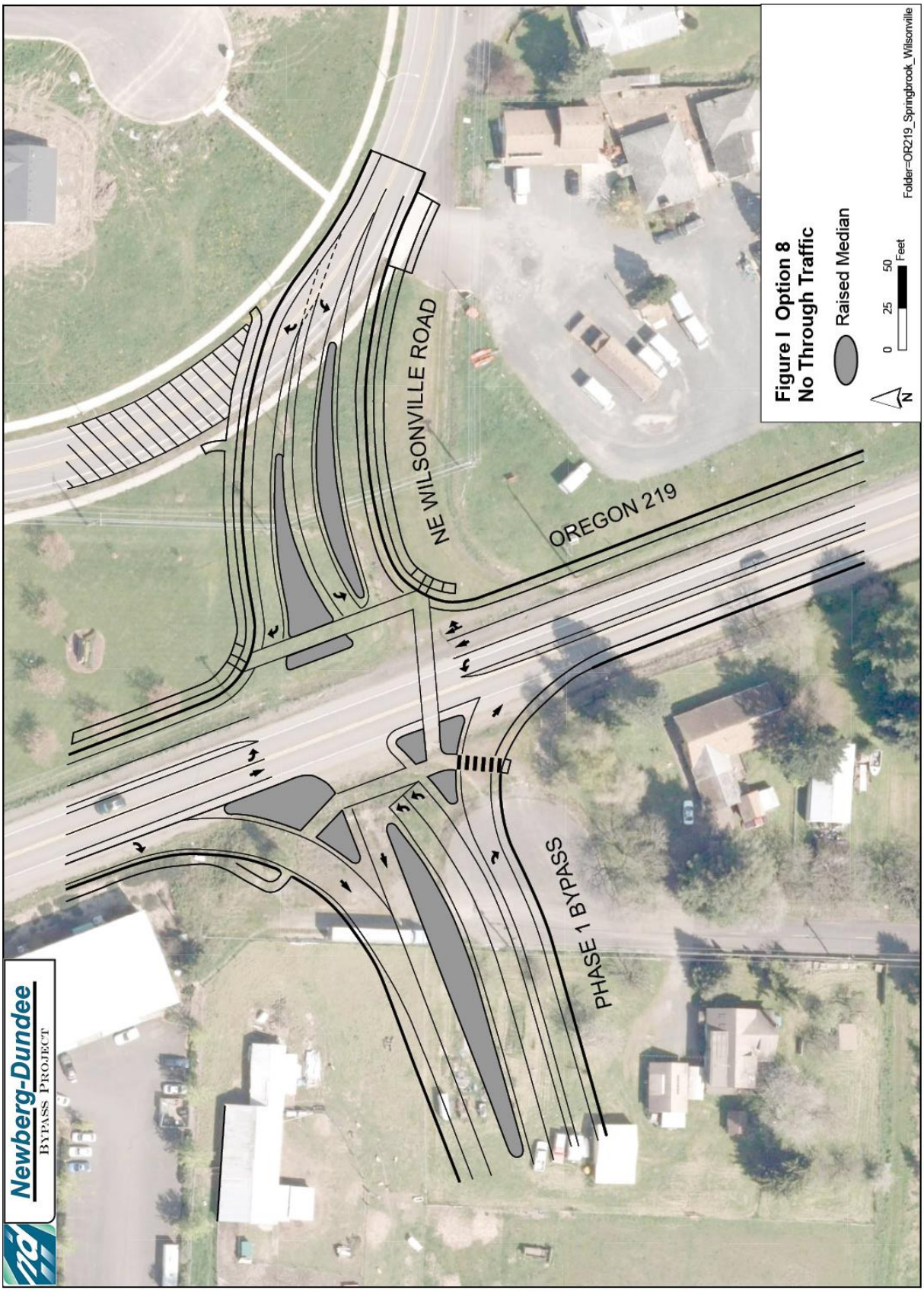
- Use a median opening to make a U-turn on Oregon 219 and then turn at the Oregon 219/Phase 1 Bypass/Wilsonville Road traffic signal.
- Make a U-turn at the Oregon 219/Springbrook Road/Industrial Parkway traffic signal and then turn at the Oregon 219/Phase 1 Bypass/Wilsonville Road traffic signal.
- Use Springbrook Road and McKern Court (currently Wilsonville Road). The traveler could then turn left into Springbrook Estates and follow the local street system to travel between Wilsonville Road and the Phase 1 Bypass. This would result in cut-through traffic in the Springbrook Estates neighborhood.
- Use Springbrook Road, Fernwood Road, Corral Creek Road, and Renne Road to travel between Wilsonville Road and Bypass.

As shown in Figure I, this option would require signalization as well as raised medians to prohibit eastbound and westbound through movements at the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection.

For the purposes of the traffic analysis, similar to Option 7, all travel between Wilsonville Road and the Phase 1 Bypass was assumed to use the Fernwood Road/Corral Creek/Renne Road route as this impacts the most number of study intersections.

Under this option, the Oregon 219/Phase 1 Bypass/Wilsonville Road intersection would operate with a v/c ratio of 0.67. As shown in the Table 1, the operations at the remaining intersections would be similar to that experienced under Option 1. This option would require an estimated 50 vehicles (25 vehicles in each direction) per hour to use alternate routes to travel between Wilsonville Road and the Phase 1 Bypass; however, these trips do not result in significant impacts to the performance of the intersections.

Option 8 may result in minor increases to the construction schedule associated with intersection redesign. No additional right-of-way and no additional utility relocation costs are anticipated with this option.


Newberg-Dundee
BYPASS PROJECT
NE WILSONVILLE ROAD
OREGON 219
PHASE 1 BYPASS
Figure I Option 8
No Through Traffic
Raised Median
0 25 50 Feet
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Folder=OR219_Springbrook_Wilsonville

Summary of Traffic Operations

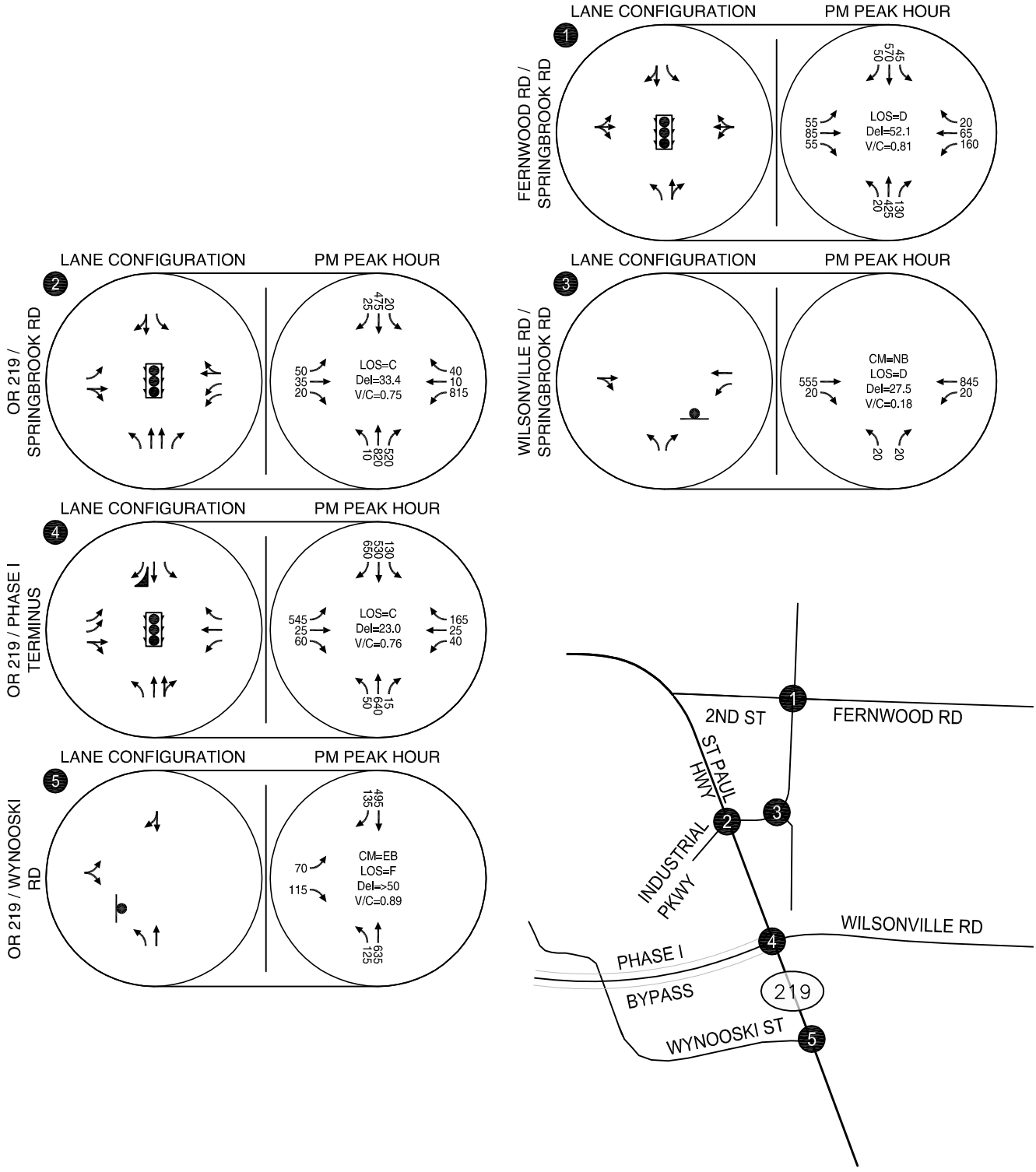
Table 1 summarizes the traffic operations at the four affected intersections associated with the design options considered.

Table 1. Opening Year of Bypass (2017) Intersection Operations

Intersection	Performance Standard	Option 1 Full Movement Intersection	Option 2 Traffic Signal at Springbrook/ Wilsonville Road Intersection	Option 3 Right In/Out at Springbrook/ Wilsonville Road Intersection	Option 4 FEIS Wilsonville Road Relocation	Option 5 Adolph Road Connection to Oregon 219	Option 6 Oregon 219 Roundabout	Option 7 No Connection from EB Phase 1 Bypass to Wilsonville Road	Option 8 No Through Traffic
OR 219/Springbrook Rd	0.80	0.75	0.71	0.75	0.75	0.75	0.75	0.75	0.76
OR 219/Bypass	0.65	0.76	0.68	0.70	0.74	0.74	0.66	0.76	0.67
OR 219/Wynooski Rd	0.80	0.89	0.89	0.89	0.93	0.58	0.89	0.89	0.89
Springbrook Rd/ Wilsonville Rd	0.90	0.18	0.68	0.63	0.18	0.18	0.18	0.19	0.20
Springbrook Rd/2nd St/ Fernwood Rd	0.90	0.78	0.78	0.85	0.78	0.78	0.78	0.79	0.81

Appendix A

Traffic Analysis Figures



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- TRAFFIC SIGNAL

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LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED) / CRITICAL MOVEMENT LEVEL OF SERVICE (TWSC)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED) / CRITICAL MOVEMENT CONTROL DELAY (TWSC)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

Option 1 Traffic Conditions
Year 2016 PM Peak Hour
Newberg, Oregon

Figure
1

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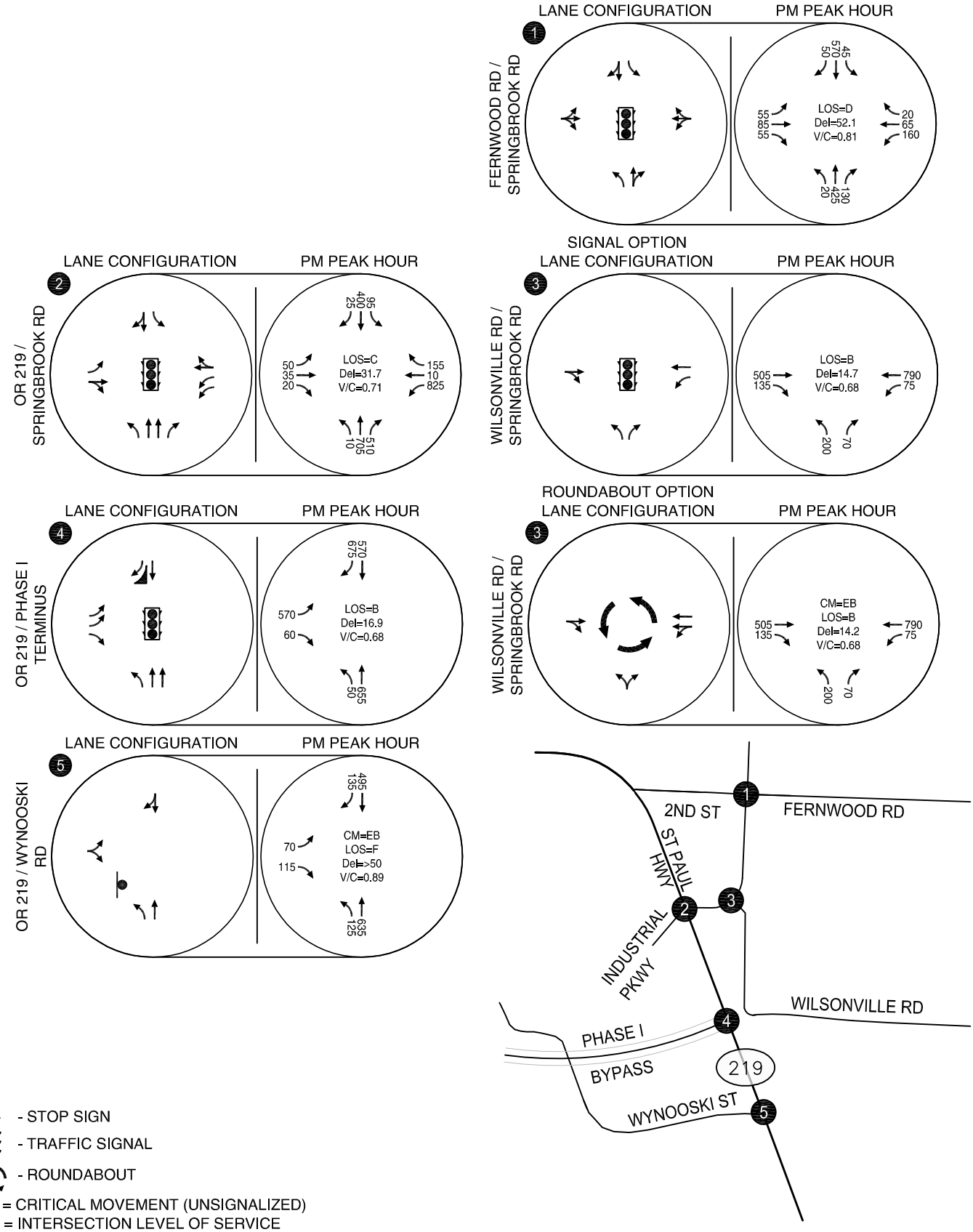

Option 2 Traffic Conditions
Year 2016 PM Peak Hour
Newberg, Oregon

Figure **2**

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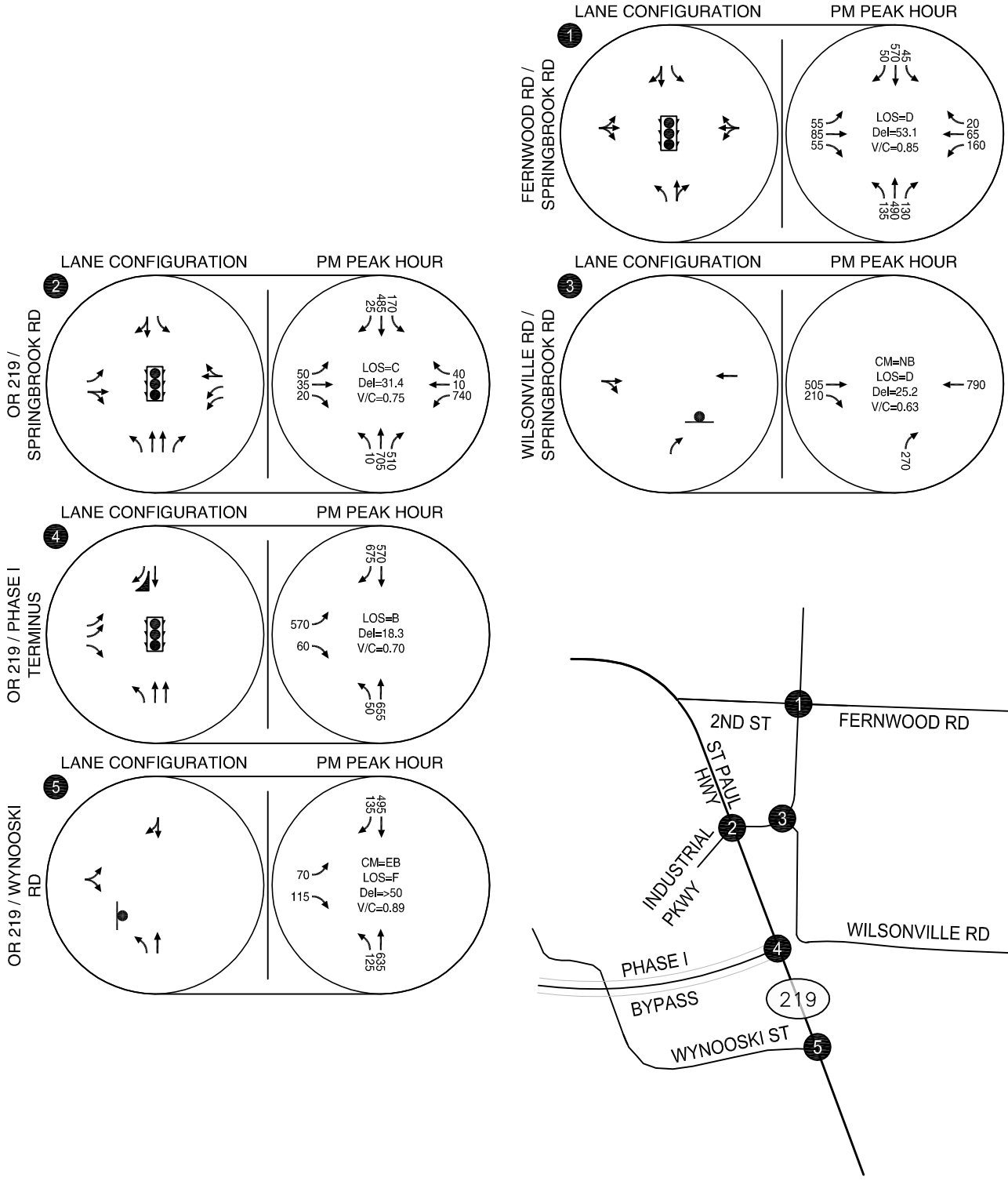

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V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

Option 3 Traffic Conditions
Year 2016 PM Peak Hour
Newberg, Oregon

Figure **3**

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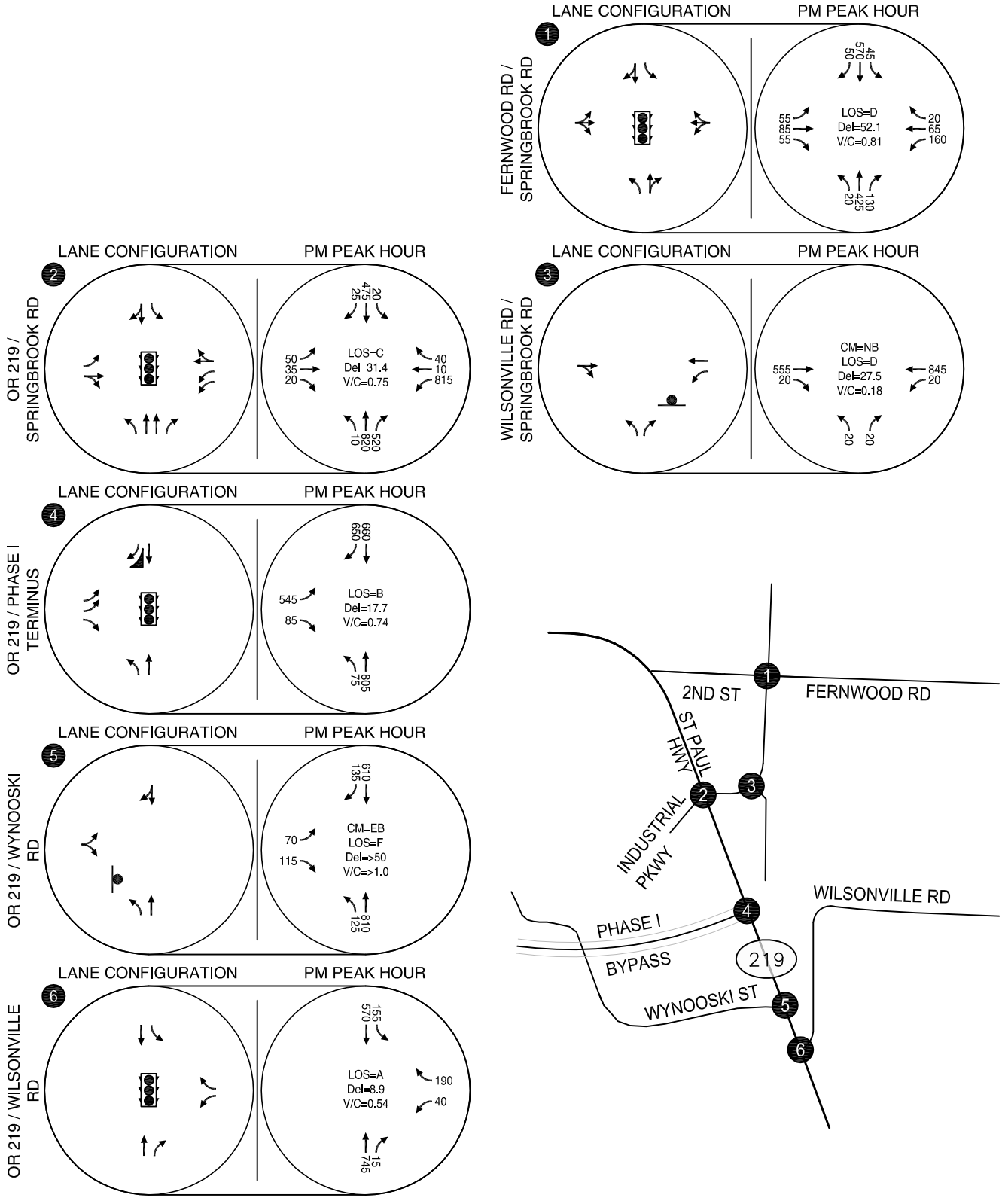

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Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED) / CRITICAL MOVEMENT CONTROL DELAY (TWSC)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

Option 4 Traffic Conditions
Year 2016 PM Peak Hour
Newberg, Oregon

Figure
4

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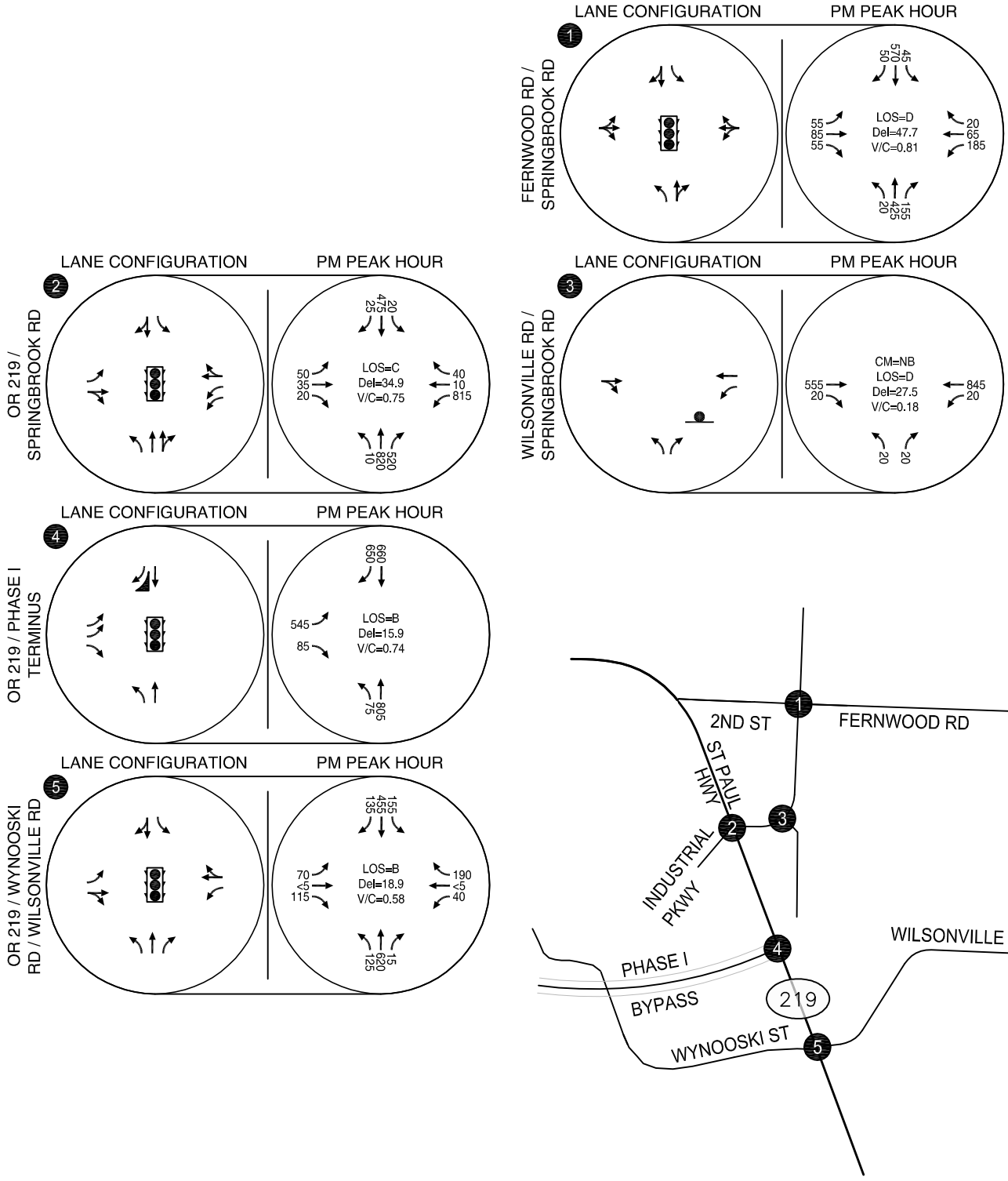

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Option 5 Traffic Conditions
Year 2016 PM Peak Hour
Newberg, Oregon

Figure
5

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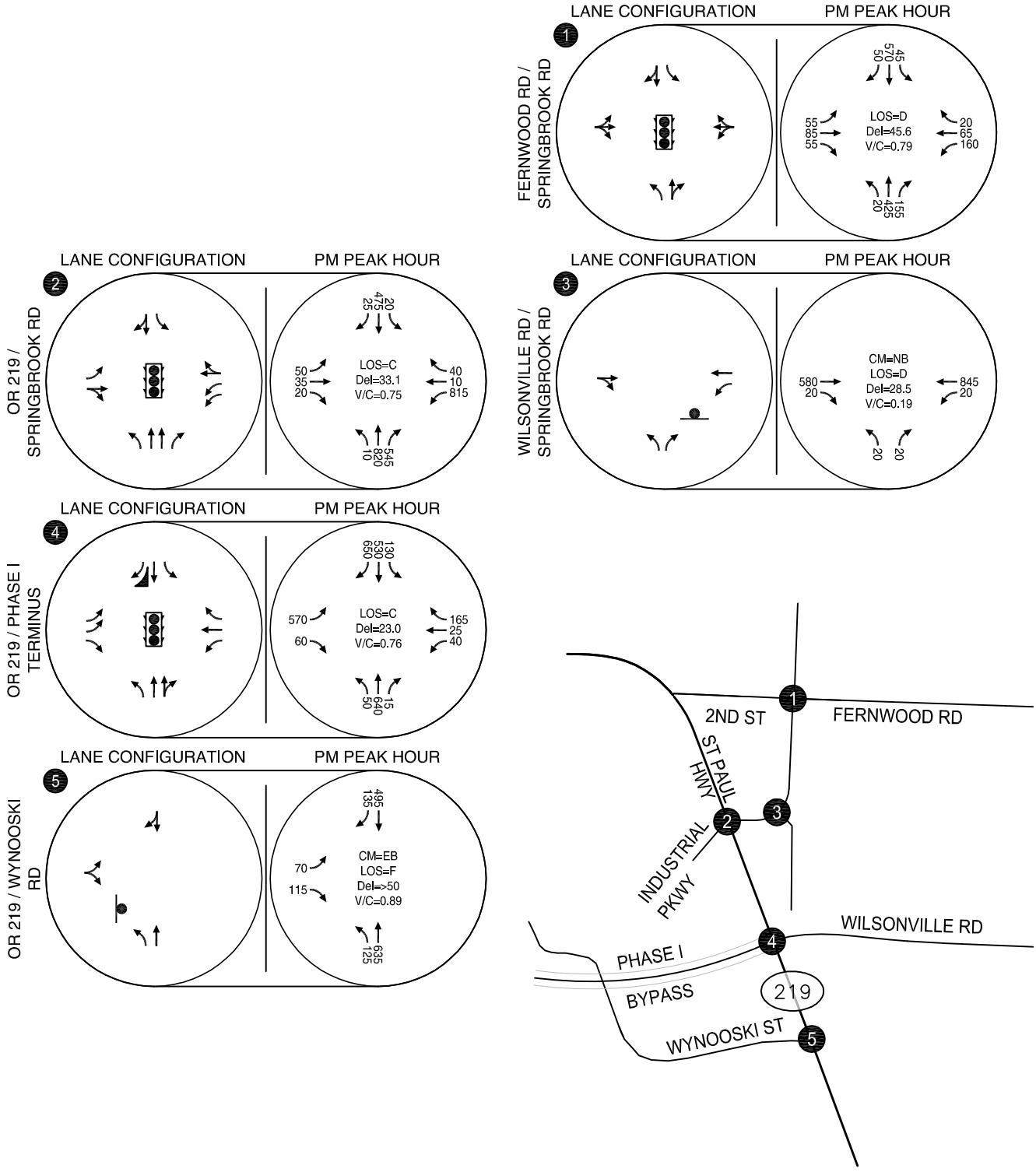

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Option 7 Traffic Conditions
Year 2016 PM Peak Hour
Newberg, Oregon

Figure **7**

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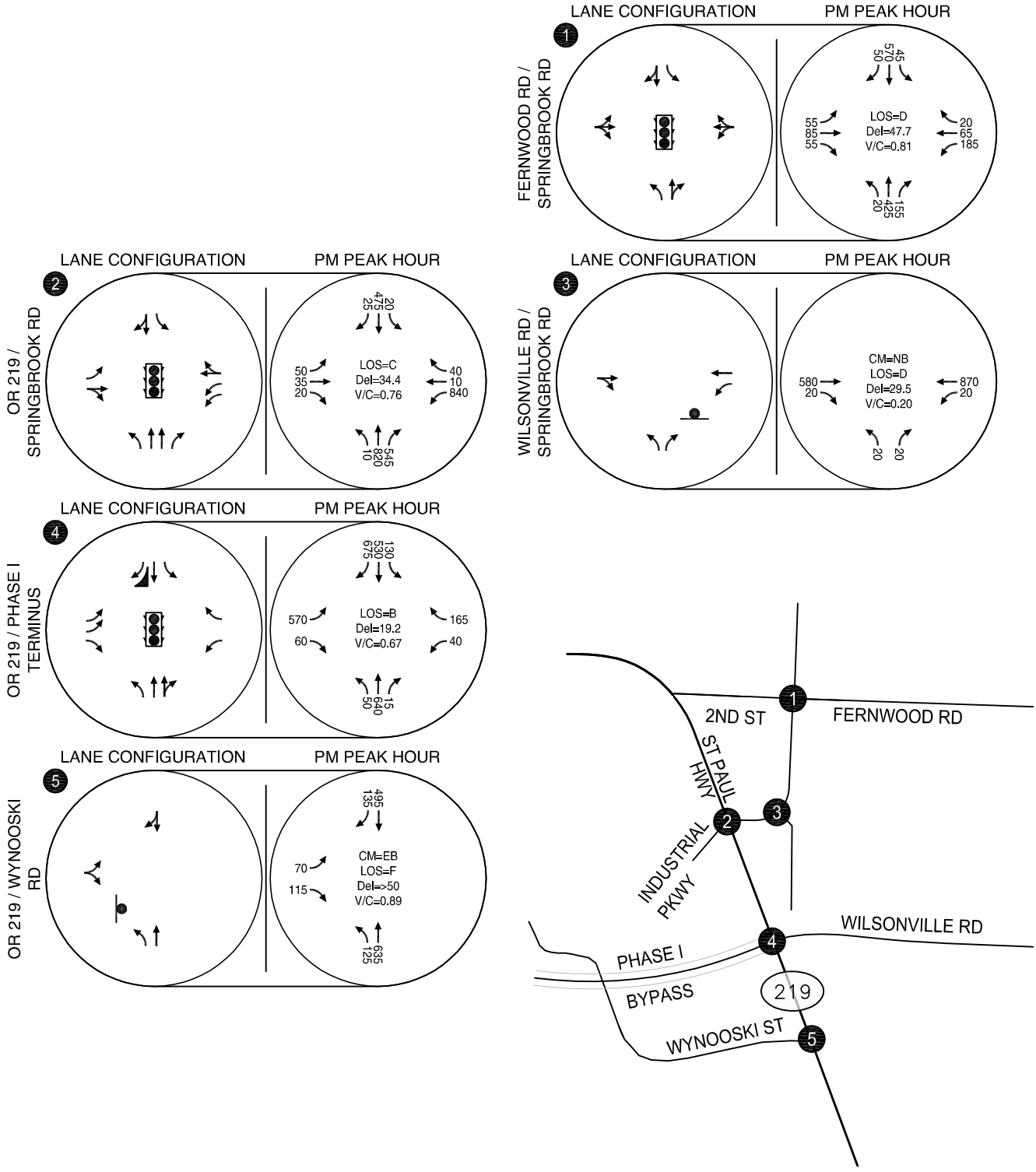

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V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

Option 8 Traffic Conditions
Year 2016 PM Peak Hour
Newberg, Oregon

Figure **8**

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Newberg City Hall
Tel: 503.537.1240
www.newbergoregon.gov

City of Newberg

City Engineer's Office
Tel: 503.537.1273

ENGINEERING SERVICES DEPARTMENT

P.O. Box 970 • 414 E. First Street • Newberg, Oregon 97132 • 503.537.1273 • Fax 503.537.1277

December 1, 2015

Jessica Pelz
Associate Planner
Community Development Department

RE: CPTA-15-002
ODOT Newberg Dundee Bypass TSP Amendment

Dear Jessica:

On September 2, 2015, the Oregon Department of Transportation (ODOT) (*from here on out known as "applicant"*) applied for an amendment to the City's Transportation System Plan (TSP). Additional information was submitted November 10, 2015 for review and evaluation. My comments are as follows:

Removal of Southbound Through Lane and One Right Turn Lane on Oregon 219
In evaluating this portion of the proposed amendment, the Engineering Services Department looked at the Transportation Planning Rule subsection 660-012-0000(3)(a) which states that "In all urban areas, coordinated land use and transportation plans are intended to provide safe and convenient vehicular circulation and to enhance, promote and facilitate safe and convenient pedestrian and bicycle travel by planning a well-connected network of streets and supporting improvements for all travel modes."

The submitted information addresses both the operational standards and the traffic safety concerns. The traffic analysis shows that reducing the number of lanes on Oregon 219 will increase the volume to capacity performance standard from 0.80 to 0.94. This exceeds ODOT's performance standard by about 10 percent. The trade-off is that if two lanes are constructed there will be a substandard merge and weave distance which is a traffic operation and safety concern. ODOT determined that the operational and safety concerns were more important than the mobility standards in this instance. The Engineering Services Department concurs. This requirement is met.

Phase 1 Bypass/Wilsonville Road at Oregon 219 Intersection "No Thru Traffic" Design
Per Oregon's Statewide Planning Goals "A transportation plan shall (1) consider all modes of transportation including mass transit, air, water, pipeline, rail, highway, bicycle and pedestrian; (2) be based upon an inventory of local, regional and state transportation needs; (3) consider the

differences in social consequences that would result from utilizing differing combinations of transportation modes; (4) avoid principal reliance upon any one mode of transportation; (5) minimize adverse social, economic and environmental impacts and costs; (6) conserve energy; (7) meet the needs of the transportation disadvantaged by improving transportation services; (8) facilitate the flow of goods and services so as to strengthen the local and regional economy; and (9) conform with local and regional comprehensive land use plans. Each plan shall include a provision for transportation as a key facility." Additionally it says that "(2) In meeting the purposes described in section (1), coordinated land use and transportation plans should ensure that the planned transportation system supports a pattern of travel and land use in urban areas that will avoid the air pollution, traffic and livability problems faced by other large urban areas of the country through measures designed to increase transportation choices and make more efficient use of the existing transportation system. 3) Each element identified in subsections (2) (b)–(d) of this rule shall contain: (a) An inventory and general assessment of existing and committed transportation facilities and services by function, type, capacity and condition: (A) The transportation capacity analysis shall include information on: (i) The capacities of existing and committed facilities; (ii) The degree to which those capacities have been reached or surpassed on existing facilities; and (iii) The assumptions upon which these capacities are based. (B) For state and regional facilities, the transportation capacity analysis shall be consistent with standards of facility performance considered acceptable by the affected state or regional transportation agency; (C) The transportation facility condition analysis shall describe the general physical and operational condition of each transportation facility (e.g., very good, good, fair, poor, very poor).

The information submitted for the second part of the proposed amendment does not address these goal. The existing TSP configuration of the intersection is Option 1 of the submitted documentation. Option 8 which is the option that has been requested for the City to approve shows that one of the intersections is better and another is the same, but all others are worse than with the current TSP intersection configuration. The applicant states that "this option would require an estimated 50 vehicles per hour to use alternate routes to travel between Wilsonville Road and the Bypass; however, these trips do not result in significant impacts to the performance of the intersections." The alternate routes noted by the applicant include: making U-turns on Oregon 219, cutting through the Springbrook Estates neighborhood or using the Springbrook Road, Fernwood Road, Corral Creek Road and Renne Road route. To quantify the impact of the 50 vehicles per hour, the percentage of additional vehicles on each route is shown in the table below.

	Springbrook Estates	*Springbrook/ Fernwood*	*Renne Road*	*Wilsonville Road*
2016	125%	3%	50%	16%

The Engineering Services Department has requested additional traffic data for year 2035 but has not yet received that information. Once it is received, the information will be evaluated and presented to the Planning Commission.

Out of all of the other options shown only Option 6 (Roundabout) matches or betters the intersection operations of Option 1. This means that the delay at the study intersections will be worse in all other options.

There is no information provided by the applicant to show how the proposed Option 8 is safer than the existing intersection design. In fact, due to driver frustration, the need to make U-turns, go through existing neighborhoods or using routes (like Renne Road) already have safety concerns. Option 8, the no through movement seems more dangerous. Additionally, the out of direction travel increases air pollution and decreases livability issues in the City.

The Engineering Services Department cannot recommend that the City change the configuration at the Phase 1 Bypass/Wilsonville Road intersection.

Please note: The Ladd Hill Neighborhood Association submitted information on the proposed amendment. The traffic information included was reviewed in June of 2015. The City's response to this information is attached to the staff report.

In conclusion, the City Engineer recommends:

1. Approval of the removal of the southbound through lane and one right turn lane on Oregon 219.
2. Denial of the Phase 1 Bypass/Wilsonville Road at Oregon 219 Intersection "No Thru Traffic" Design.

Feel free to contact me with any questions.

Sincerely,

Kaaren Hofmann, PE
City Engineer
Direct: 503.537.1273
Email: newbergoregon.gov

c: Jay Harris, Public Works Director
Doug Rux, Community Development Director

Engineering Department
503-537-1273

City Attorney Office
503-537-1206

Attachment 4

City of Newberg

414 E. First Street
Newberg, OR 97132

June 24, 2015

Matthew Garrett, Director
Oregon Department of Transportation
355 Capitol Street NE
Salem, OR 97301

RE: Newberg-Dundee Bypass
Wilsonville Road at Highway 219 Intersection

Dear Mr. Garrett,

ODOT's most current design of the Wilsonville Road at Highway 219 allows for through movements between Wilsonville Road and Phase 1 of the Bypass. The Ladd Hill Neighborhood Association (LHNA) has contacted the Oregon Department of Transportation (ODOT) and the City of Newberg (City) about their concerns for this configuration and future traffic on Wilsonville Road. They have proposed and worked with ODOT on a layout to not allow through movements (east/west) at this intersection as noted in Attachments 1 and 2.

The City met with the LHNA and ODOT on April 23, 2015 to look at the proposed revision and provide some preliminary feedback. The City asked for more detailed traffic information to be able to give the City some certainty on the impacts to our roadway system. The City also identified a concern on emergency vehicle access from Highway 219 onto Wilsonville Road with the proposed LHNA proposal.

This letter is intended to respond to the latest analysis for the re-configured intersection completed by Mackenzie on May 22, 2015. We continue to have concerns about the impacts to our local streets. Although, Mackenzie and the LHNA assert that the impacts are 'minor' there are impacts. On page 5 of their memo (Attachment 3) it shows that in 2016 three intersections that were studied will have a reduced performance standard over the current design. On page 6 the numbers for 2035 are similar in that three intersections (two of them in residential neighborhoods) are worse. Based on these numbers, the City of Newberg has difficulties in going "on the record as supporting the no-through movement design, to mitigate potentially significant impacts on the 12 miles of Wilsonville Road, the City of Wilsonville, four schools, active farms, and I-5 Exit 283." In fact, no documentation has been provided to show 'significant impacts' to Wilsonville Road, classified as a major collector in Yamhill County and minor arterial in Clackamas County.

At the April 23rd meeting the City requested another scenario be modeled but we have not seen that analysis. This scenario would be to leave Wilsonville Road connected to Springbrook Road and instead of a right-in/right-out configuration, install a traffic signal. This signal and the one proposed at Highway 219/Springbrook Road would have to be interconnected and work together to allow for queuing and storage. This analysis may be able to show that there is a solution that can work for all parties involved.

The other major concern raised is whether an amendment to the City's Transportation System Plan (TSP) will be required for a reconfiguration. Ordinance No. 2013-2766 amended the Transportation System Plan to reflect the Phase 1 alignment of the Bypass. This Ordinance and exhibits (Attachment 4) states:

- Phase 1 of the bypass will reestablish the intersection of Highway 219 and Wilsonville Road.
- Wilsonville Road will be extended west and to connect to Highway 219
- The rerouting and extension of Wilsonville Road will be constructed to minor arterial street standards.
- The purpose of this project is to provide access to Phase 1 of the Bypass at acceptable levels of service and improve safety.
- Exhibit B of the Ordinance shows an intersection in the current through movement (east/west) design configuration.
- Exhibit D Goal 12 states that the Wilsonville Road realignment will improve connectivity between the Bypass, Highway 219 and Wilsonville Road and avoid violating roadway performance standards on Springbrook Road.

Based on the above, our assessment is that this revision will require an amendment to our TSP. This is a land use process that will take between 60-90 days at the local level and is appealable to the Land Use Board of Appeals. If you have specific questions about the process contact our Community Development Director, Doug Rux at 503.537.1212.

It has also been pointed out to the City in the May 22nd Mackenzie analysis that the FEIS that ODOT completed assumed two through lanes on Highway 219 at Springbrook Road. The current plans only show one lane. ODOT should show two lanes on the next set of drawings issued to match the FEIS.

Feel free to contact me with any questions and I look forward to continuing the discussion to obtain a solution that can work for the City of Newberg, ODOT and the Ladd Hill Neighborhood Association.

Sincerely,

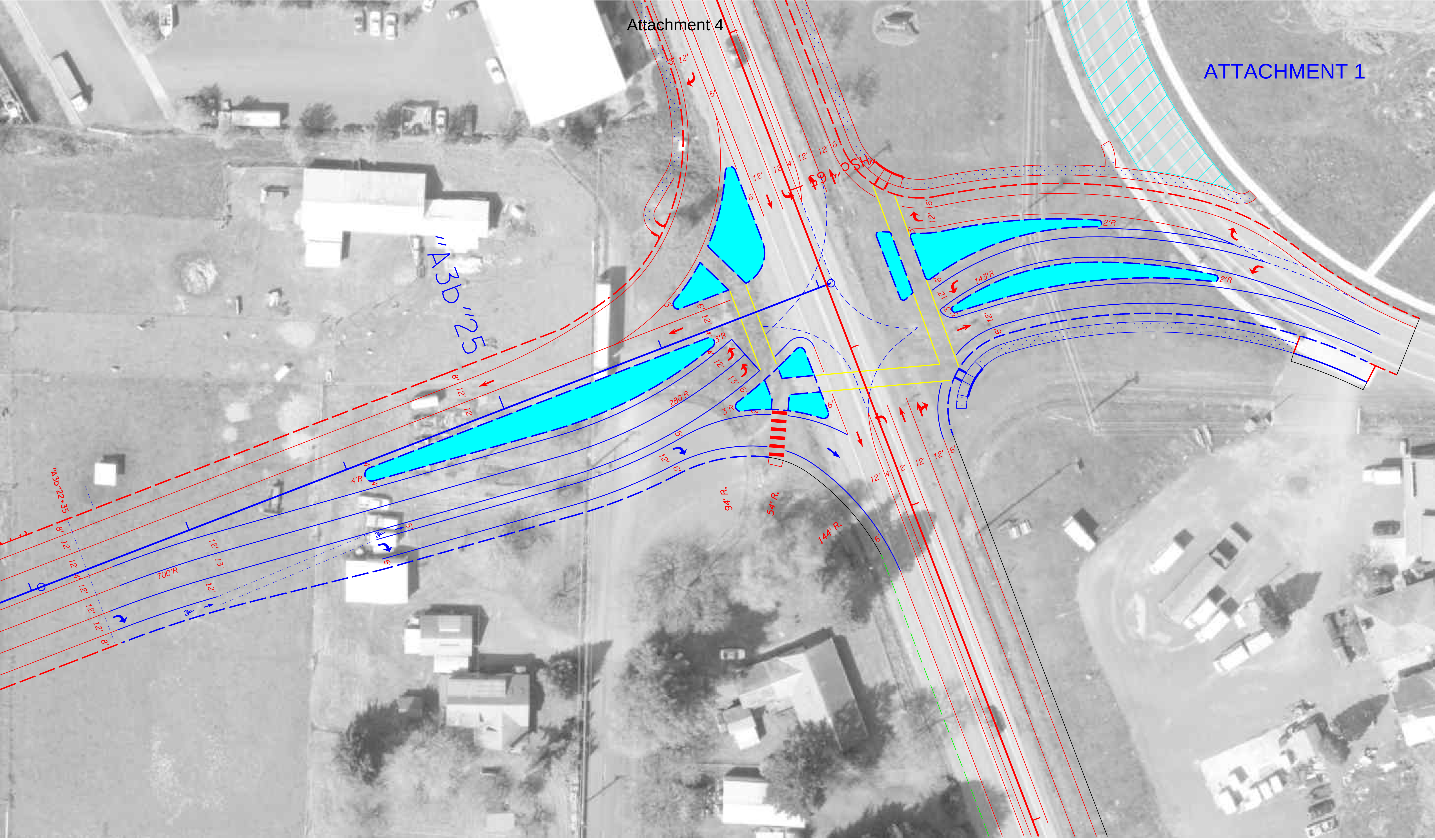
Kaaren Hofmann, PE
City Engineer

Attachments: 1. LHNA Proposed Intersection Configuration (close view)
2. LHNA Proposed Intersection Configuration (wide view)
3. May 22, 2015 Mackenzie Analysis
4. Newberg Ordinance No. 2013-2766

cc Tim Potter, ODOT
Mayor Bob Andrews
Newberg City Council
Jacque Betz, City Manager
Doug Rux, Community Development Director
Stan Halle, Ladd Hill Neighborhood Association, change1@mindspring.com

Attachment 4

ATTACHMENT 1



ATTACHMENT 2

MACKENZIE.

DESIGN DRIVEN | CLIENT FOCUSED

ATTACHMENT 3

May 22, 2015

City of Newberg
Attention: Kaaren Hofmann
414 E First Street
Newberg, OR 97132

Re: **Newberg-Dundee Bypass**
Wilsonville Road at Highway 219 Analysis
Project Number 2130551.03

Dear Ms. Hofmann:

BACKGROUND

ODOT's most current Newberg-Dundee Bypass plans call for the alignment of Wilsonville Road at Highway 219 with through movements between Wilsonville Road and the Phase 1 Bypass ('Option 1'). As we discussed at our meeting on April 23, ODOT and the Ladd Hill Neighborhood Associate (LHNA) had jointly proposed to not allow through movements between Wilsonville Road and the Phase 1 Bypass through channelization and medians at this new intersection. In our letter dated April 21, 2015, Mackenzie presented six alternatives to the Newberg-Dundee Bypass road network, with the intent of not providing a direct connection between the Phase 1 Bypass and Wilsonville Road. These alternatives include the original alignment of Wilsonville Road at Highway 219 with through movements allowed, the proposed no-through movement configuration, and several other roadway configurations.

City staff had indicated a Transportation System Plan amendment would be needed if the impacts of the proposed no-through movement configuration would result in the need for a change in the classification of a City roadway. The criteria for determining the need are (i) intersection performance and (ii) specific standards as measured by the volume-to-capacity ratio (v/c). Initially, City staff noted volumes on the roadways could trigger the need for a reclassification, but we understand the City has no specific roadway volume thresholds identified for each classification. For State highway intersections, the ODOT specific performance threshold is addressed. For each scenario, we provide the total roadway volume for key segments, and intersection capacity analysis results for impacted locations. All scenarios are addressed for purposes of comparing relative impacts. This letter has been prepared to provide more detail on those aspects for both roadway volumes and intersection level of service, sufficient for determining the need for an amendment to the City's Transportation Plan.

CONCLUSIONS

Based on the analysis provided in this letter, we have reached four important conclusions:

1. Each of the alternatives has only a minor level of impact on streets in the City of Newberg. In the 'worst case,' traffic volume would increase by a maximum of 4% (most likely 1-2.5%).

2. Our analysis used volumes presented in a July 1, 2013, memo from William Ciz, with 2016 and 2035 PM peak hour traffic volumes as presented in the Kittelson & Associates (consultants to ODOT) FEIS analysis. Roadway configuration assumptions were taken from Figure 9 of the January 2012 Newberg Dundee Bypass Tier 2 Final Technical Memorandum, and preliminary construction plans provided by ODOT staff in February 2015. Capacity calculations were prepared using Synchro software, although the original FEIS analysis utilized Traffix software. We had requested copies of the original Traffix output from Kittelson and ODOT, but were not provided with them. Despite not having these original calculations, we were able to closely match the lane configurations, volumes and other parameters and followed ODOT's Analysis Procedures Manual.

3. Based on our analysis, the proposed no-through movement configuration of the intersection of the Phase 1 Bypass at Highway 219 opposite Wilsonville Road **does not result** in any of the intersections to fall below standards at the 2016 opening conditions, and at most would add 50 trips to any City street. Based on these findings, there is **no need** for the City of Newberg to amend the City's Transportation System Plan. An amendment was already approved by the Newberg City Council in December 2013 for the purpose of aligning Wilsonville Road opposite the Phase 1 Bypass at Highway 219. At that time, no specific intersection configuration was provided. We note most intersections in the area do not meet standards or are well over capacity in the 2035 analysis scenarios, as presented in the Final EIS for the project. This result does not change with the various scenarios we have reviewed, including the no-through movement design at Wilsonville Road and the Bypass eastern terminus.

4. During the course of our review, we discovered the FEIS had indicated two southbound through lanes were planned on Highway 219 at the intersection with Springbrook Road, but the current plans only show a single through lane. We verbally notified ODOT staff (Director Matt Garrett, Sonny Chickering. and Tim Potter at the May 15th meeting with LHNA representative, Stan Halle) of this discrepancy and that without a second southbound through lane on Highway 219, the intersection will not meet standards at opening of the Phase 1 Bypass in 2016. For purposes of this analysis we have assumed that two lanes would be provided, consistent with the FEIS.

SCENARIOS

Below is a summary of the six different scenarios discussed in our April 21, 2015, letter and evaluated in this analysis.

1. ODOT's Option 1 – This is the current alignment of Wilsonville Road at the Phase 1 Bypass with allowed through movements in both directions. Design hour traffic volumes from the July 2012 Kittelson figures for 2016 and 2035 Phase 1 scenarios were used as reported in this scenario.
2. Springbrook/Wilsonville Road Right-in/Right-out – Wilsonville Road remains aligned at Springbrook Road but limits turning movements to right-in/right-out.
3. Wynooksi Signal – Wilsonville Road is realigned along Adolf Road, proposed to be aligned across from Wynooksi Road. In this scenario, a traffic signal is assumed at the Wynooski Road/Wilsonville Road/Highway 219 intersection.
4. Springbrook + Wynooski – This scenario is a combination of the current Springbrook alignment scenario with proposed right-in/right-out movements and the Wynooski scenario with the proposed realignment along Adolf Road.

5. No-Throughs-2nd Street– This is another version of the current alignment of Wilsonville Road at the Phase 1 Bypass with prohibited through movements using a channelized configuration. In this scenario, through volumes will be rerouted to 2nd Street.

6. No-Throughs-Fernwood – This assumes the same channelized configuration as the "No-Throughs-2nd" scenario, but with through volumes rerouted to Fernwood Road/Renne Road.

Note: the last two Scenarios are viewed as 'worse case.' In reality, we would expect that traffic would use both options, thereby reducing already minor impacts.

TRAFFIC VOLUMES

A memorandum dated July 1, 2013, was provided to Mackenzie by ODOT staff which included figures reporting 2016 and 2035 Phase 1 design hour volumes for the Option 1 Wilsonville Road alignment at Highway 219. The figures, prepared by Kittelson & Associates, Inc. and dated July 2012, were used to reroute Wilsonville Road traffic onto the surrounding network in the different scenarios. The 2013 memorandum is enclosed with this letter.

At the Phase 1 Bypass, Wilsonville Road traffic was estimated to be 25 vehicles eastbound and westbound in 2016, and 40 vehicles eastbound and 35 vehicles westbound in 2035. At Renne Road, Wilsonville Road traffic was estimated to be 170 vehicles eastbound and 230 vehicles westbound in 2016, and 330 vehicles eastbound and 315 vehicles westbound in 2035.

Figures 1A and 7A show the estimated assignment of only Wilsonville Road traffic onto the surrounding network for 2016 and 2035, respectively, based on the Option 1 traffic volumes. The Wilsonville Road volumes from Figures 1A and 7A were rerouted accordingly in the other five scenarios. The Wilsonville Road volumes were subtracted from the design hour traffic volumes in the Kittelson figures to establish peak hour volumes excluding Wilsonville Road traffic. The Wilsonville Road volumes established for the different scenarios were added back to the base peak hour volumes. Since Phase 1 volumes were only reported for Springbrook Road/Fernwood Road, Highway 219/Springbrook Road/Industrial Parkway, and Highway 219/Wilsonville Road/Bypass, traffic on Highway 219 was carried through to the north and south for the remaining study intersections.

Figures 2A through 6A show the Wilsonville Road volumes for the five alternate scenarios in 2016, and Figures 8A through 12A show the Wilsonville Road volumes for 2035. Figures 2B through 6B show total roadway design hour volumes for 2016, and Figures 8B through 12B show the total design hour volumes for 2035.

The tables below show the difference in estimated traffic volumes for 2nd Street, Fernwood Road and Springbrook Road between the different scenarios and ODOT's current 'Option 1.'

2016 VOLUME COMPARISON							
Road	Volume	Option 1	Springbrook RI-RO	Wynooski Signal	Springbrook + Wynooski	No Throughs-2nd	No Throughs-Fernwood
2nd Street	Total	55	55	55	55	105	55
	Change from Option 1	0	0	0	0	50	0
Fernwood Road	Total	395	565	565	565	395	420
	Change from Option 1	0	170	170	170	0	25
Springbrook Road	Total	1285	1265	1200	1200	1335	1310
	Change from Option 1	0	-20	-85	-85	50	25

2035 VOLUME COMPARISON							
Road	Volume	Option 1	Springbrook RI-RO	Wynooski Signal	Springbrook + Wynooski	No Throughs-2nd	No Throughs-Fernwood
2nd Street	Total	270	270	270	270	345	270
	Change from Option 1	0	0	0	0	75	0
Fernwood Road	Total	945	1230	1230	1230	945	985
	Change from Option 1	0	285	285	285	0	40
Springbrook Road	Total	1600	1515	1430	1430	1675	1635
	Change from Option 1	0	-85	-170	-170	75	35

SYNCHRO ANALYSIS

Synchro 8 was used to model the six scenarios, all of which included the following five key intersections.

1. Highway 219/E 2nd Street
2. Springbrook Road/E Fernwood Road/E 2nd Street
3. Highway 219/Industrial Parkway/ Springbrook Road
4. Highway 219/Wilsonville Road/Bypass
5. Highway 219/Wynooski Road

Volume-to-Capacity (v/c) ratios matched closely to those reported on the Kittelson figures utilizing HCM 2000 methodology. The prior analysis was completed using Traffix, for which the original output sheets were not made

available to Mackenzie. For the three intersections within the study area which had prior v/c ratios reported, the v/c ratios were matched within a 10% margin of error.

The lane configurations within the Synchro model were based on the OR18: Newberg-Dundee Bypass (Phase 1G) (Springbrook Road) plans dated 12/11/2014. Due to differences between the proposed lane configurations at Highway 219/Industrial Parkway/Springbrook Road during the time of the study and now, the lane configuration used in the 2012 analysis was assumed, which includes an extra southbound through lane. An ideal saturated flow rate of 1750 vehicles per hour per lane was used per the ODOT Analysis Procedures Manual for small urban areas. All signals were coded to simulate actuated-coordinated signals with a cycle length of 120 seconds. Right turns-on-red were assumed at all signalized intersections.

The following tables show the performance standard for each intersection, as well as the v/c ratios from the 2016 and 2035 analyses for each scenario. *Note that any v/c ratio that exceeds the stated Performance Standard is highlighted in **bold red**.*

2016 INTERSECTION ANALYSIS – V/C							
Intersection	Performance Standard	Scenario					
		Option 1	Springbrook RI-RO	Wynooski Signal	Springbrook + Wynooski	No Throughs-2nd	No Throughs-Fernwood
Highway 99/Springbrook Road	0.75	**0.97**	**0.97**	**0.97**	**0.97**	**0.97**	**0.97**
Highway 219/Bypass	0.65	0.65	0.65	**0.68**	0.64	0.65	0.65
Highway 219/Springbrook Road	0.80	0.69	0.66	0.62	0.63	0.73	0.70
Springbrook Road/E Fernwood Road	0.90	0.77	0.81	0.85	0.73	0.80	0.80
Highway 219/E 2nd Street	0.80	0.38	0.61	0.61	0.61	0.39	0.38
Highway 219/Wynooski Road	0.80	0.26	0.26	0.57	0.56	0.26	0.26

2035 INTERSECTION ANALYSIS – V/C							
Intersection	Performance Standard	Scenario					
		Option 1	Springbrook RI-RO	Wynooski Signal	Springbrook + Wynooski	No Throughs-2nd	No Throughs-Fernwood
Highway 99/Springbrook Road	0.75	**1.35**	**1.35**	**1.35**	**1.35**	**1.35**	**1.35**
Highway 219/Bypass	0.65	**0.88**	**0.84**	**0.90**	**0.83**	**0.87**	**0.86**
Highway 219/Springbrook Road	0.80	**0.90**	**0.88**	0.79	**0.85**	**0.96**	**0.92**
Springbrook Road/E Fernwood Road	0.90	**1.46**	**1.79**	**1.95**	**1.67**	**1.55**	**1.54**
Highway 219/E 2nd Street	0.80	0.74	**1.04**	**1.04**	**1.04**	0.78	0.74
Highway 219/Wynooski Road	0.80	0.65	0.65	**0.84**	**0.84**	0.65	0.65

RESULTS

In the 2016 analysis, all of the scenarios show adequate v/c ratios for the five key intersections, with the exception of the Wynooski signal scenario, which exceeds the standard at the Highway 219/Bypass intersection.

The proposed no-through movement scenario shows some intersections operating at up to a 4% higher v/c ratio than in ODOT's 'Option 1,' but still operate at acceptable levels in 2016.

Two intersections are anticipated to be over capacity in 2035 under ODOT's 'Option 1' and no-through movement scenarios, specifically the Springbrook intersections with Highway 99W and Fernwood Road. For the other scenarios, three intersections would be over capacity.

The Highway 219/Springbrook Road intersection was analyzed by modeling, specifically: one shared through-right, one through, and one exclusive left turn lane on the southbound approach, yielding a v/c ratio of 0.69. This configuration is consistent with the original plans for the Highway 219/Springbrook Road intersection in the Newberg Dundee Bypass Tier 2 Final Technical Memorandum. In the Tier 2 memorandum, this intersection resulted in a 0.62 v/c ratio under the Phase 1 – Improved scenario. The latest Newberg-Dundee Bypass (Phase 1G) ODOT plans call for one shared through-right and one exclusive left turn lane on the southbound approach. This configuration results in a v/c ratio of 0.92, which exceeds the performance standard of 0.80. It is suggested that ODOT change their plans to match the original Tier 2 plans for the Highway 219/Springbrook Road intersection in order to meet the capacity standard of 0.80. It is also recommended ODOT change their plan at this intersection to the previous Tier 2 configuration since this has already been approved.

Based on this analysis, it is clear the proposed no-through movement scenario has little impact on the area roads and intersection operation. No intersections will exceed performance standards at opening of the Phase 1 Bypass in 2016. Further, this scenario has less impact than other scenarios (that also have significant added costs), such as the Wynooski signal options with an alignment along Adolf Road. We request the City of Newberg make a finding that no additional

amendment to the City's Transportation System Plan is needed for the ODOT/LHNA proposed no-through movement scenario at the intersection of the Phase 1 Bypass at Highway 219 opposite Wilsonville Road. Furthermore, we request that the Newberg City staff go on record as supporting the no-through movement design to mitigate potentially significant impacts on the 12 miles of Wilsonville Road, the City of Wilsonville, four schools, active farms, and I-5 Exit 283.

If you should have any comments or concerns, please do not hesitate to contact us.

Sincerely,

Brent Ahrend, PE
Senior Associate | Traffic Engineer

Enclosure(s): July 1 20123 Memorandum
Volume Figures
Synchro output sheets
Tier 2 Final Technical Document (excerpts)
OR18 Newberg-Dundee Bypass (Phase 1G) plans

c: Jessica Pelz, Doug Rux – City of Newberg
Stan Halle, Cole Presthus – Ladd Hill Neighborhood Association
Tim Potter, Kelly Amador, Sonny Chickering – ODOT
Ralph Bloemers – Crag Law Center
Janet Jones – Mackenzie

Newberg-Dundee
BYPASS PROJECT

MEMORANDUM

Date:	July 1, 2013
To:	Kelly Amador
From:	William Ciz
Subject:	Wilsonville Road Traffic Counts
cc:	
Project Number:	274-2395-058
Project Name:	Newberg Dundee Bypass Project

Here is a quick summary of 2011 Traffic Counts, 2016 Traffic Projections (No Build and Build), and 2035 Traffic Projections (No Build and Build) on Wilsonville Road east of Oregon 219, Clackamas and Yamhill County functional classification for Wilsonville Road, a review of Phase 1 E Signing Plans and responses to COP comments. Also attached are the Figures from the Traffic Analysis Reports with the counts and projections referenced in case you would like to forward them.

2011 Peak Hour Traffic Counts (See 2011 Traffic Count pdf, Intersection #21) at the Wilsonville Road/Springbrook Road Intersection were 205 vehicles traveled westbound (70 turned right and 135 turned left onto Springbrook Road). 140 vehicles traveled eastbound (70 turned right and 70 turned left from Springbrook Road onto Wilsonville Road).

2016 No Build Peak Hour Traffic Projections (See Figure 2A, Intersection #21) at the Wilsonville Road/Springbrook Road Intersection were 230 vehicles traveled westbound (80 turned right and 150 turned left onto Springbrook Road). 170 vehicles traveled eastbound (85 turned right and 85 turned left from Springbrook Road onto Wilsonville Road).

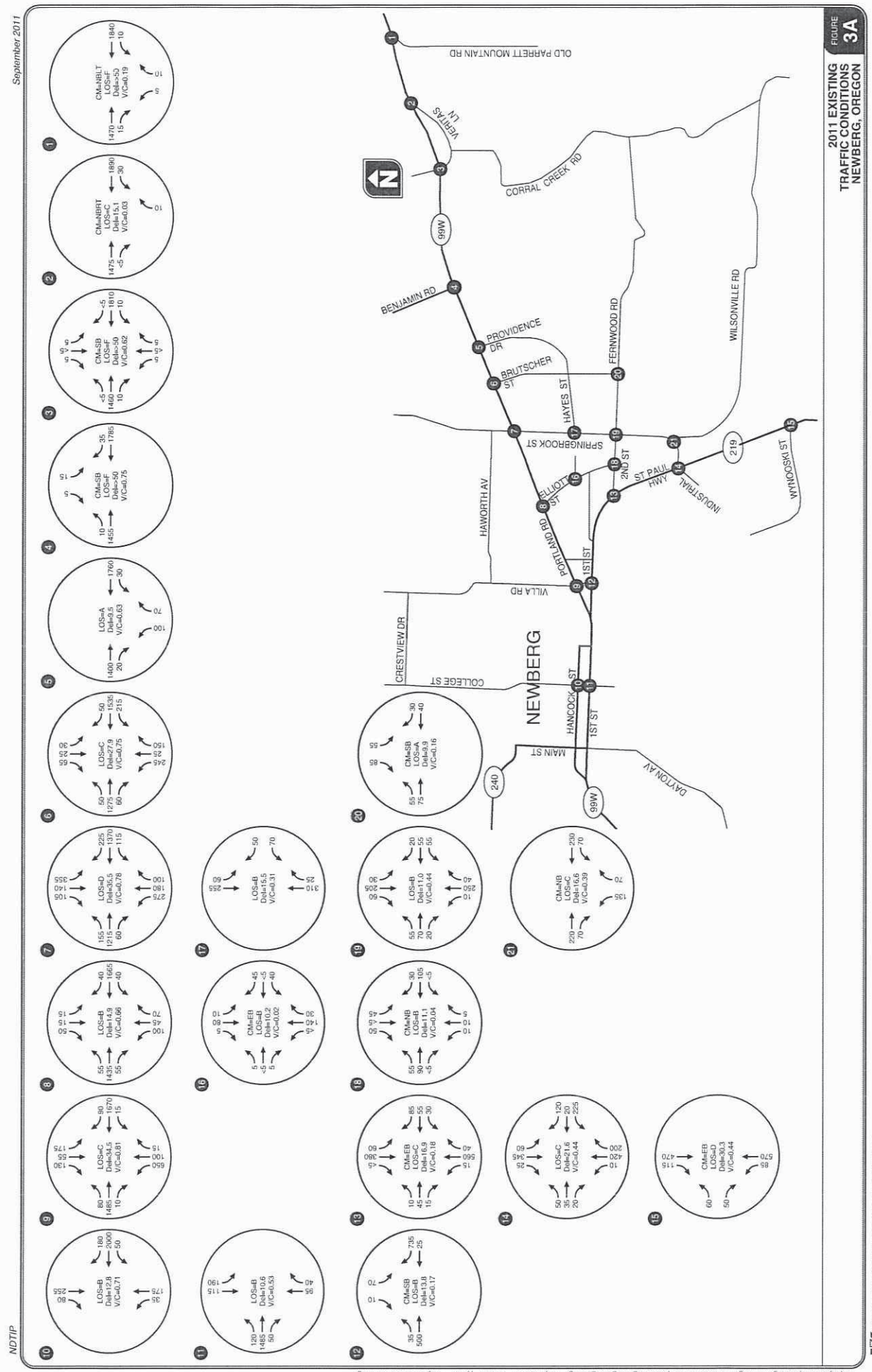
2016 Build Peak Hour Traffic Projection (See Figure 7, Intersection #5) at the new Oregon 219/Wilsonville Road Intersection are 230 vehicles will travel westbound (165 will turn right onto Oregon 219 , 25 will enter the Phase 1 Bypass and 40 will turn left onto Oregon 219). 170 vehicles will travel eastbound (15 will turn right form Oregon 219, 25 will enter from the Phase 1 Bypass and 130 will turn left from Oregon 219).

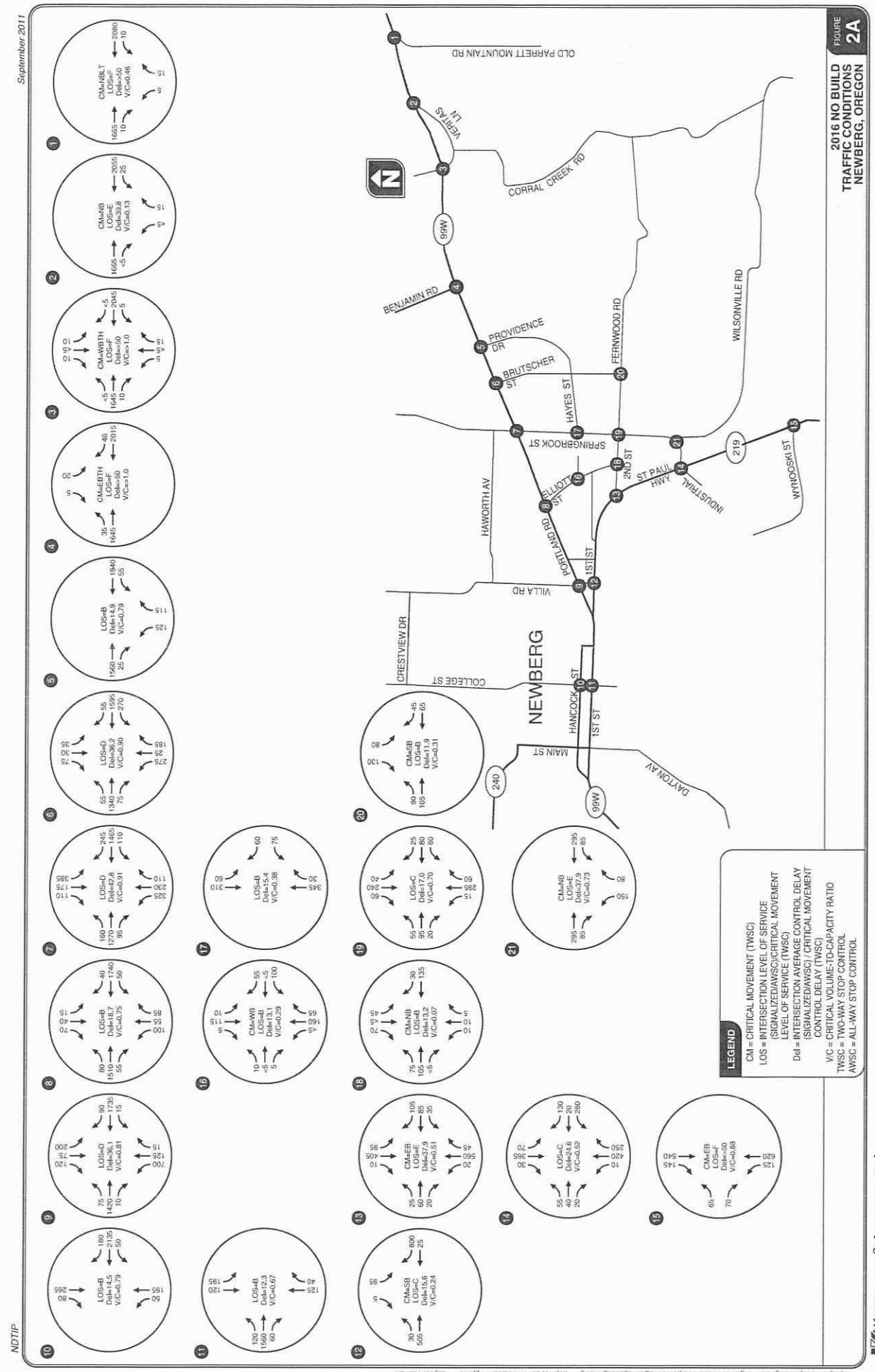
2035 No Build Peak Hour Traffic Projections (See Figure 4A, Intersection #21) at the Wilsonville Road/Springbrook Road Intersection were 310 vehicles traveled westbound (115 turned right and 195 turned left onto Springbrook Road). 280 vehicles traveled eastbound (140 turned right and 140 turned left from Springbrook Road onto Wilsonville Road).

2035 Peak Hour Traffic Projection (See Figure 8, Intersection #5) at the new Oregon 219/Wilsonville Road Intersection are 315 vehicles will travel westbound (230 will turn right onto Oregon 219 , 35 will entered the Phase 1 Bypass and 50 will turned left onto Oregon 219). 330 vehicles will travel eastbound (25 will turn right from Oregon 219, 40 will enter from the Phase 1 Bypass and 265 will turn left from Oregon 219).

Wilsonville Road is classified as a Major Collector by Yamhill County and as a Major Arterial in Clackamas County.

I also review the current signing plans for Phase 1E. There are no signs at the Oregon 219/Phase 1 Bypass/Wilsonville Road Intersection directing traffic to use Wilsonville Road.


NEWBERG
OLD PARRETT MOUNTAIN RD
VERMAS LN
CORRAL CREEK RD
99W
BENJAMIN RD
PROVIDENCE DR
BRUTSCHER ST
HAYES ST
FERNWOOD RD
SPRINGBROOK ST
WILSONVILLE RD
HAWORTH AV
ELLIOTT ST
2ND ST
ST PAUL HWY
INDUSTRIAL
219
WYNOOSKI ST
VILLA RD
PORTLAND RD
1ST ST
CRESTVIEW DR
COLLEGE ST
HANCOCK ST
MAIN ST
DAYTON AV
240
99W
2011 EXISTING TRAFFIC CONDITIONS NEWBERG, OREGON
FIGURE 3A
September 2011
NDTIP
KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING / PLANNING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September 2011
OLD PARRETT MOUNTAIN RD
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FERNWOOD RD
WILSONVILLE RD
SPRINGBROOK ST
HAWORTH AV
ELLIOTT ST
2ND ST
ST PAUL HWY
INDUSTRIAL
219
WYNOOSKI ST
VILLA RD
PORTLAND RD
1ST ST
CRESTVIEW DR
COLLEGE ST
NEWBERG
HANCOCK ST
MAIN ST
DAYTON AV
240
99W
LEGEND
CM = CRITICAL MOVEMENT (TWSC)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED/AWSC)/CRITICAL MOVEMENT LEVEL OF SERVICE (TWSC)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED/AWSC) / CRITICAL MOVEMENT CONTROL DELAY (TWSC)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO
TWSC = TWO-WAY STOP CONTROL
AWSC = ALL-WAY STOP CONTROL
2016 NO BUILD TRAFFIC CONDITIONS NEWBERG, OREGON
FIGURE 2A
KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING / PLANNING
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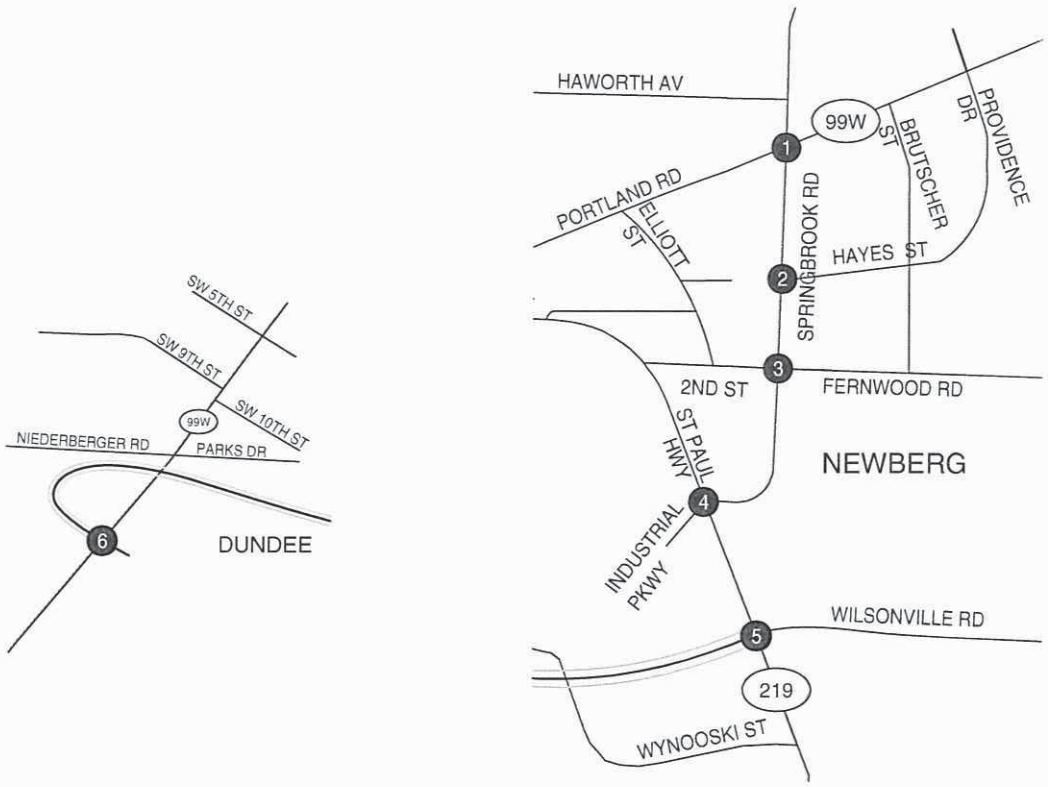

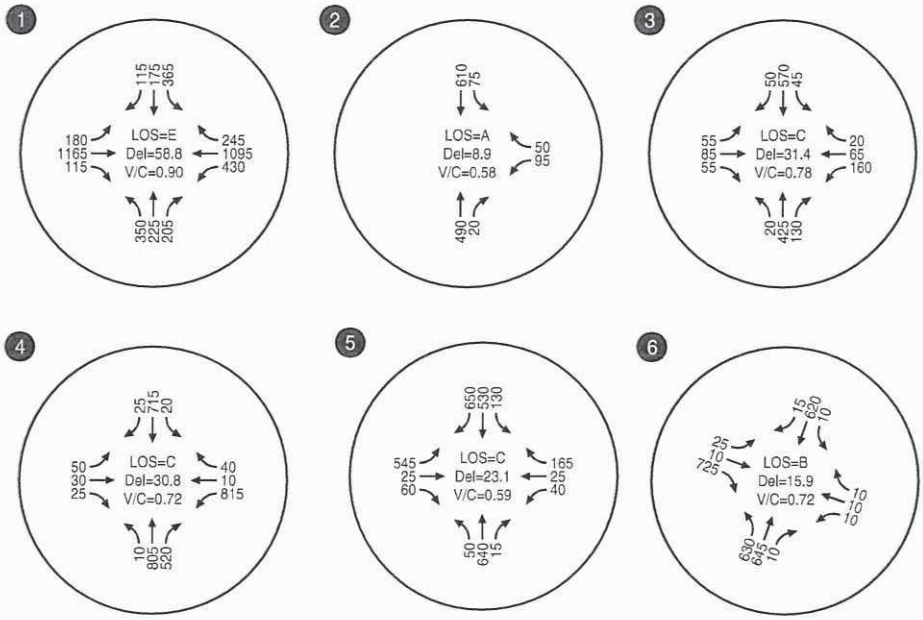

LEGEND

LOS = INTERSECTION LEVEL OF SERVICE

Del = INTERSECTION AVERAGE CONTROL DELAY

V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

YEAR 2016 PHASE 1 SCENARIO
DESIGN HOUR TRAFFIC CONDITIONS
NEWBERG, OREGON

FIGURE 7

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION PLANNING / TRAFFIC ENGINEERING

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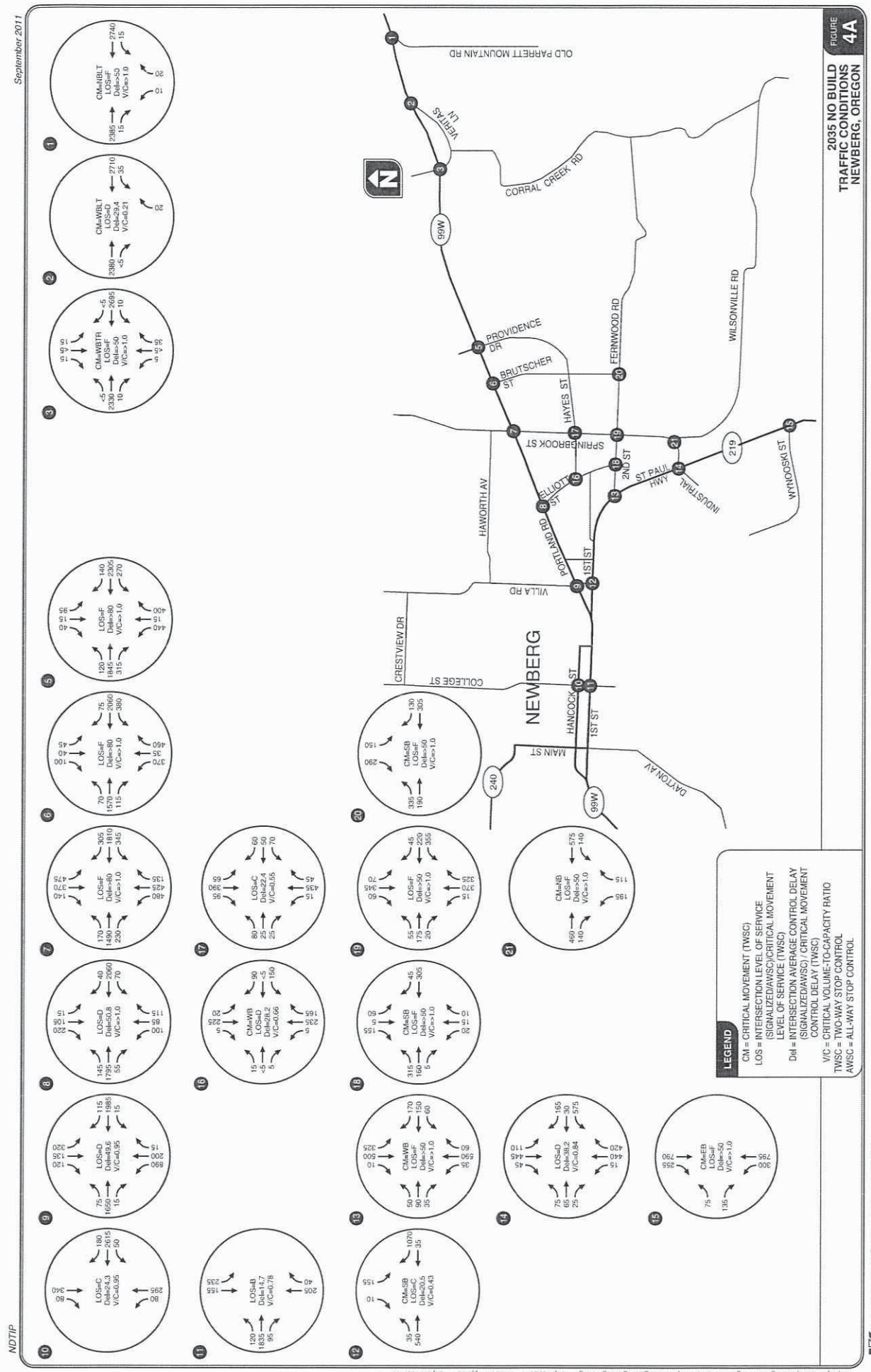
NDTIP
September 2011
2035 NO BUILD
TRAFFIC CONDITIONS
NEWBERG, OREGON
FIGURE 4A
LEGEND
CM = CRITICAL MOVEMENT (TWSC)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED/AWSC)/CRITICAL MOVEMENT LEVEL OF SERVICE (TWSC)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED/AWSC) / CRITICAL MOVEMENT CONTROL DELAY (TWSC)
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NEWBERG
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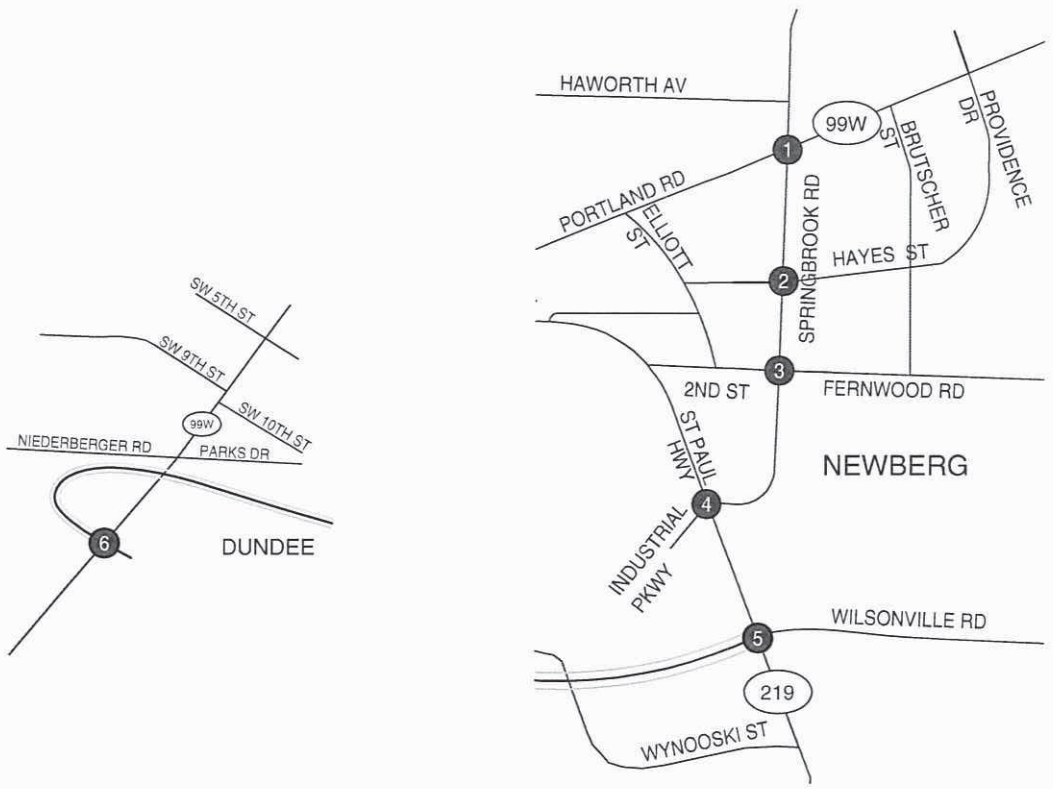
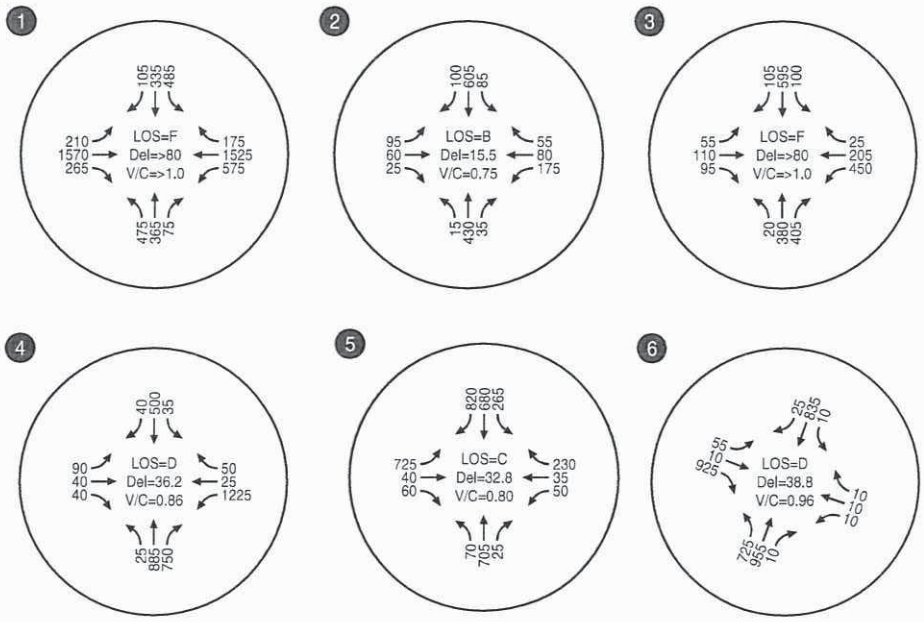
ELLIOTT ST
2ND ST
ST PAUL HWY
INDUSTRIAL
WYNOOSKI ST
HAWORTH AV
PORTLAND RD
1ST ST
VILLA RD
CRESTVIEW DR
COLLEGE ST
HANCOCK ST
MAIN ST
DAYTON AV
240
219
KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING / PLANNING





LEGEND

LOS = INTERSECTION LEVEL OF SERVICE

Del = INTERSECTION AVERAGE CONTROL DELAY

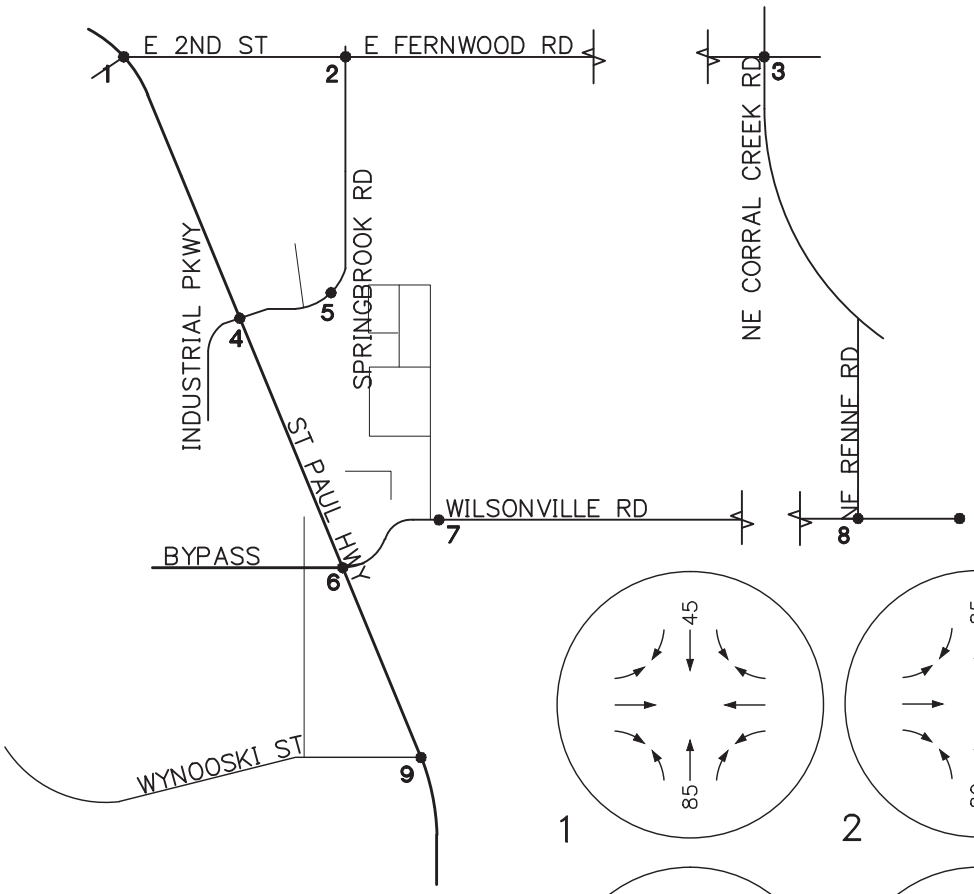
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

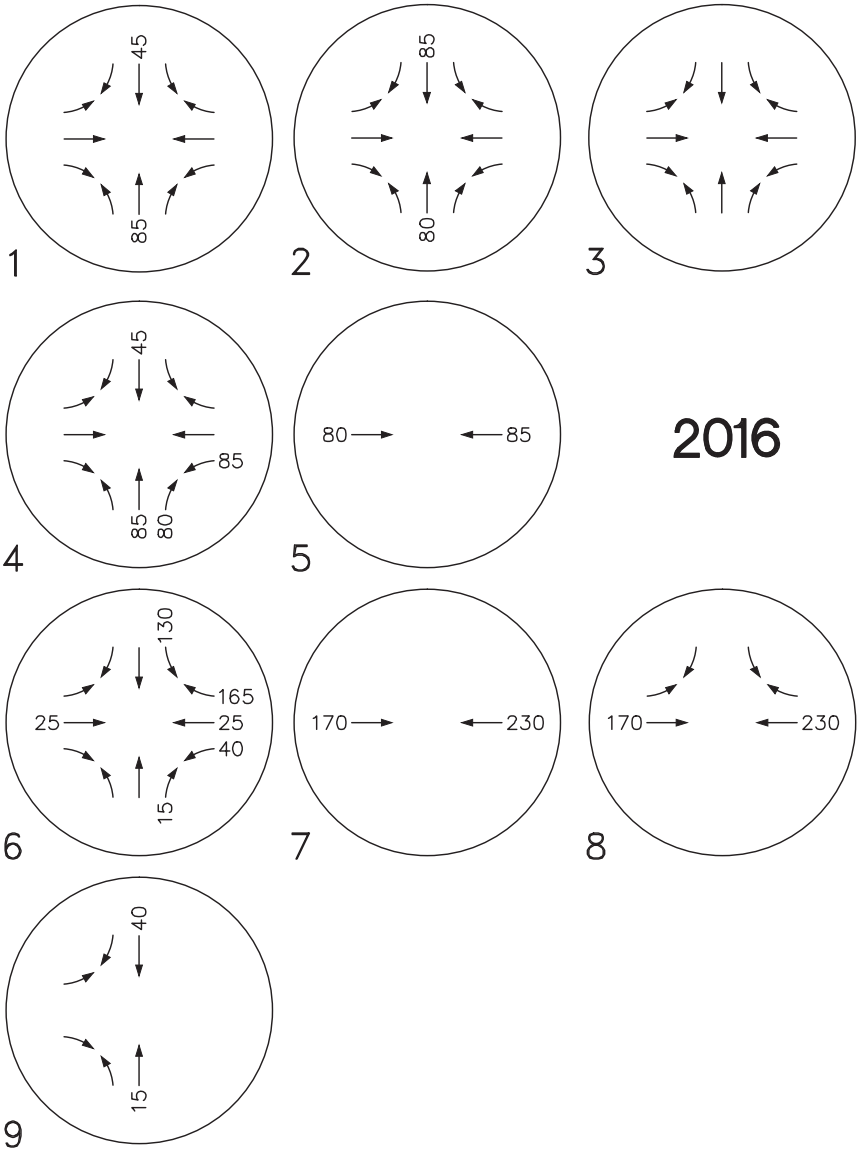
YEAR 2035 PHASE 1 SCENARIO
DESIGN HOUR TRAFFIC CONDITIONS
NEWBERG, OREGON

FIGURE **8**

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION PLANNING / TRAFFIC ENGINEERING

H:\profile\9372 - Newberg-Dundee Bypass\2012 July Analysis TST\dwg\9372_Fig_2012_July.dwg Jul 25, 2012 - 11:39am - darguea Layout Tab: 02





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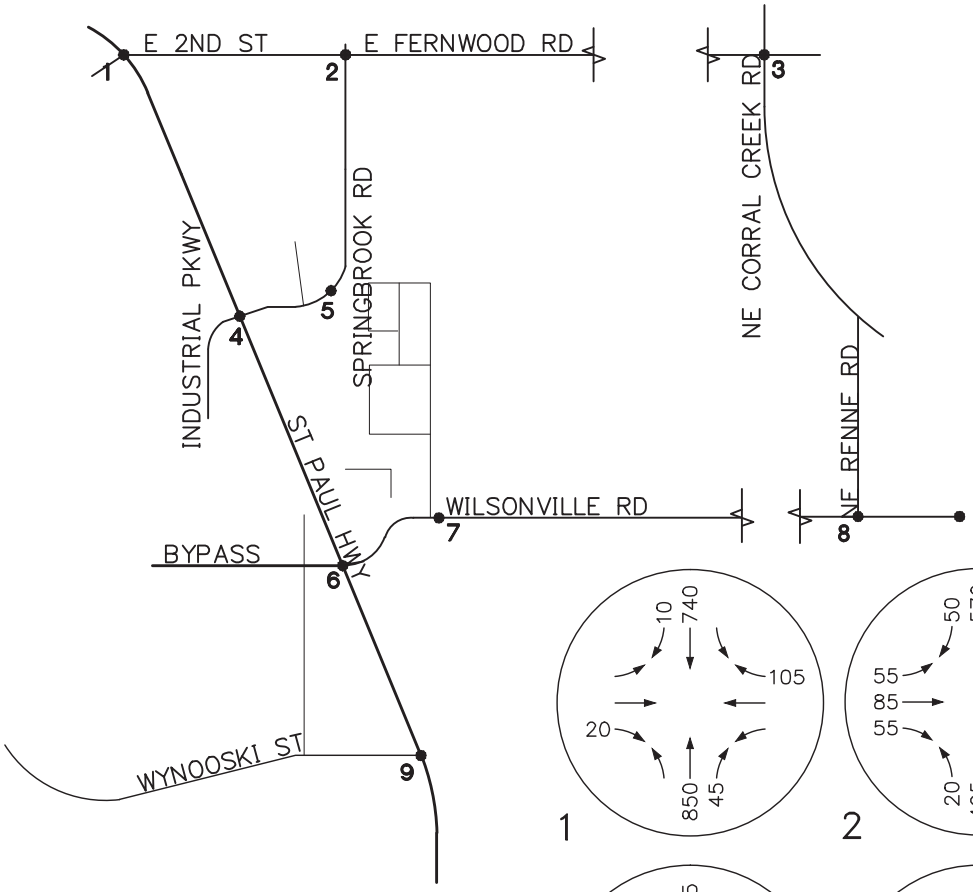
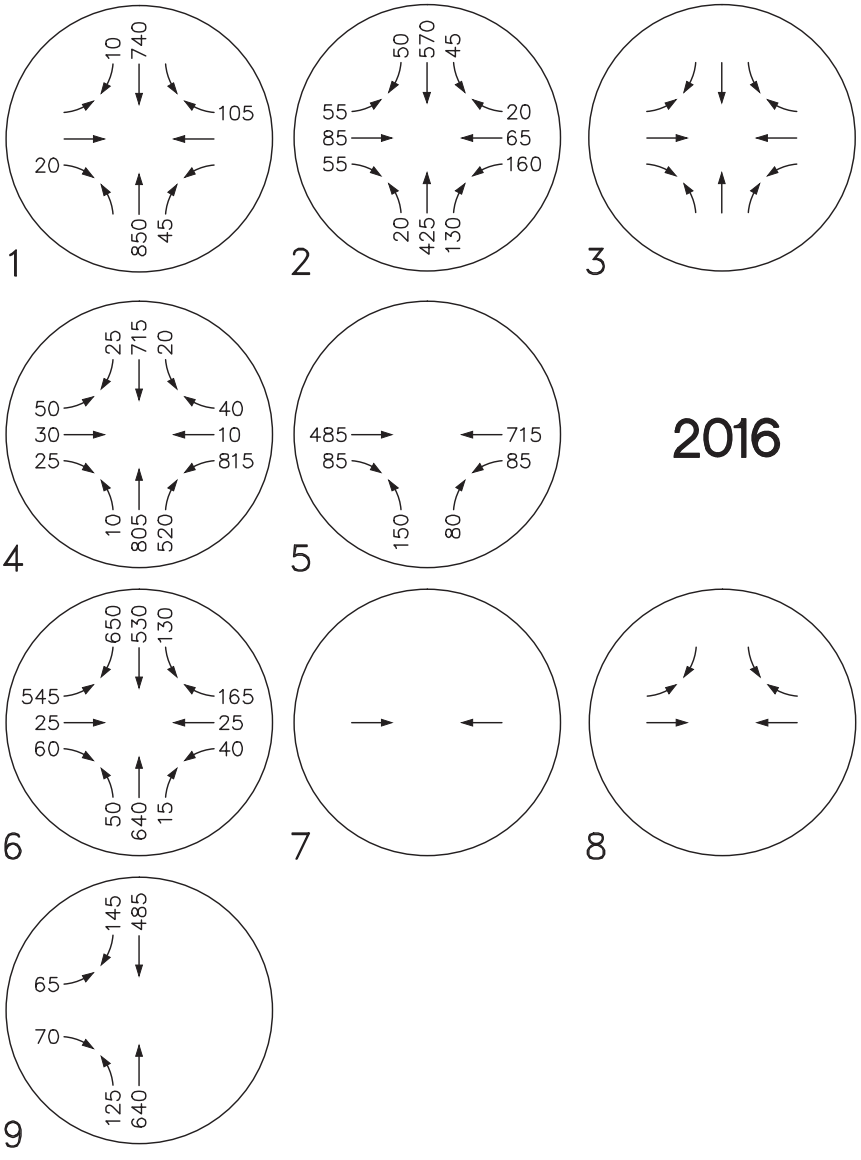
OPTION 1
PM PEAK HOUR

WILSONVILLE ROAD REVIEW
NEWBERG, OREGON

FIGURE
1A





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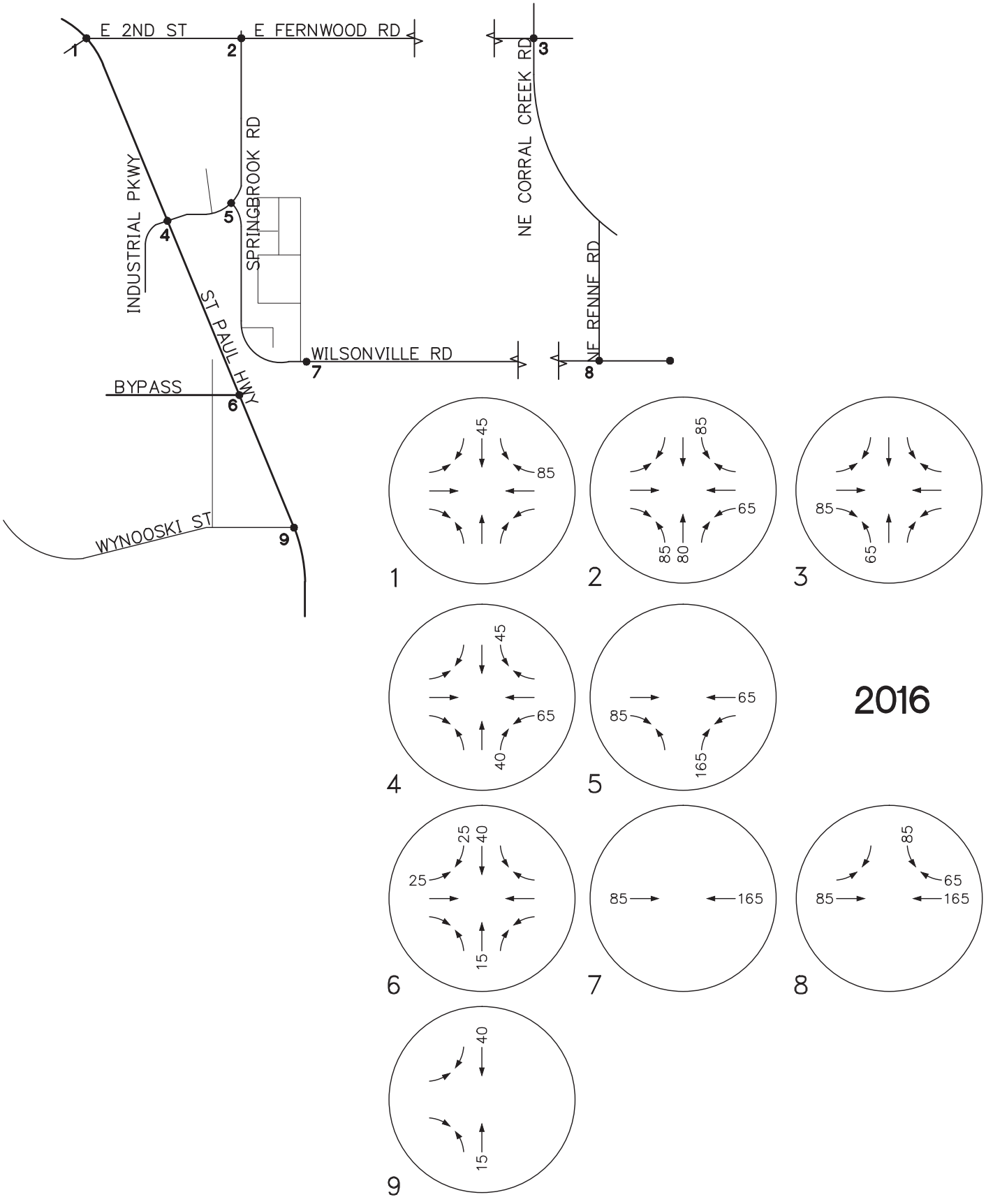

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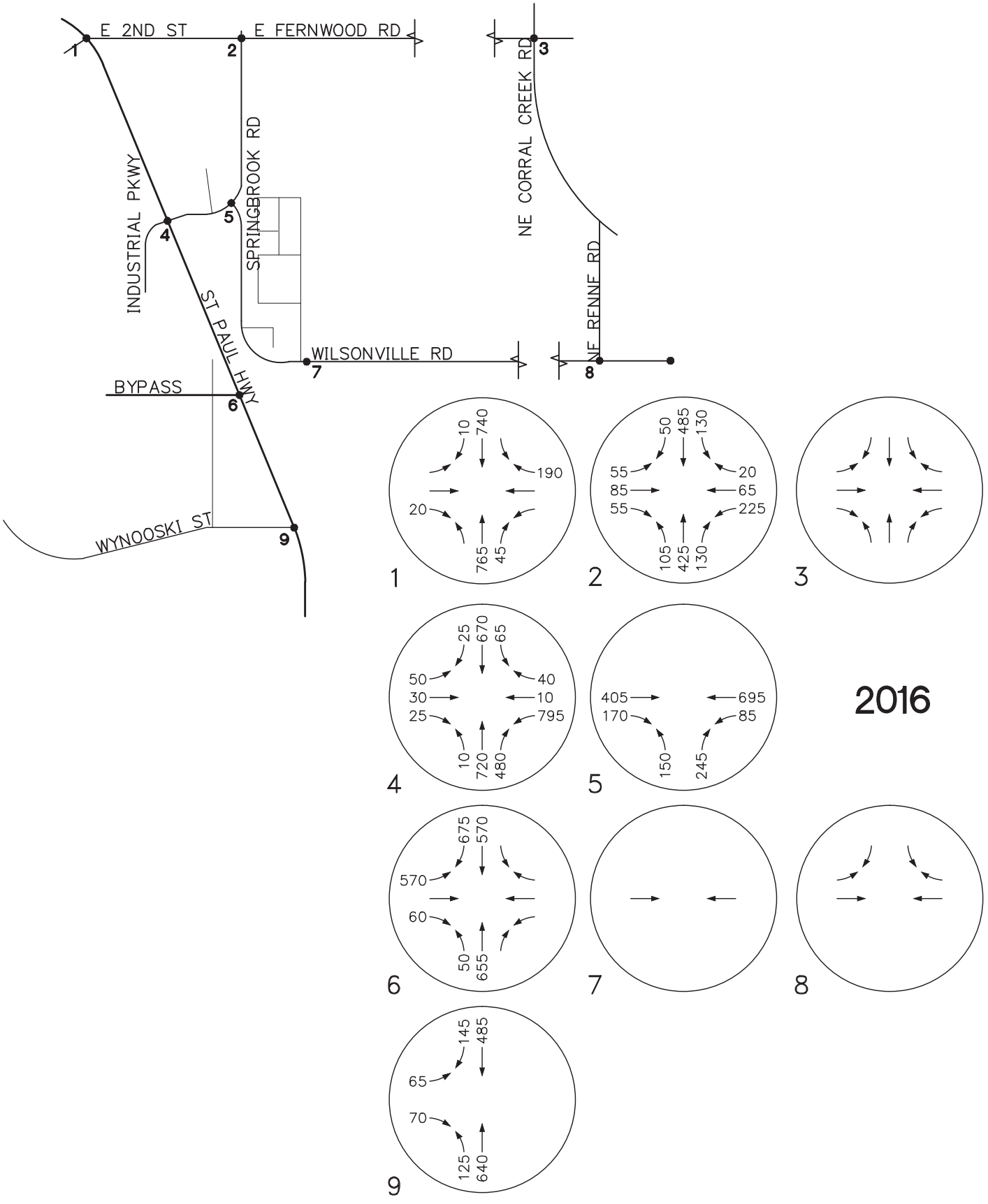
SPRINGBROOK RIGHT IN/OUT
PM PEAK HOUR

WILSONVILLE ROAD REVIEW
NEWBERG, OREGON

FIGURE
2A



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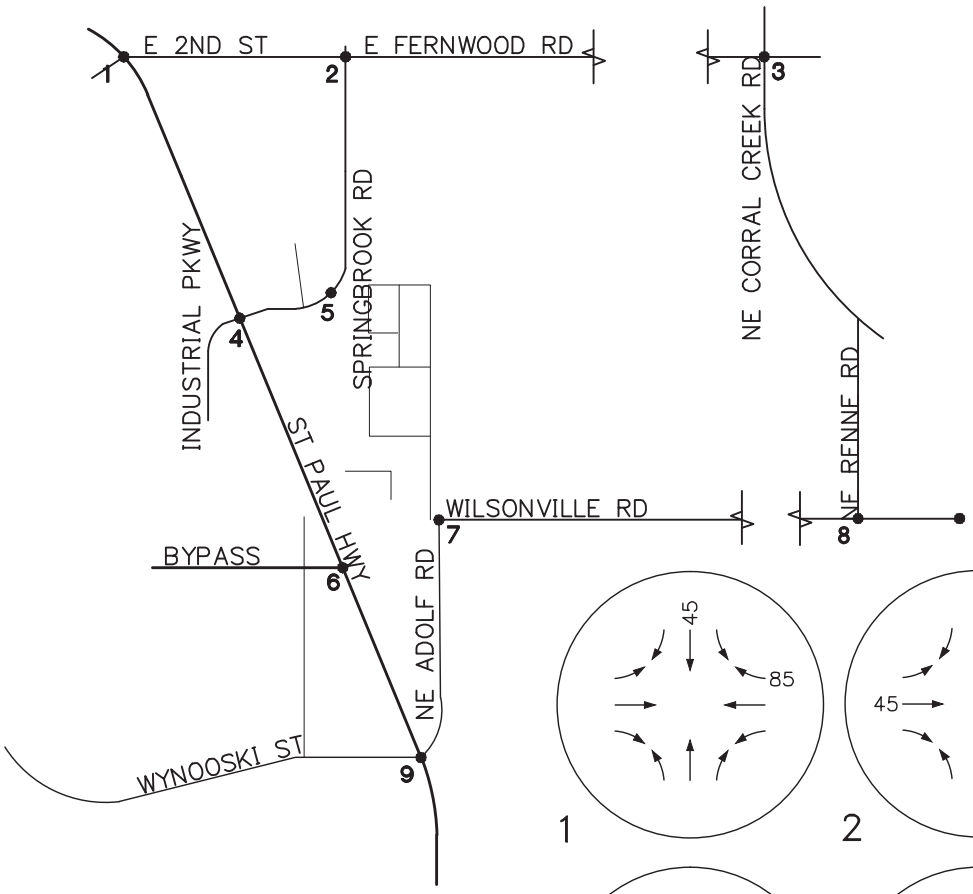
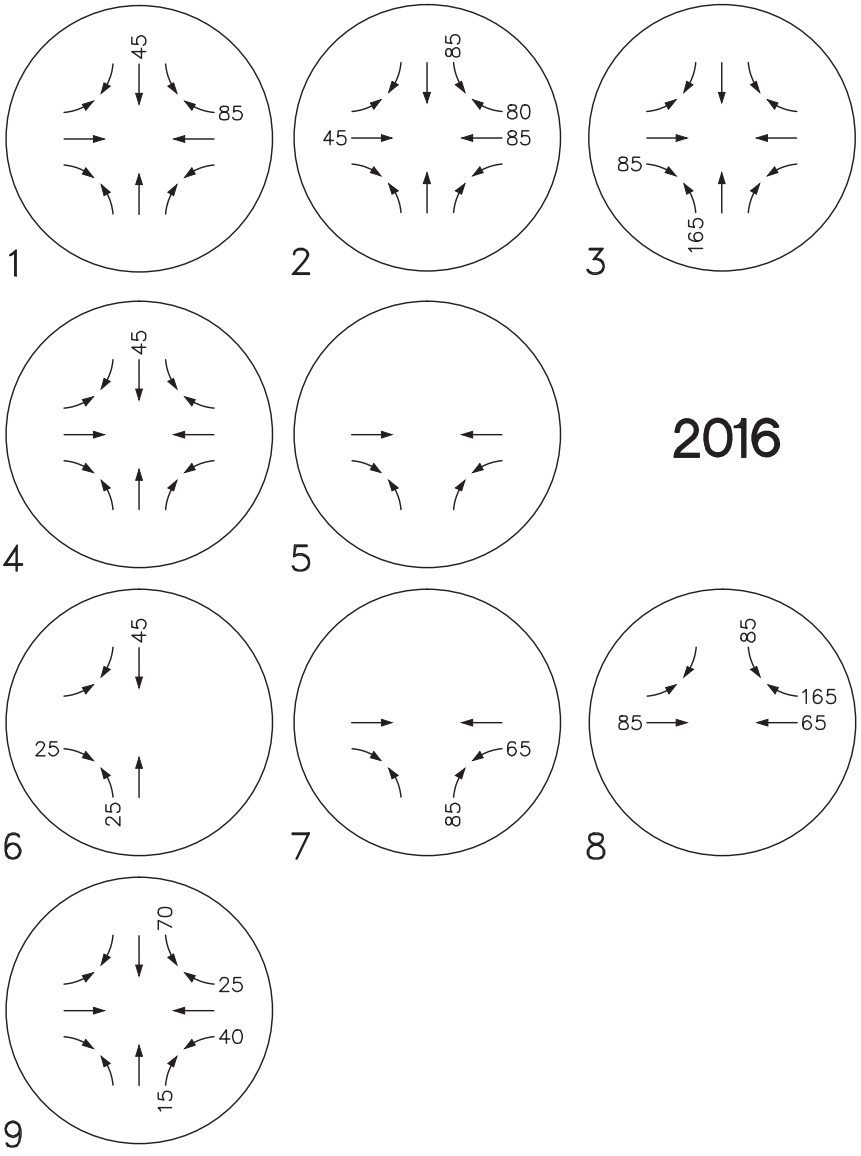
SPRINGBROOK RIGHT IN/OUT
PM PEAK HOUR TOTAL

WILSONVILLE ROAD REVIEW
NEWBERG, OREGON

FIGURE 2B





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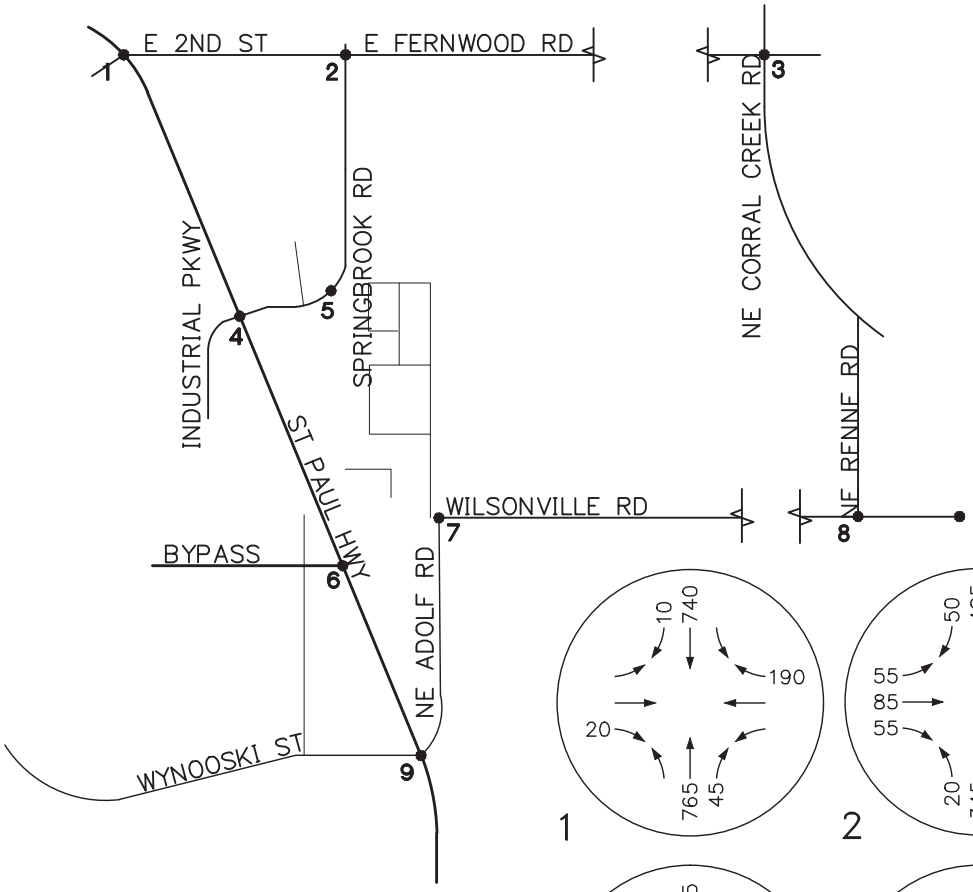

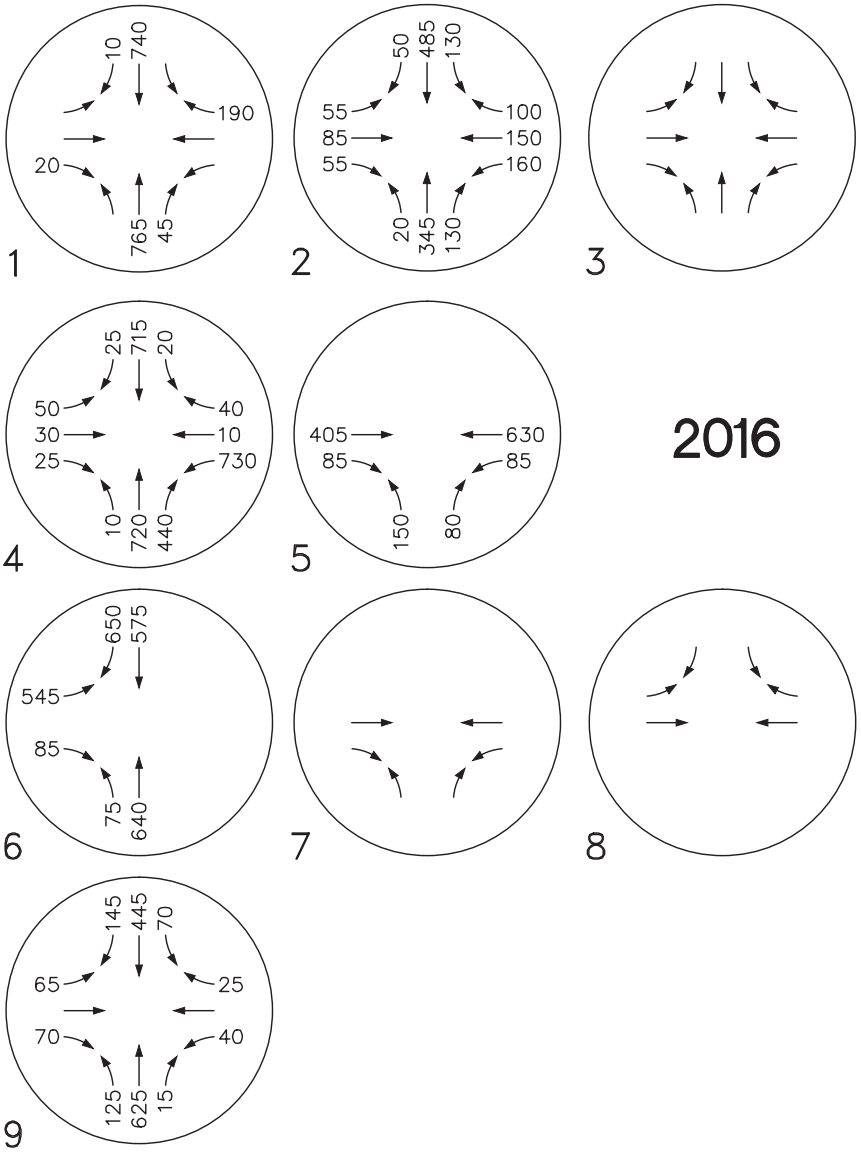

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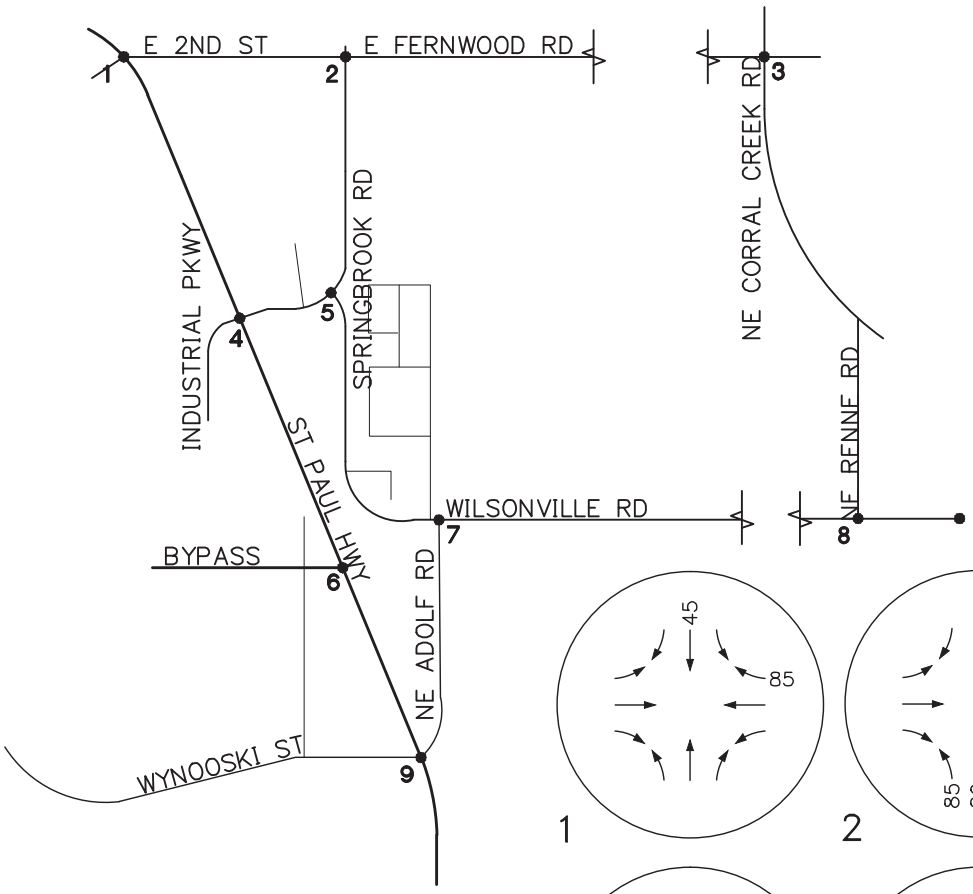
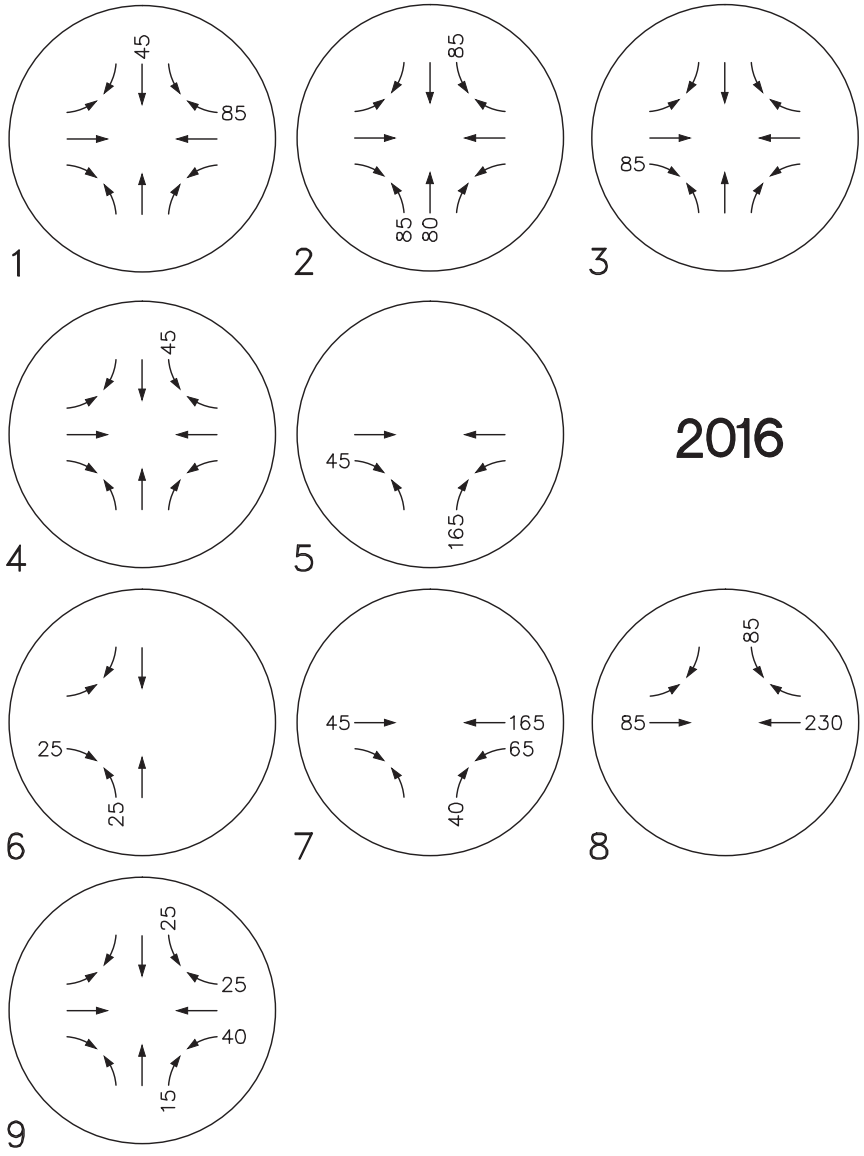
WYNOOSKI SIGNAL
PM PEAK HOUR TOTAL
WILSONVILLE ROAD REVIEW
NEWBERG, OREGON

FIGURE 3B





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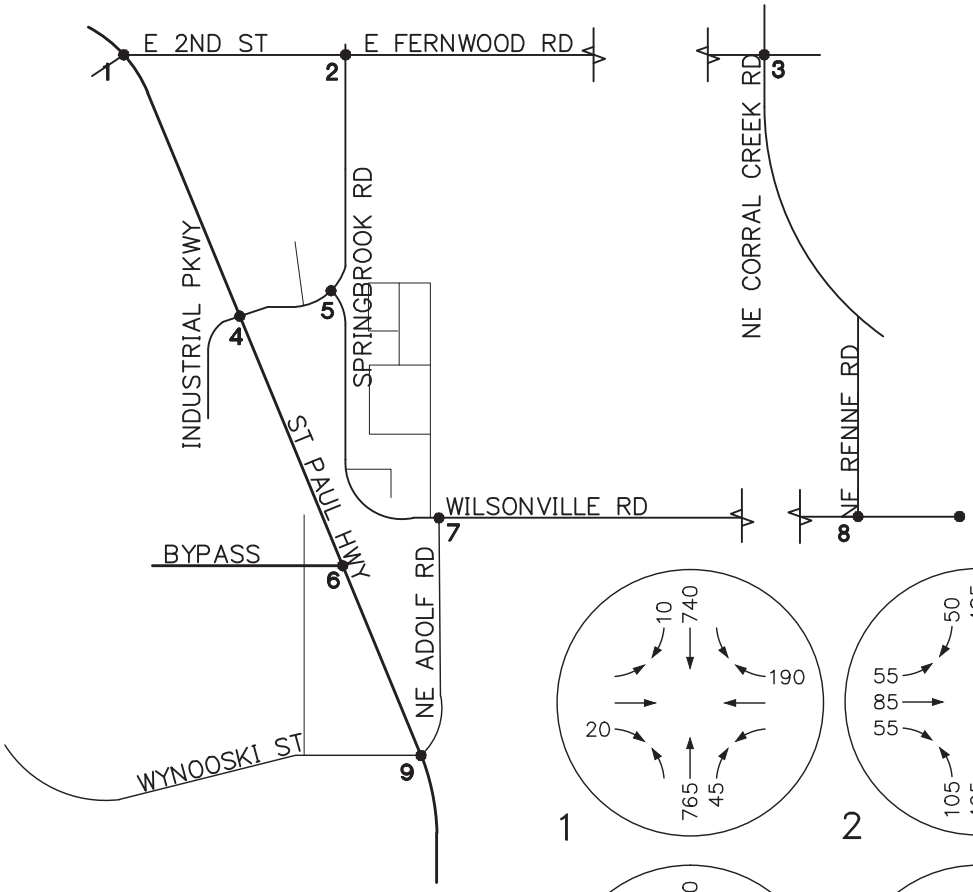

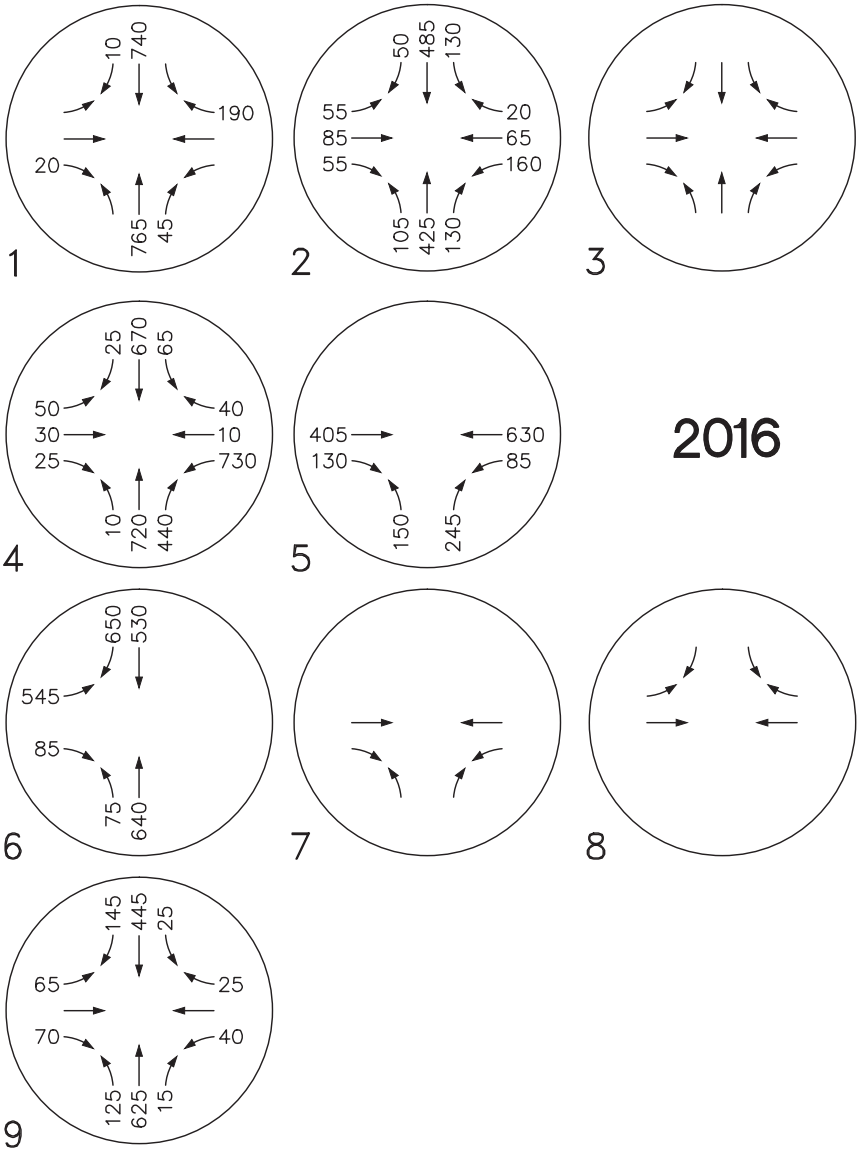

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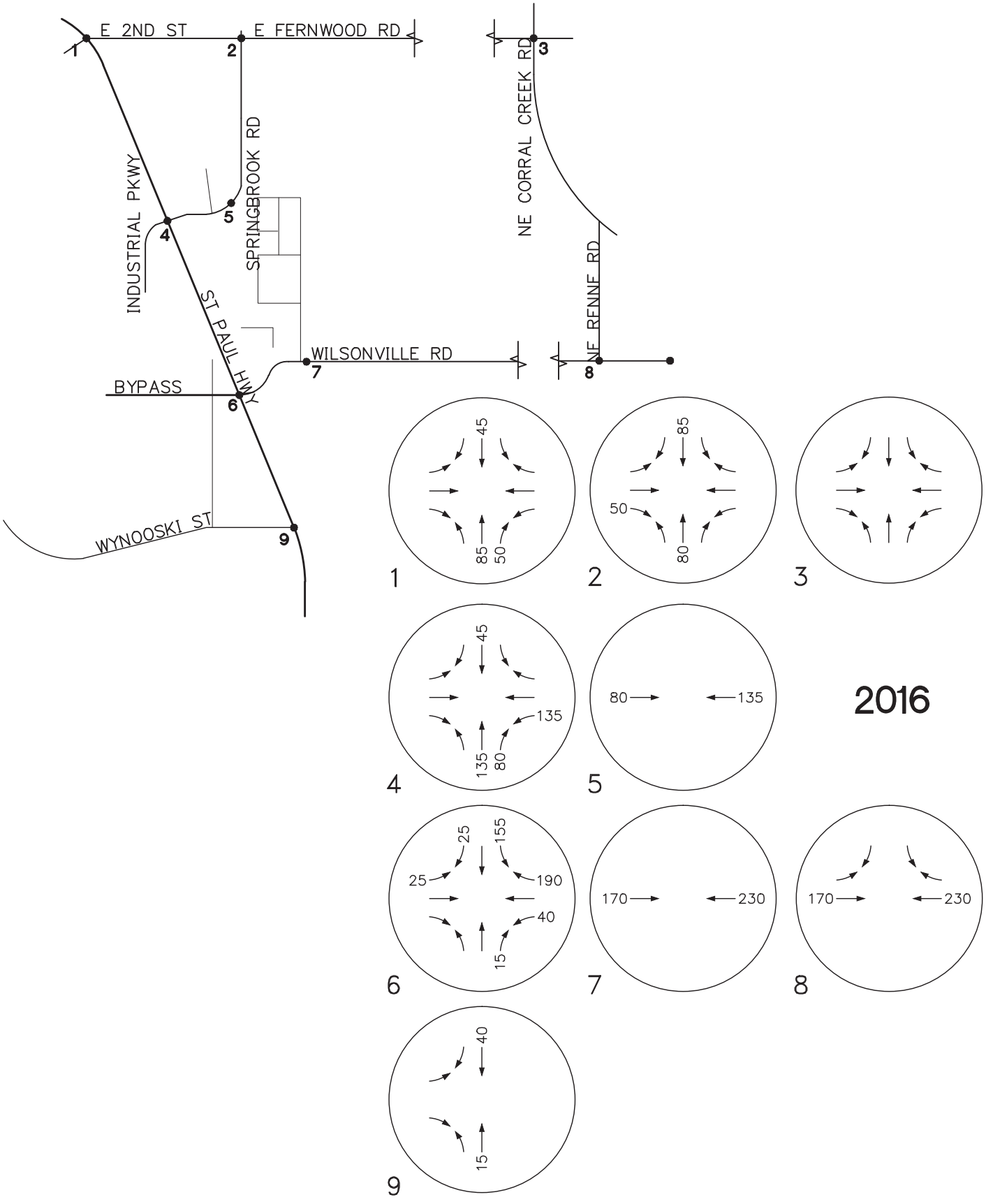
SPRINGBROOK + WYNOOSKI
PM PEAK HOUR TOTAL

WILSONVILLE ROAD REVIEW
NEWBERG, OREGON

FIGURE 4B



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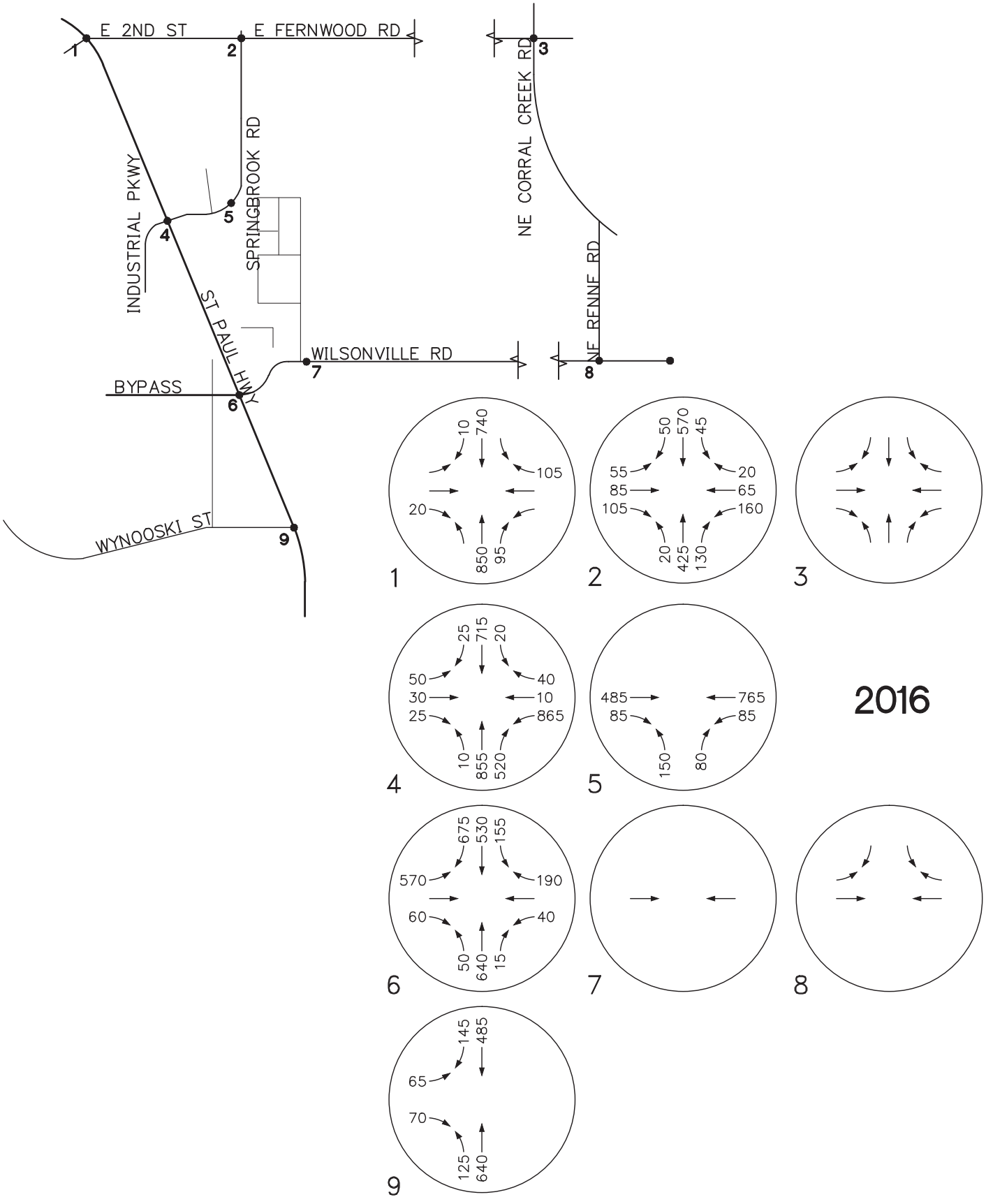
NO THROUGHS-2ND
PM PEAK HOUR

WILSONVILLE ROAD REVIEW
NEWBERG, OREGON

FIGURE
5A



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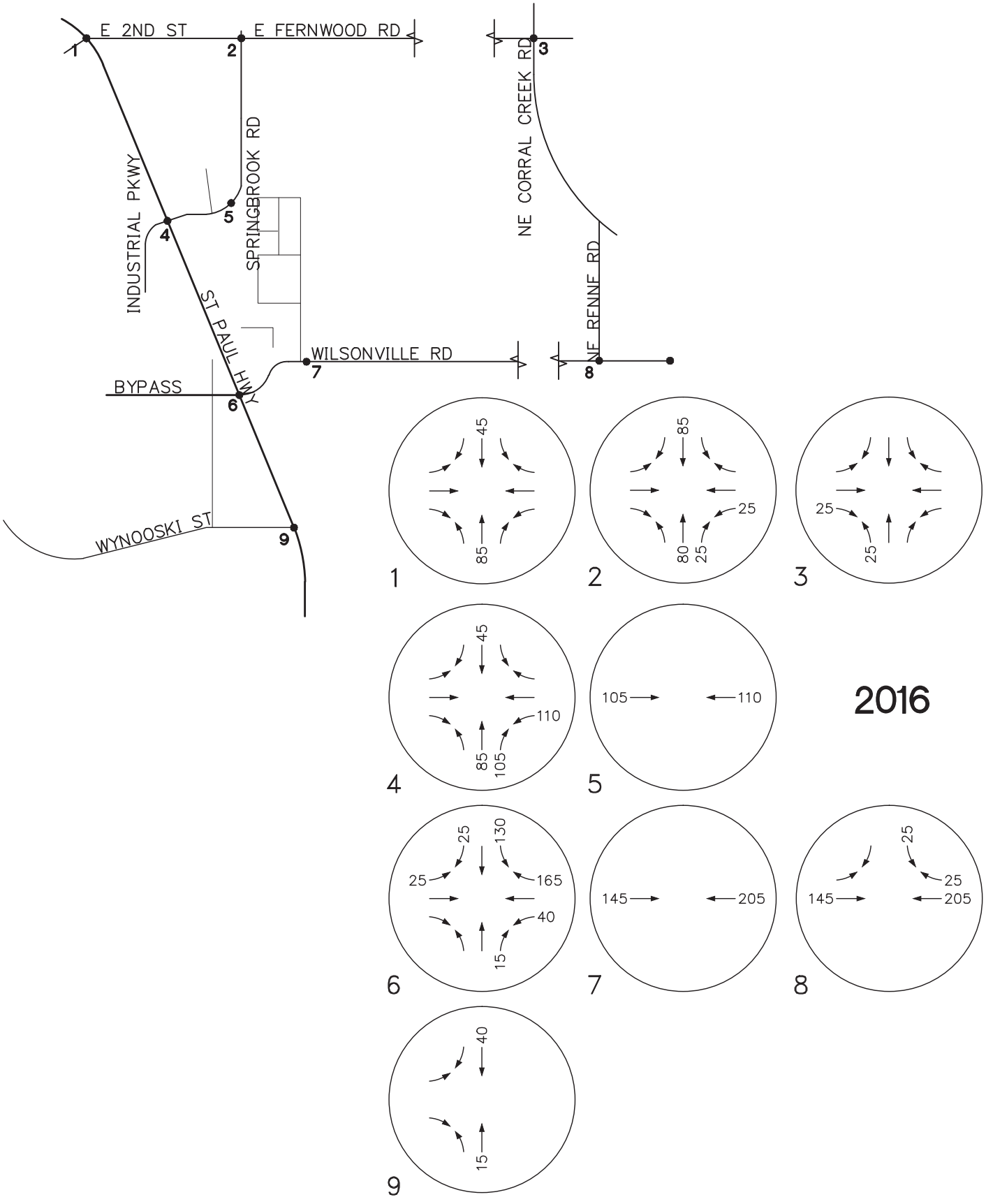
PM PEAK HOUR TOTAL

WILSONVILLE ROAD REVIEW
NEWBERG, OREGON

FIGURE
5B



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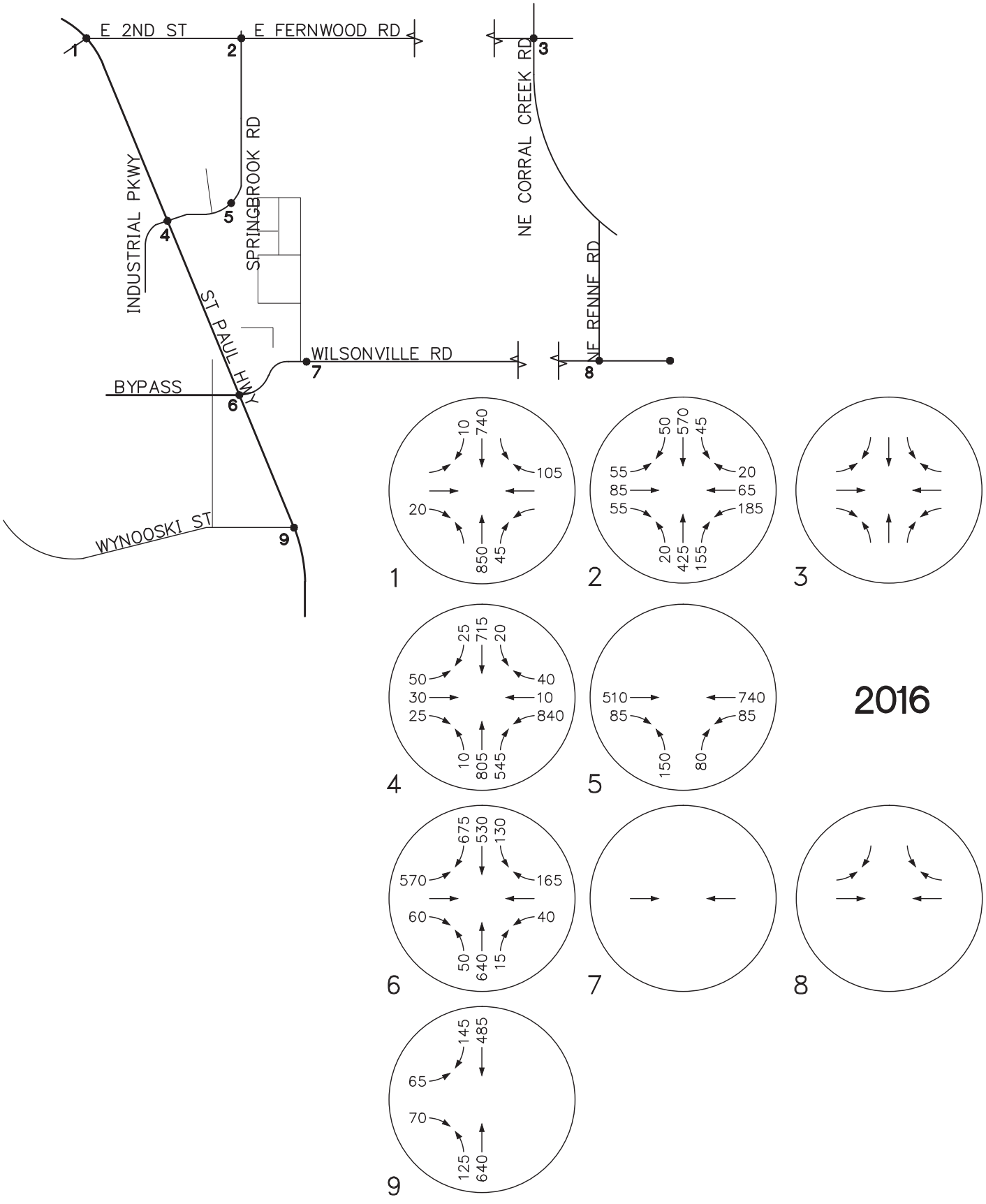
PM PEAK HOUR

WILSONVILLE ROAD REVIEW
NEWBERG, OREGON

FIGURE
6A



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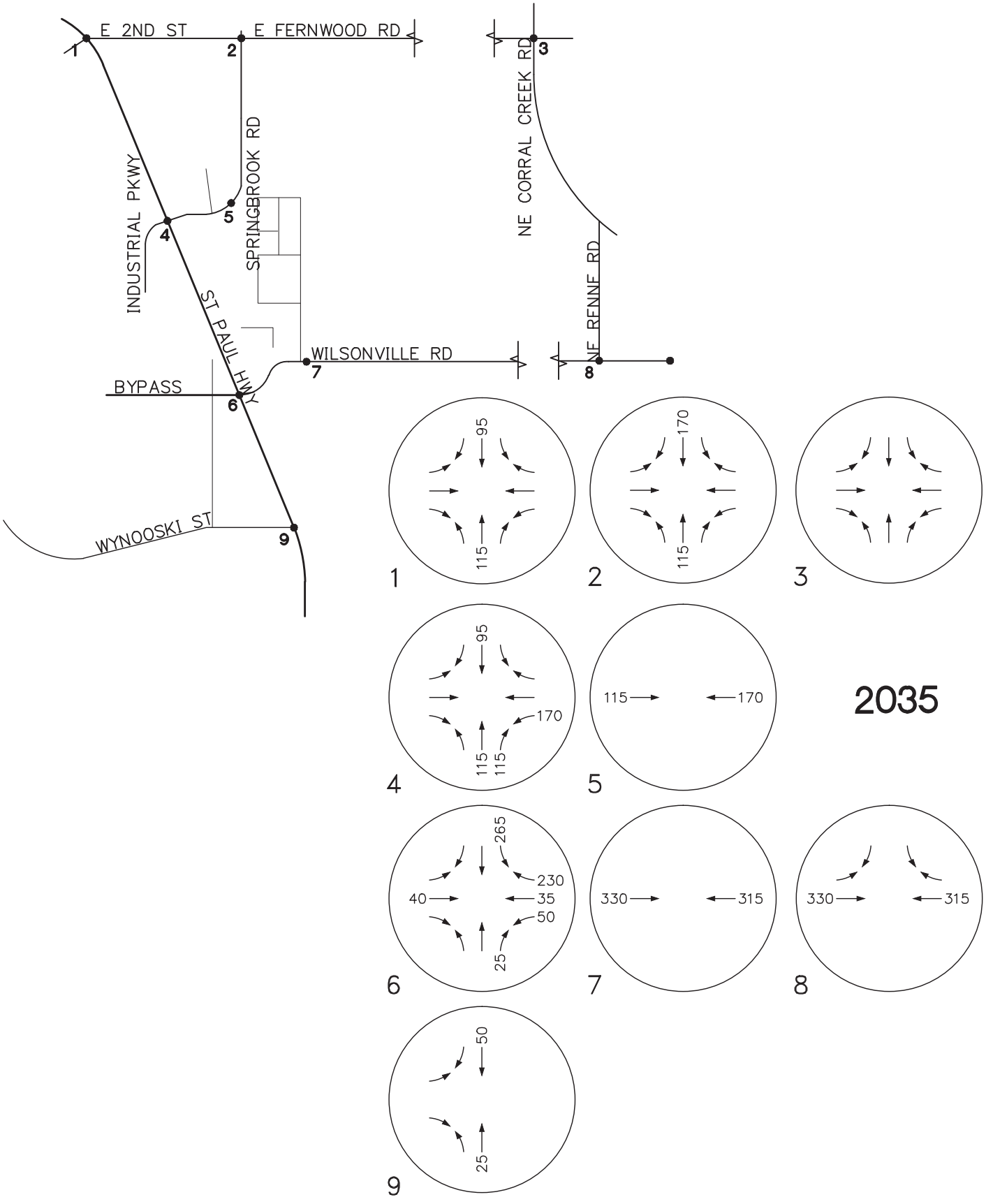
PM PEAK HOUR TOTAL

WILSONVILLE ROAD REVIEW
NEWBERG, OREGON

FIGURE 6B



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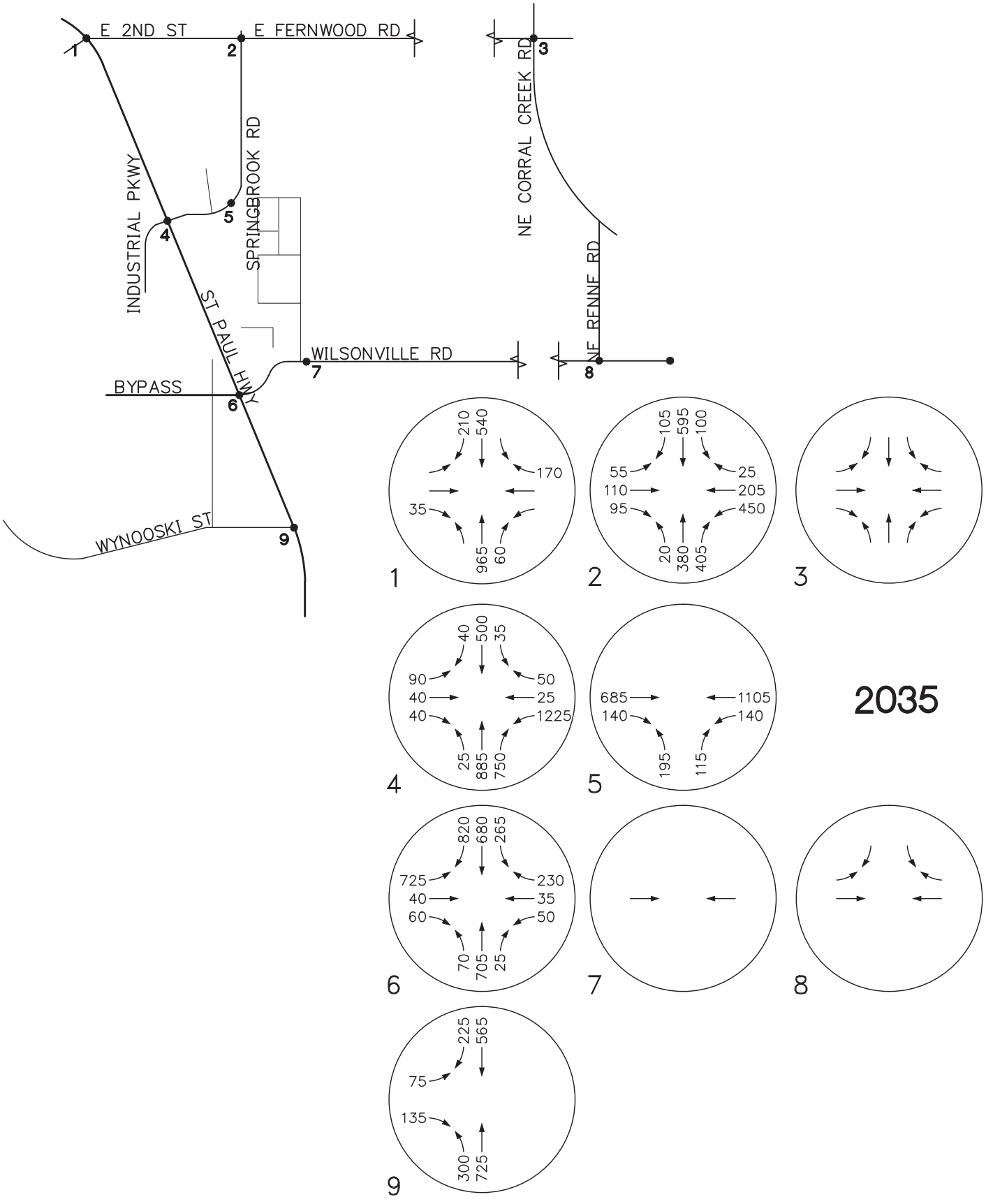
OPTION 1
PM PEAK HOUR

WILSONVILLE ROAD REVIEW
NEWBERG, OREGON

FIGURE
7A



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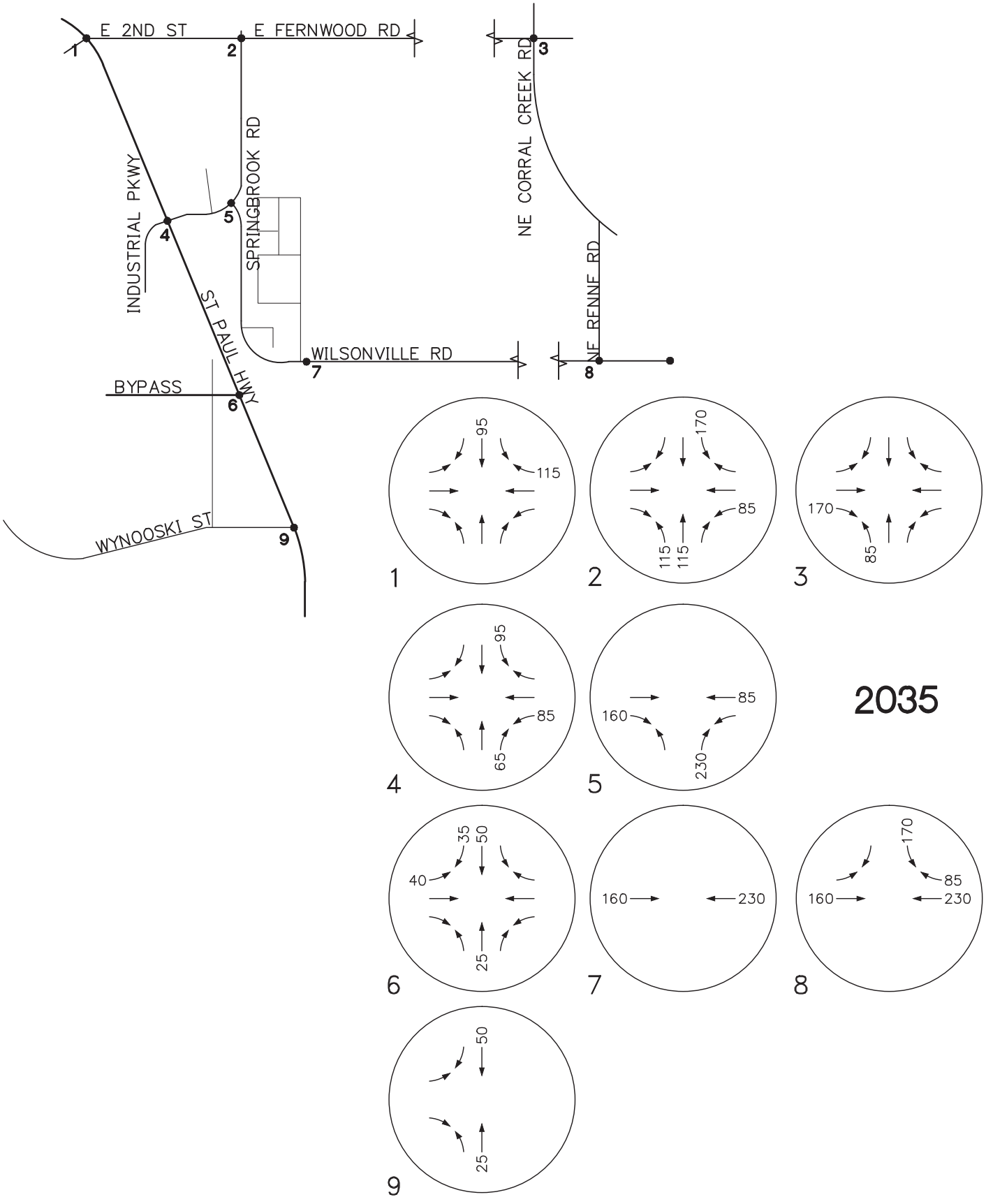
OPTION 1
PM PEAK HOUR TOTAL

WILSONVILLE ROAD REVIEW
NEWBERG, OREGON

FIGURE 7B



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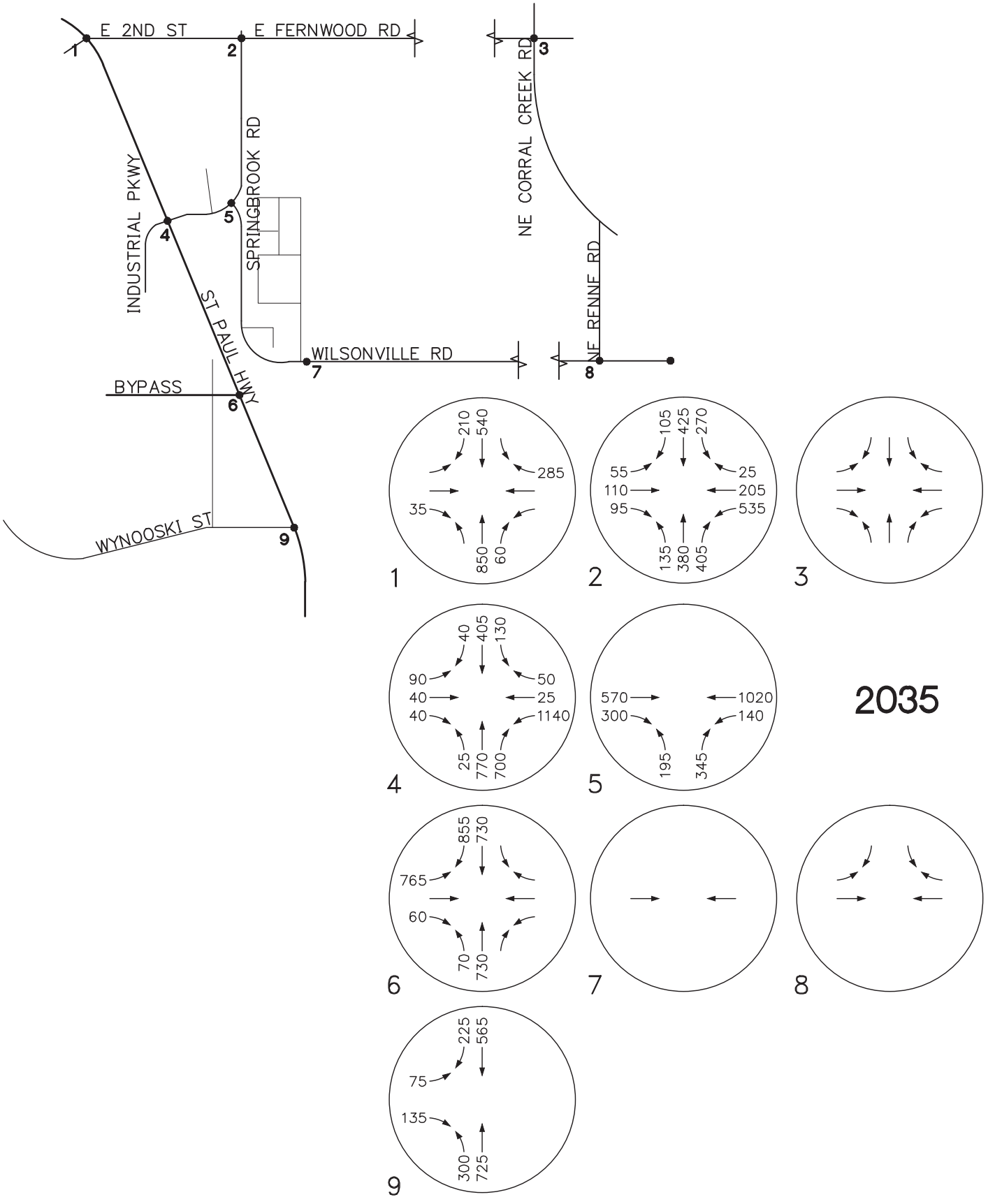
SPRINGBROOK RIGHT IN/OUT
PM PEAK HOUR

WILSONVILLE ROAD REVIEW
NEWBERG, OREGON

FIGURE
8A



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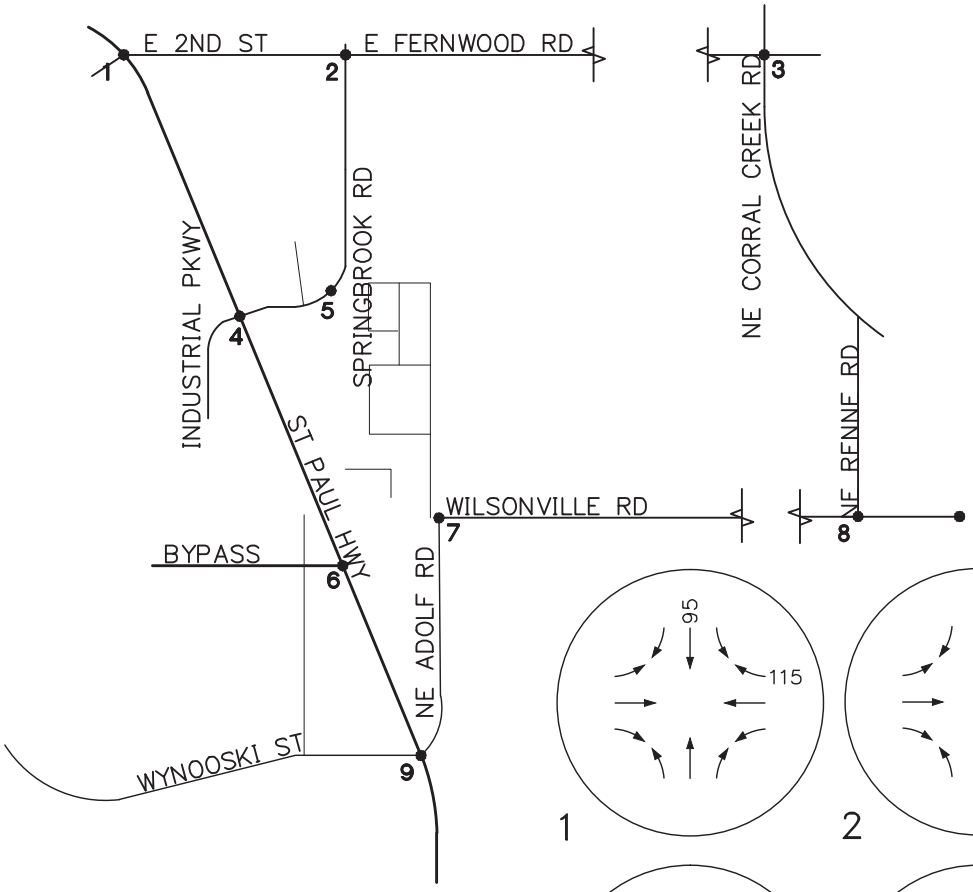
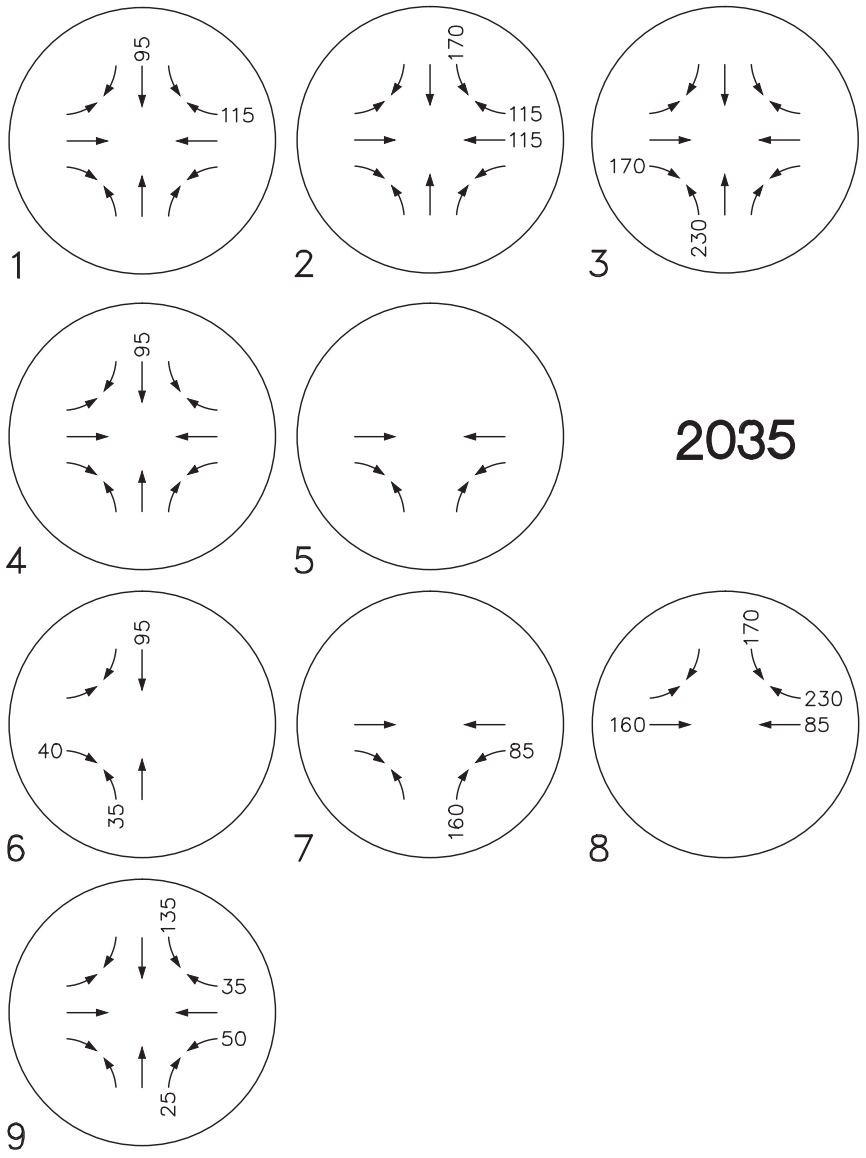
PM PEAK HOUR TOTAL

WILSONVILLE ROAD REVIEW
NEWBERG, OREGON

FIGURE 8B





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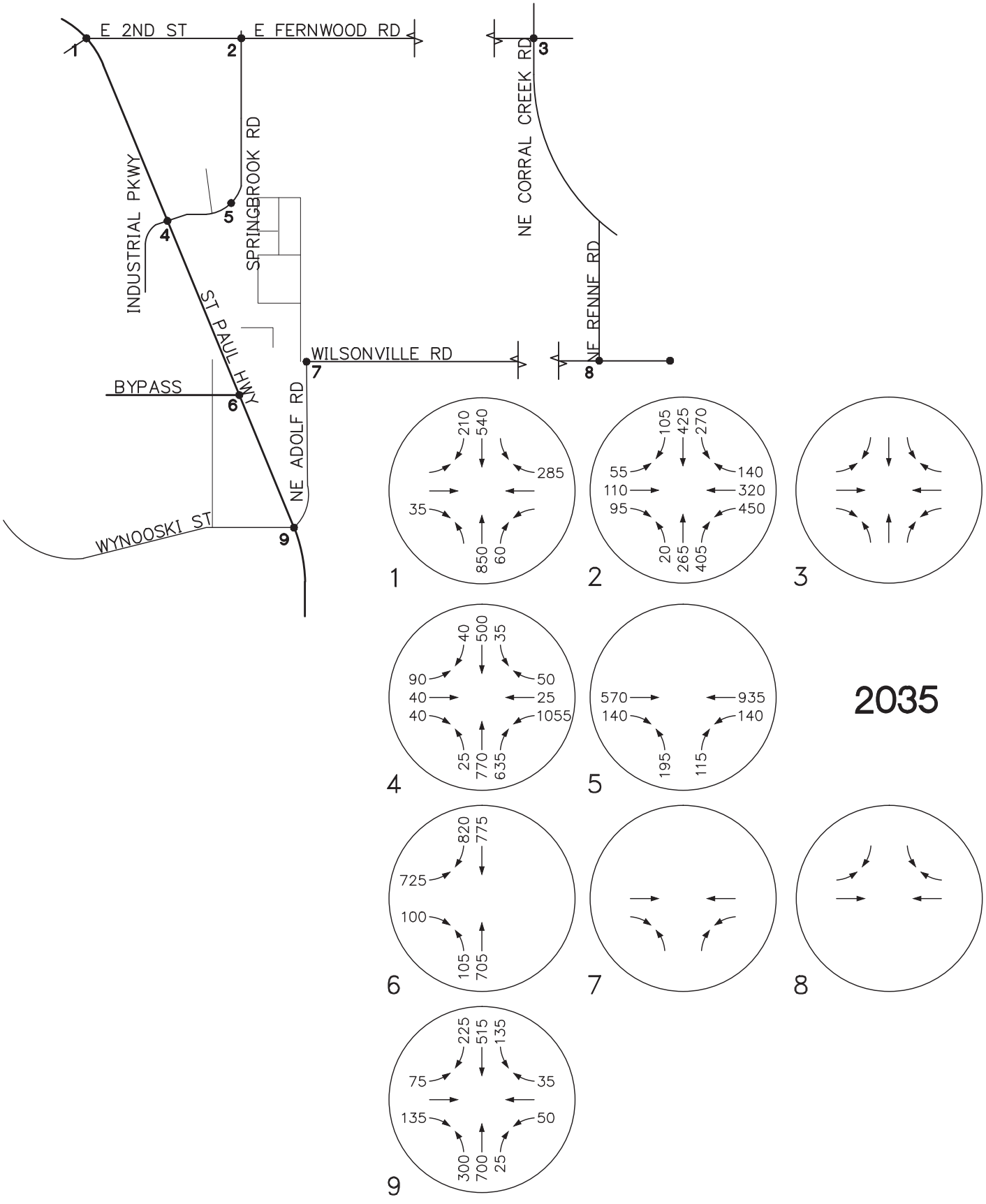
WYNOOSKI SIGNAL
PM PEAK HOUR
WILSONVILLE ROAD REVIEW
NEWBERG, OREGON

FIGURE
9A



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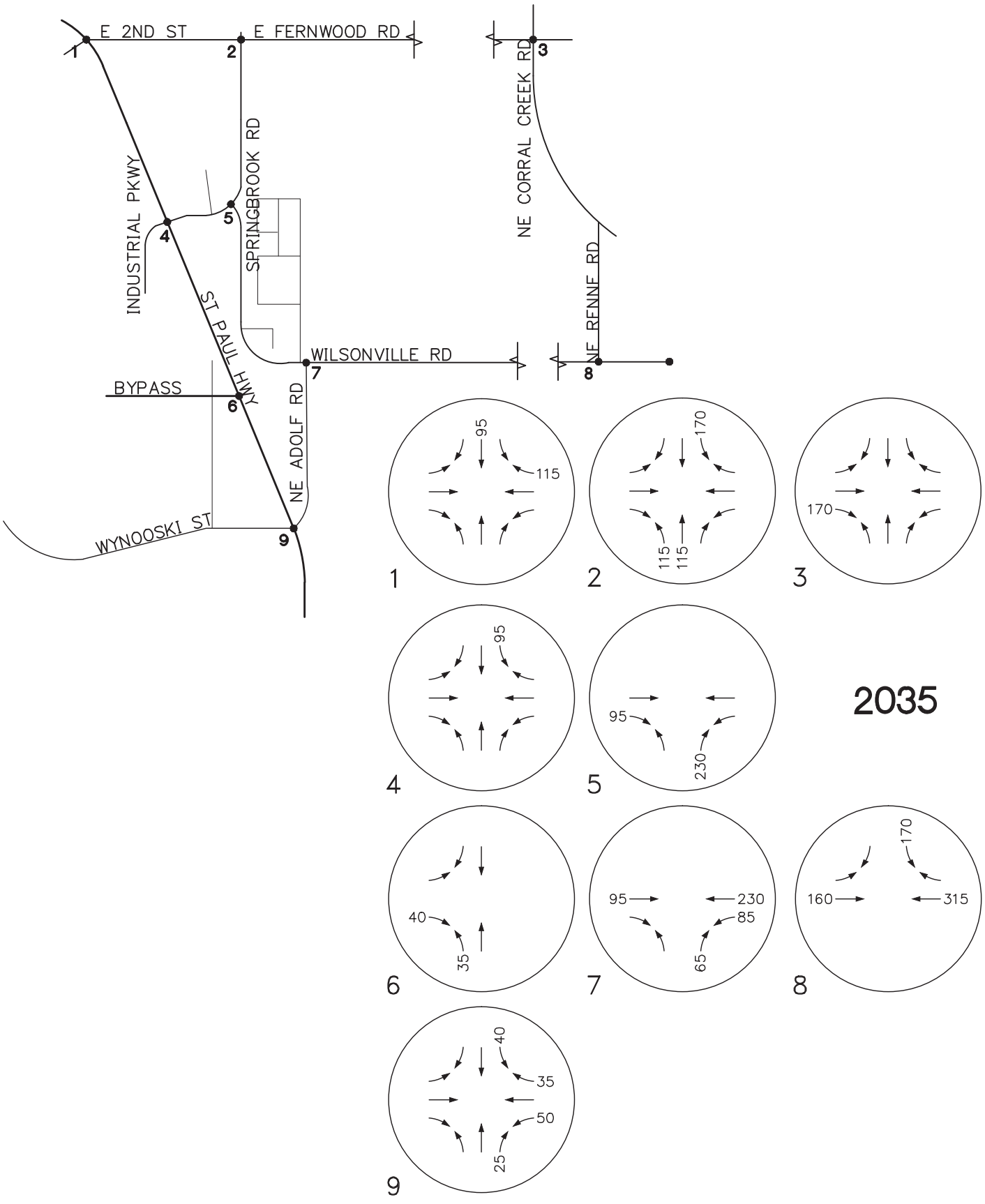
PM PEAK HOUR TOTAL
WILSONVILLE ROAD REVIEW
NEWBERG, OREGON

FIGURE 9B



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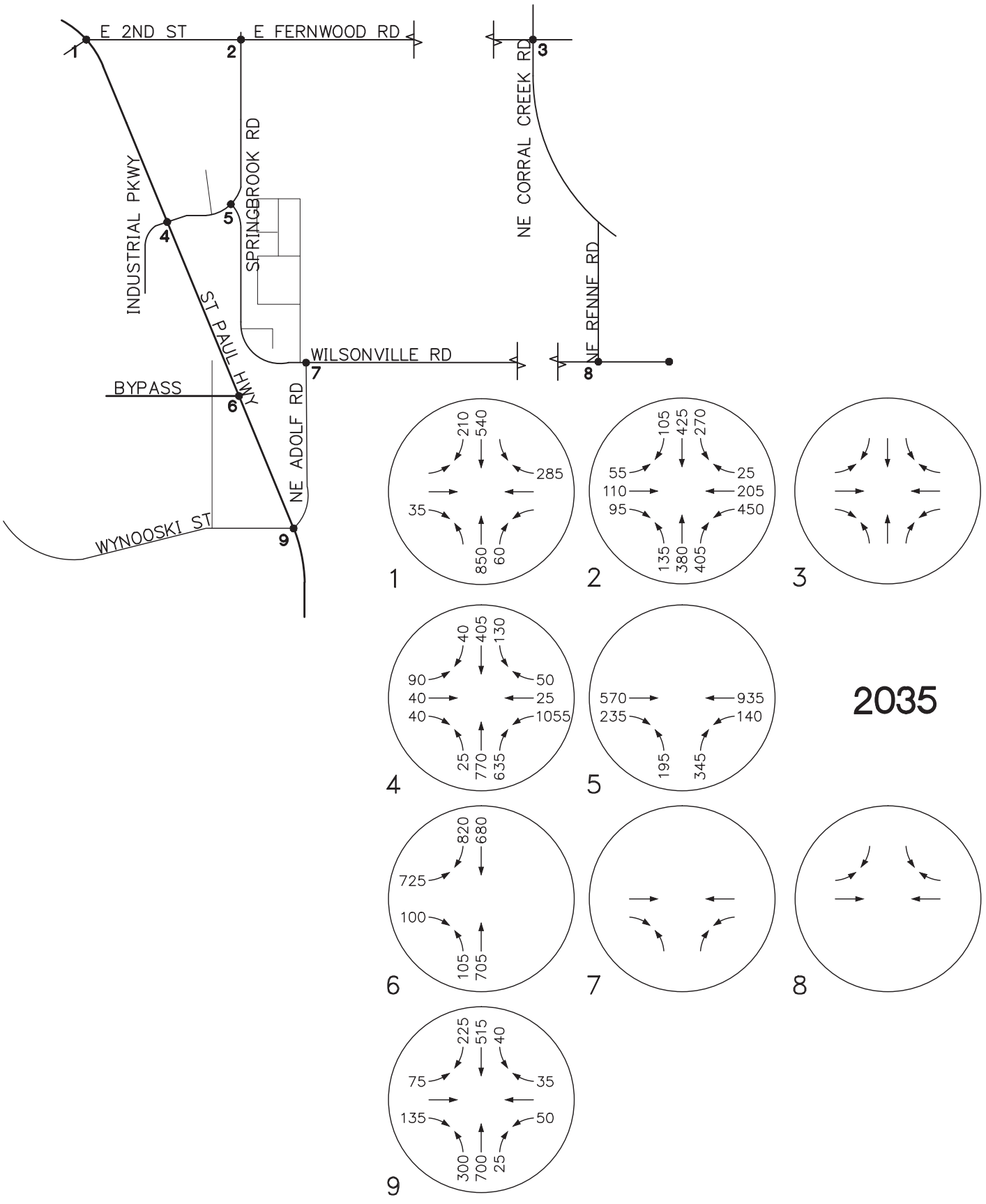
SPRINGBROOK + WYNOOSKI
PM PEAK HOUR

WILSONVILLE ROAD REVIEW
NEWBERG, OREGON

FIGURE 10A



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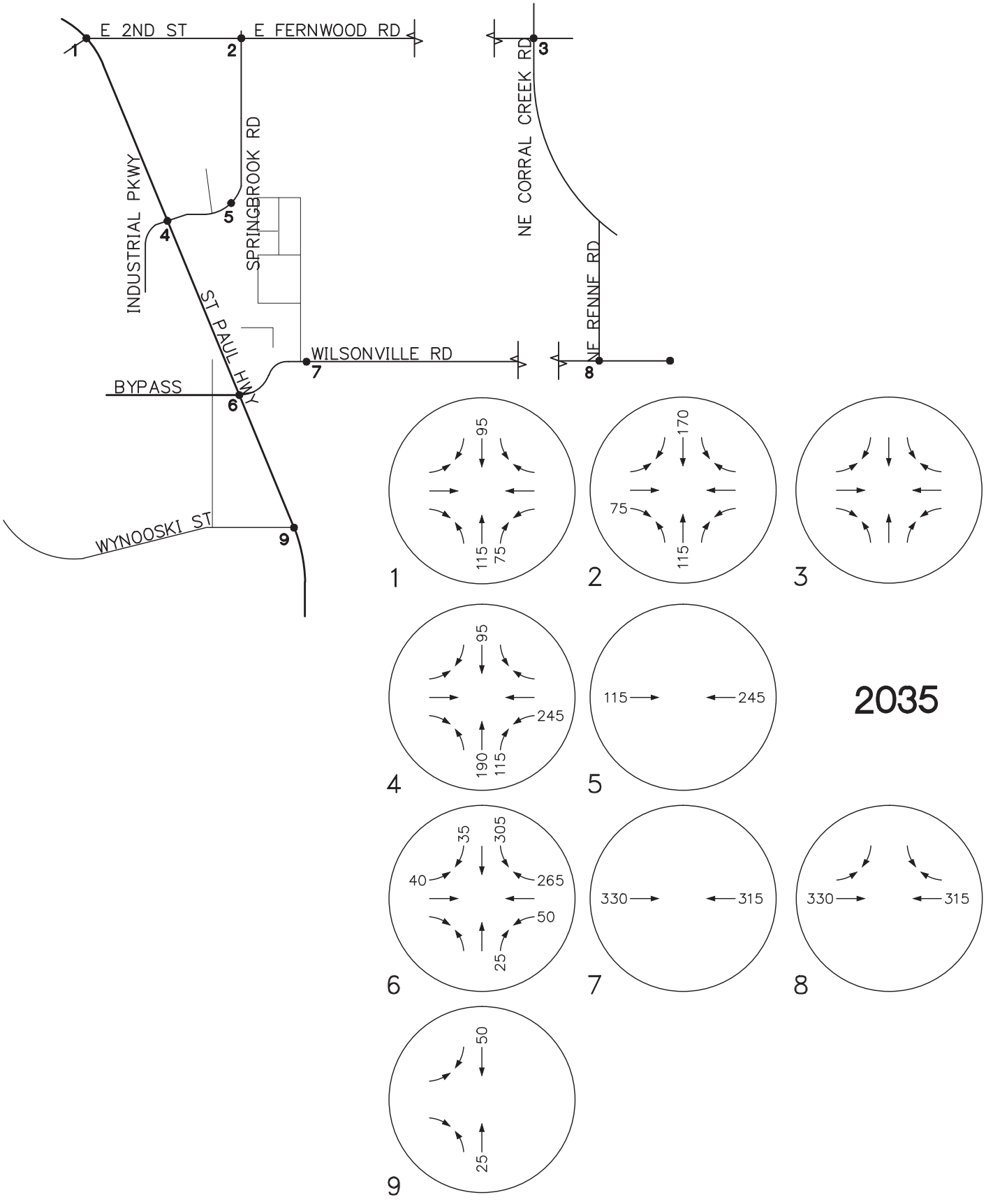
WILSONVILLE ROAD REVIEW
NEWBERG, OREGON

FIGURE 10B



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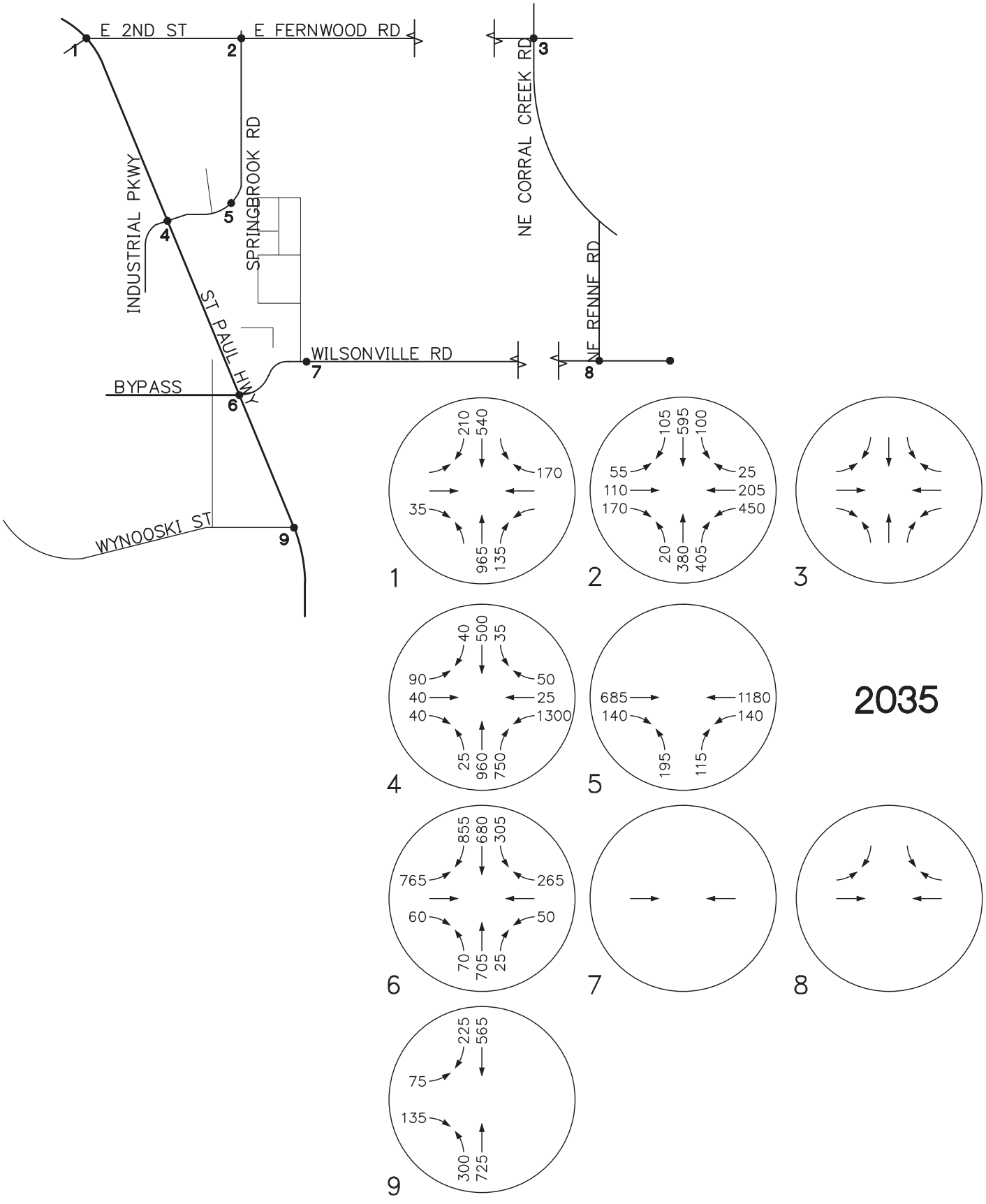
PM PEAK HOUR

WILSONVILLE ROAD REVIEW
NEWBERG, OREGON

FIGURE
11A



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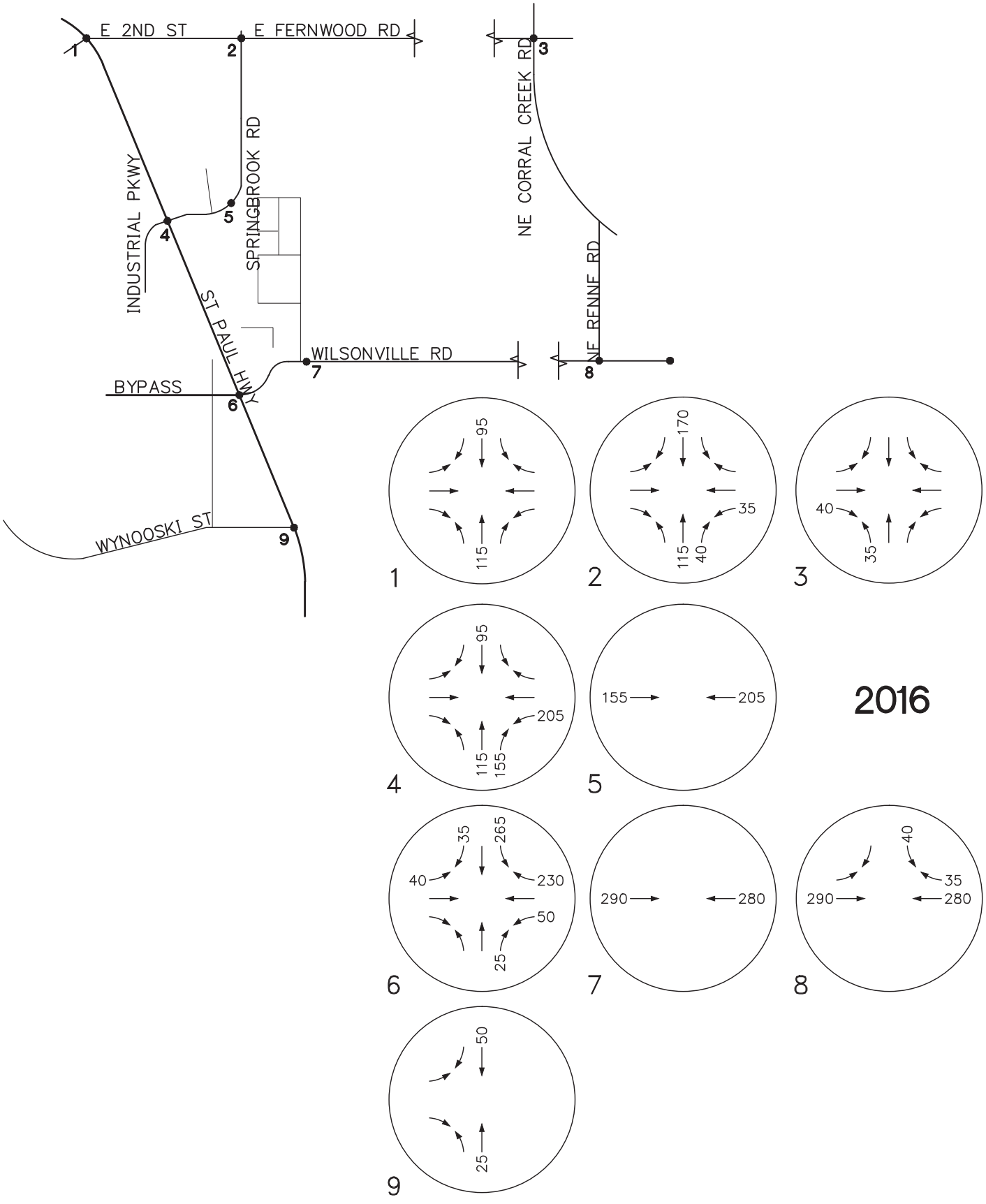
WILSONVILLE ROAD REVIEW
NEWBERG, OREGON

FIGURE 11B



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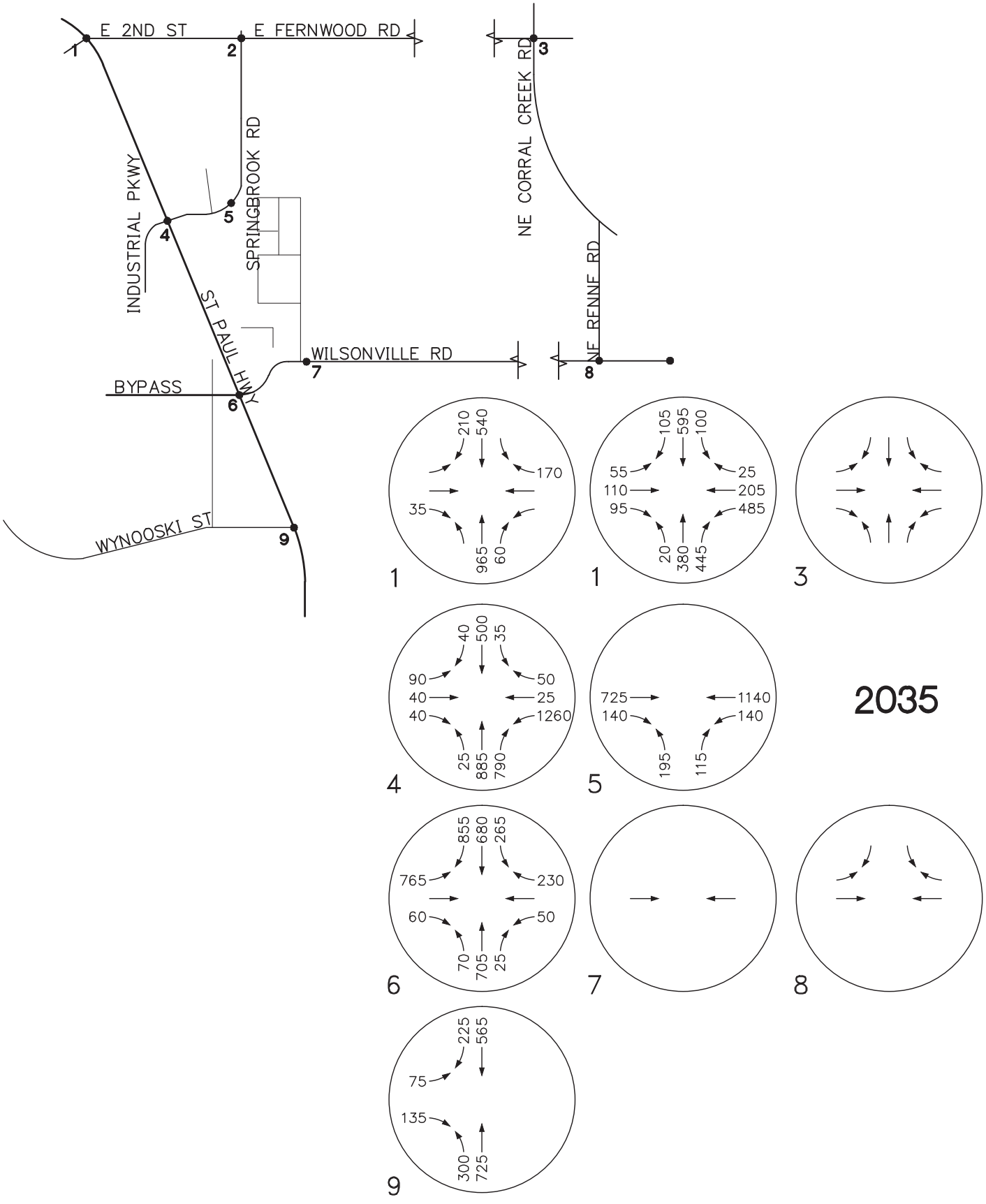
NO THROUGHS-FERNWOOD
PM PEAK HOUR

WILSONVILLE ROAD REVIEW
NEWBERG, OREGON

FIGURE
12A



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PM PEAK HOUR TOTAL

WILSONVILLE ROAD REVIEW
NEWBERG, OREGON

FIGURE
12B

HCM Unsignalized Intersection Capacity Analysis
1: St Paul Highway & E 2nd Street

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	0	0	20	0	0	105	0	740	10	0	850	45
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	22	0	0	117	0	822	11	0	944	50
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1914	1822	828	1819	1803	969	994			833		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1914	1822	828	1819	1803	969	994			833		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	94	100	100	62	100			100		
cM capacity (veh/h)	32	77	371	56	79	307	696			800		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	22	117	833	994
Volume Left	0	0	0	0
Volume Right	22	117	11	50
cSH	371	307	1700	1700
Volume to Capacity	0.06	0.38	0.49	0.58
Queue Length 95th (ft)	5	43	0	0
Control Delay (s)	15.3	23.7	0.0	0.0
Lane LOS	C	C		
Approach Delay (s)	15.3	23.7	0.0	0.0
Approach LOS	C	C		

Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	66.1%	ICU Level of Service	C	
Analysis Period (min)	15			

HCM Signalized Intersection Capacity Analysis
2: Springbrook Road & E 2nd Street/E Fernwood Road

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	85	55	160	65	20	20	425	130	45	570	50
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.99		1.00	0.96		1.00	0.99	
Flt Protected		0.99			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1627			1643		1630	1656		1630	1695	
Flt Permitted		0.85			0.60		0.26	1.00		0.29	1.00	
Satd. Flow (perm)		1410			1018		453	1656		497	1695	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	94	61	178	72	22	22	472	144	50	633	56
RTOR Reduction (vph)	0	13	0	0	3	0	0	8	0	0	2	0
Lane Group Flow (vph)	0	203	0	0	269	0	22	608	0	50	687	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		31.3			31.3		65.9	64.4		69.1	66.0	
Effective Green, g (s)		30.8			30.8		64.9	63.9		68.1	65.5	
Actuated g/C Ratio		0.28			0.28		0.59	0.58		0.61	0.59	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.5			2.5		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)		391			282		275	955		332	1002	
v/s Ratio Prot							0.00	0.37		c0.00	c0.41	
v/s Ratio Perm		0.14			c0.26		0.05			0.09		
v/c Ratio		0.52			0.95		0.08	0.64		0.15	0.69	
Uniform Delay, d1		33.8			39.3		11.9	15.7		10.7	15.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.9			41.0		0.1	3.2		0.2	3.8	
Delay (s)		34.6			80.3		12.0	18.9		10.9	19.4	
Level of Service		C			F		B	B		B	B	
Approach Delay (s)		34.6			80.3			18.7			18.8	
Approach LOS		C			F			B			B	

Intersection Summary			
HCM 2000 Control Delay	29.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	110.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
4: St Paul Highway & Industrial Parkway/Springbrook Road

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	30	25	815	10	40	10	805	520	20	715	25
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.4	4.4		4.4	4.4		4.4	4.4	4.4	4.4	4.4	
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.93		1.00	0.88		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1630	1598		3162	1510		1630	3260	1458	1630	3243	
Flt Permitted	0.72	1.00		0.95	1.00		0.17	1.00	1.00	0.14	1.00	
Satd. Flow (perm)	1237	1598		3162	1510		286	3260	1458	233	3243	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	33	28	906	11	44	11	894	578	22	794	28
RTOR Reduction (vph)	0	27	0	0	29	0	0	0	387	0	2	0
Lane Group Flow (vph)	56	34	0	906	26	0	11	894	191	22	820	0
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA	Prot	pm+pt	NA	
Protected Phases	3	8		7	4		1	6	6	5	2	
Permitted Phases	8						6			2		
Actuated Green, G (s)	25.6	6.8		53.2	41.2		41.6	40.0	40.0	46.4	42.4	
Effective Green, g (s)	24.8	6.4		52.8	40.8		40.8	39.6	39.6	45.6	42.0	
Actuated g/C Ratio	0.21	0.05		0.44	0.34		0.34	0.33	0.33	0.38	0.35	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	315	85		1391	513		110	1075	481	130	1135	
v/s Ratio Prot	0.03	c0.02		c0.29	0.02		0.00	c0.27	0.13	c0.01	0.25	
v/s Ratio Perm	0.01						0.03			0.06		
v/c Ratio	0.18	0.41		0.65	0.05		0.10	0.83	0.40	0.17	0.72	
Uniform Delay, d1	39.6	55.0		26.4	26.6		42.0	37.1	31.0	42.1	33.9	
Progression Factor	1.00	1.00		1.00	1.00		1.56	1.41	6.90	1.00	1.00	
Incremental Delay, d2	0.2	2.3		2.4	0.2		0.2	6.2	2.0	0.5	4.0	
Delay (s)	39.8	57.3		28.8	26.8		65.7	58.6	215.7	42.5	37.9	
Level of Service	D	E		C	C		E	E	F	D	D	
Approach Delay (s)		48.9			28.6			119.9			38.1	
Approach LOS		D			C			F			D	

Intersection Summary			
HCM 2000 Control Delay	71.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.6
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
6: St Paul Highway & Bypass/NE Wilsonville Road

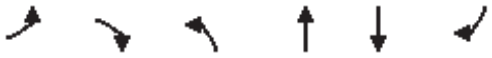
5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	545	25	60	40	25	165	50	640	15	130	530	650
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.89		1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3162	1534		1630	1716	1458	1630	3248		1630	1716	1458
Flt Permitted	0.95	1.00		0.65	1.00	1.00	0.27	1.00		0.30	1.00	1.00
Satd. Flow (perm)	3162	1534		1107	1716	1458	468	3248		510	1716	1458
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	606	28	67	44	28	183	56	711	17	144	589	722
RTOR Reduction (vph)	0	57	0	0	0	174	0	1	0	0	0	324
Lane Group Flow (vph)	606	38	0	44	28	9	56	727	0	144	589	398
Turn Type	Prot	NA		pm+pt	NA	Prot	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	3	8		7	4	4	1	6		5	2	
Permitted Phases				4			6			2		2
Actuated Green, G (s)	28.5	18.1		22.8	6.2	6.2	61.1	57.9		73.3	66.1	66.1
Effective Green, g (s)	28.5	18.1		22.8	6.2	6.2	61.1	57.9		73.3	66.1	66.1
Actuated g/C Ratio	0.24	0.15		0.19	0.05	0.05	0.51	0.48		0.61	0.55	0.55
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	750	231		282	88	75	269	1567		417	945	803
v/s Ratio Prot	c0.19	0.02		0.02	c0.02	0.01	0.01	0.22		c0.03	c0.34	
v/s Ratio Perm				0.01			0.10			0.18		0.27
v/c Ratio	0.81	0.16		0.16	0.32	0.13	0.21	0.46		0.35	0.62	0.50
Uniform Delay, d1	43.2	44.4		42.0	54.9	54.3	29.6	20.7		19.0	18.4	16.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.18	1.02	3.43
Incremental Delay, d2	6.2	0.2		0.2	1.5	0.6	0.3	1.0		1.7	2.3	1.6
Delay (s)	49.4	44.6		42.1	56.4	54.9	29.9	21.7		24.1	21.1	58.7
Level of Service	D	D		D	E	D	C	C		C	C	E
Approach Delay (s)		48.7			52.8			22.3			40.1	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	38.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
9: St Paul Highway & NE Wynooski Street

5/11/2015



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	65	70	125	640	485	145
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	72	78	139	711	539	161
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		10				
Median type				TWLTL	None	
Median storage veh)				2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1608	619	539			
vC1, stage 1 conf vol	619					
vC2, stage 2 conf vol	989					
vCu, unblocked vol	1608	619	539			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	74	84	87			
cM capacity (veh/h)	276	488	1029			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	150	139	711	700
Volume Left	72	139	0	0
Volume Right	78	0	0	161
cSH	573	1029	1700	1700
Volume to Capacity	0.26	0.13	0.42	0.41
Queue Length 95th (ft)	26	12	0	0
Control Delay (s)	18.0	9.0	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	18.0	1.5		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
10: Springbrook Road & Highway 99W

5/20/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	180	1165	115	430	1095	245	350	225	205	365	175	115
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1630	3260	1458	3162	3260	1458	3162	1716	1458	3162	1716	1458
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1630	3260	1458	3162	3260	1458	3162	1716	1458	3162	1716	1458
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	200	1294	128	478	1217	272	389	250	228	406	194	128
RTOR Reduction (vph)	0	0	59	0	0	71	0	0	56	0	0	58
Lane Group Flow (vph)	200	1294	69	478	1217	201	389	250	172	406	194	70
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4	5	1	6	7	5	2	3
Permitted Phases			8			4			6			2
Actuated Green, G (s)	16.2	48.9	64.6	19.0	51.7	67.8	15.7	20.0	39.0	16.1	20.4	36.6
Effective Green, g (s)	15.7	48.4	63.6	18.5	51.2	66.8	15.2	19.5	38.0	15.6	19.9	35.6
Actuated g/C Ratio	0.13	0.40	0.53	0.15	0.43	0.56	0.13	0.16	0.32	0.13	0.17	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	213	1314	772	487	1390	866	400	278	461	411	284	487
v/s Ratio Prot	0.12	c0.40	0.01	0.15	c0.37	0.03	0.12	c0.15	0.06	c0.13	0.11	0.02
v/s Ratio Perm			0.04			0.11			0.06			0.03
v/c Ratio	0.94	0.98	0.09	0.98	0.88	0.23	0.97	0.90	0.37	0.99	0.68	0.14
Uniform Delay, d1	51.7	35.4	13.9	50.6	31.5	13.5	52.2	49.3	31.8	52.1	47.1	31.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	44.2	21.1	0.0	35.8	6.4	0.1	37.6	33.3	0.4	40.8	12.6	0.1
Delay (s)	95.9	56.5	14.0	86.4	37.9	13.6	89.7	82.6	32.1	92.9	59.6	31.1
Level of Service	F	E	B	F	D	B	F	F	C	F	E	C
Approach Delay (s)		58.0			46.3			72.5			73.2	
Approach LOS		E			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	58.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	87.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
1: St Paul Highway & E 2nd Street

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	0	0	20	0	0	190	0	740	10	0	765	45
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	22	0	0	211	0	822	11	0	850	50
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1914	1728	828	1725	1708	875	900			833		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1914	1728	828	1725	1708	875	900			833		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	94	100	100	39	100			100		
cM capacity (veh/h)	20	88	371	66	91	349	755			800		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	22	211	833	900
Volume Left	0	0	0	0
Volume Right	22	211	11	50
cSH	371	349	1700	1700
Volume to Capacity	0.06	0.61	0.49	0.53
Queue Length 95th (ft)	5	94	0	0
Control Delay (s)	15.3	30.0	0.0	0.0
Lane LOS	C	D		
Approach Delay (s)	15.3	30.0	0.0	0.0
Approach LOS	C	D		

Intersection Summary				
Average Delay	3.4			
Intersection Capacity Utilization	66.9%	ICU Level of Service	C	
Analysis Period (min)	15			

HCM Signalized Intersection Capacity Analysis
2: Springbrook Road & E 2nd Street/E Fernwood Road

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	85	55	225	65	20	105	425	130	130	485	50
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.99		1.00	0.96		1.00	0.99	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1627			1641		1630	1656		1630	1691	
Flt Permitted		0.85			0.60		0.27	1.00		0.25	1.00	
Satd. Flow (perm)		1397			1022		460	1656		433	1691	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	94	61	250	72	22	117	472	144	144	539	56
RTOR Reduction (vph)	0	12	0	0	2	0	0	9	0	0	3	0
Lane Group Flow (vph)	0	204	0	0	342	0	117	607	0	144	592	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		41.2			41.2		66.0	62.0		66.0	62.0	
Effective Green, g (s)		40.7			40.7		65.0	61.5		65.0	61.5	
Actuated g/C Ratio		0.34			0.34		0.55	0.52		0.55	0.52	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.5			2.5		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)		476			348		285	854		271	872	
v/s Ratio Prot							0.01	c0.37		c0.02	0.35	
v/s Ratio Perm		0.15			c0.33		0.21			0.27		
v/c Ratio		0.43			0.98		0.41	0.71		0.53	0.68	
Uniform Delay, d1		30.3			38.9		18.3	22.0		21.9	21.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5			43.4		0.7	5.0		1.6	4.2	
Delay (s)		30.7			82.3		19.0	27.0		23.5	25.7	
Level of Service		C			F		B	C		C	C	
Approach Delay (s)		30.7			82.3			25.7			25.3	
Approach LOS		C			F			C			C	

Intersection Summary			
HCM 2000 Control Delay	35.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	119.2	Sum of lost time (s)	13.5
Intersection Capacity Utilization	86.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
4: St Paul Highway & Industrial Parkway/Springbrook Road

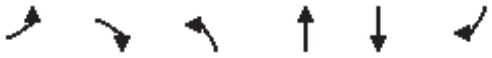
5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	30	25	795	10	40	10	720	480	65	670	25
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.4	4.4		4.4	4.4		4.4	4.4	4.4	4.4	4.4	
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.93		1.00	0.88		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1630	1598		3162	1510		1630	3260	1458	1630	3242	
Flt Permitted	0.72	1.00		0.95	1.00		0.20	1.00	1.00	0.19	1.00	
Satd. Flow (perm)	1237	1598		3162	1510		338	3260	1458	322	3242	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	33	28	883	11	44	11	800	533	72	744	28
RTOR Reduction (vph)	0	27	0	0	30	0	0	0	357	0	2	0
Lane Group Flow (vph)	56	34	0	883	25	0	11	800	176	72	770	0
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA	Prot	pm+pt	NA	
Protected Phases	3	8		7	4		1	6	6	5	2	
Permitted Phases	8						6			2		
Actuated Green, G (s)	25.6	6.8		51.6	39.6		41.6	40.0	40.0	49.6	44.0	
Effective Green, g (s)	24.8	6.4		51.2	39.2		40.8	39.6	39.6	48.8	43.6	
Actuated g/C Ratio	0.21	0.05		0.43	0.33		0.34	0.33	0.33	0.41	0.36	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	315	85		1349	493		127	1075	481	187	1177	
v/s Ratio Prot	0.03	c0.02		c0.28	0.02		0.00	c0.25	0.12	c0.02	0.24	
v/s Ratio Perm	0.01						0.03			0.14		
v/c Ratio	0.18	0.41		0.65	0.05		0.09	0.74	0.37	0.39	0.65	
Uniform Delay, d1	39.6	55.0		27.4	27.7		40.0	35.7	30.6	39.5	31.9	
Progression Factor	1.00	1.00		1.00	1.00		1.38	1.24	5.51	1.00	1.00	
Incremental Delay, d2	0.2	2.3		2.5	0.2		0.2	4.2	1.9	1.0	2.8	
Delay (s)	39.8	57.3		29.9	27.9		55.5	48.5	170.7	40.5	34.7	
Level of Service	D	E		C	C		E	D	F	D	C	
Approach Delay (s)		48.9			29.7			97.0			35.2	
Approach LOS		D			C			F			D	

Intersection Summary			
HCM 2000 Control Delay	59.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.6
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
6: St Paul Highway & Bypass

5/11/2015

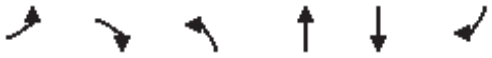


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	570	60	50	655	570	675
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.5	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3162	1458	1630	3260	1716	1458
Flt Permitted	0.95	1.00	0.32	1.00	1.00	1.00
Satd. Flow (perm)	3162	1458	557	3260	1716	1458
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	633	67	56	728	633	750
RTOR Reduction (vph)	0	52	0	0	0	267
Lane Group Flow (vph)	633	15	56	728	633	483
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	3		1	6	2	
Permitted Phases		3	6			2
Actuated Green, G (s)	27.5	27.5	84.5	84.5	77.3	77.3
Effective Green, g (s)	27.5	27.0	84.5	84.5	77.3	77.3
Actuated g/C Ratio	0.23	0.22	0.70	0.70	0.64	0.64
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	724	328	420	2295	1105	939
v/s Ratio Prot	c0.20		0.00	c0.22	c0.37	
v/s Ratio Perm		0.01	0.09			0.33
v/c Ratio	0.87	0.05	0.13	0.32	0.57	0.51
Uniform Delay, d1	44.6	36.4	13.5	6.8	12.0	11.4
Progression Factor	1.00	1.00	1.00	1.00	0.97	2.42
Incremental Delay, d2	11.3	0.0	0.1	0.4	1.7	1.6
Delay (s)	55.9	36.5	13.6	7.1	13.4	29.1
Level of Service	E	D	B	A	B	C
Approach Delay (s)	54.0			7.6	21.9	
Approach LOS	D			A	C	

Intersection Summary			
HCM 2000 Control Delay	25.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
9: St Paul Highway & NE Wynooski Street

5/11/2015



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	65	70	125	640	485	145
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	72	78	139	711	539	161
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		10				
Median type				TWLTL	None	
Median storage veh)				2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1608	619	539			
vC1, stage 1 conf vol	619					
vC2, stage 2 conf vol	989					
vCu, unblocked vol	1608	619	539			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	74	84	87			
cM capacity (veh/h)	276	488	1029			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	150	139	711	700
Volume Left	72	139	0	0
Volume Right	78	0	0	161
cSH	573	1029	1700	1700
Volume to Capacity	0.26	0.13	0.42	0.41
Queue Length 95th (ft)	26	12	0	0
Control Delay (s)	18.0	9.0	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	18.0	1.5		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
1: St Paul Highway & E 2nd Street

5/14/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	0	0	20	0	0	190	0	740	10	0	765	45
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	22	0	0	211	0	822	11	0	850	50
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1914	1728	828	1725	1708	875	900			833		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1914	1728	828	1725	1708	875	900			833		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	94	100	100	39	100			100		
cM capacity (veh/h)	20	88	371	66	91	349	755			800		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	22	211	833	900
Volume Left	0	0	0	0
Volume Right	22	211	11	50
cSH	371	349	1700	1700
Volume to Capacity	0.06	0.61	0.49	0.53
Queue Length 95th (ft)	5	94	0	0
Control Delay (s)	15.3	30.0	0.0	0.0
Lane LOS	C	D		
Approach Delay (s)	15.3	30.0	0.0	0.0
Approach LOS	C	D		

Intersection Summary				
Average Delay	3.4			
Intersection Capacity Utilization	66.9%	ICU Level of Service	C	
Analysis Period (min)	15			

HCM Signalized Intersection Capacity Analysis
2: Springbrook Road & E 2nd Street/E Fernwood Road

5/21/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	85	55	160	150	100	20	345	130	130	485	50
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.97		1.00	0.96		1.00	0.99	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1627			1628		1630	1645		1630	1691	
Flt Permitted		0.78			0.74		0.29	1.00		0.25	1.00	
Satd. Flow (perm)		1290			1235		491	1645		426	1691	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	94	61	178	167	111	22	383	144	144	539	56
RTOR Reduction (vph)	0	13	0	0	11	0	0	11	0	0	3	0
Lane Group Flow (vph)	0	203	0	0	445	0	22	516	0	144	592	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		42.6			42.6		52.5	51.0		62.3	56.8	
Effective Green, g (s)		42.1			42.1		51.5	50.5		61.8	56.3	
Actuated g/C Ratio		0.37			0.37		0.46	0.45		0.55	0.50	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.5			2.5		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)		481			460		234	735		305	843	
v/s Ratio Prot							0.00	0.31		c0.03	c0.35	
v/s Ratio Perm		0.16			c0.36		0.04			0.23		
v/c Ratio		0.42			0.97		0.09	0.70		0.47	0.70	
Uniform Delay, d1		26.3			34.7		18.3	25.1		16.3	21.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4			33.4		0.1	5.6		0.8	4.9	
Delay (s)		26.8			68.2		18.5	30.7		17.1	26.7	
Level of Service		C			E		B	C		B	C	
Approach Delay (s)		26.8			68.2			30.2			24.8	
Approach LOS		C			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	36.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	112.9	Sum of lost time (s)	13.5
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
4: St Paul Highway & Industrial Parkway/Springbrook Road

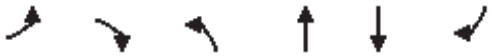
5/14/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	30	25	730	10	40	10	720	440	20	715	25
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.4	4.4		4.4	4.4		4.4	4.4	4.4	4.4	4.4	
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.93		1.00	0.88		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1630	1598		3162	1510		1630	3260	1458	1630	3243	
Flt Permitted	0.72	1.00		0.95	1.00		0.18	1.00	1.00	0.19	1.00	
Satd. Flow (perm)	1237	1598		3162	1510		310	3260	1458	333	3243	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	33	28	811	11	44	11	800	489	22	794	28
RTOR Reduction (vph)	0	27	0	0	30	0	0	0	319	0	2	0
Lane Group Flow (vph)	56	34	0	811	25	0	11	800	170	22	820	0
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA	Prot	pm+pt	NA	
Protected Phases	3	8		7	4		1	6	6	5	2	
Permitted Phases	8						6			2		
Actuated Green, G (s)	25.6	6.8		51.2	39.2		43.6	42.0	42.0	48.4	44.4	
Effective Green, g (s)	24.8	6.4		50.8	38.8		42.8	41.6	41.6	47.6	44.0	
Actuated g/C Ratio	0.21	0.05		0.42	0.32		0.36	0.35	0.35	0.40	0.37	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	315	85		1338	488		123	1130	505	171	1189	
v/s Ratio Prot	0.03	c0.02		c0.26	0.02		0.00	0.25	0.12	c0.00	c0.25	
v/s Ratio Perm	0.01						0.03			0.05		
v/c Ratio	0.18	0.41		0.61	0.05		0.09	0.71	0.34	0.13	0.69	
Uniform Delay, d1	39.6	55.0		26.8	27.9		39.8	33.9	29.0	36.6	32.2	
Progression Factor	1.00	1.00		1.00	1.00		1.24	1.14	4.04	1.00	1.00	
Incremental Delay, d2	0.2	2.3		2.0	0.2		0.2	3.3	1.6	0.2	3.3	
Delay (s)	39.8	57.3		28.9	28.1		49.6	41.8	118.6	36.8	35.5	
Level of Service	D	E		C	C		D	D	F	D	D	
Approach Delay (s)		48.9			28.8			70.8			35.5	
Approach LOS		D			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	48.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.6
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
6: St Paul Highway & Bypass

5/14/2015



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	545	85	75	640	575	650
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.97		1.00	0.95	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	0.96		0.95	1.00	1.00	1.00
Satd. Flow (prot)	3126		1630	3260	1716	1458
Flt Permitted	0.96		0.30	1.00	1.00	1.00
Satd. Flow (perm)	3126		516	3260	1716	1458
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	606	94	83	711	639	722
RTOR Reduction (vph)	11	0	0	0	0	285
Lane Group Flow (vph)	689	0	83	711	639	437
Turn Type	Prot		pm+pt	NA	NA	Perm
Protected Phases	3		1	6	2	
Permitted Phases			6			2
Actuated Green, G (s)	30.5		81.5	81.5	72.7	72.7
Effective Green, g (s)	30.5		81.5	81.5	72.7	72.7
Actuated g/C Ratio	0.25		0.68	0.68	0.61	0.61
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.5		2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	794		395	2214	1039	883
v/s Ratio Prot	c0.22		0.01	c0.22	c0.37	
v/s Ratio Perm			0.13			0.30
v/c Ratio	0.87		0.21	0.32	0.62	0.50
Uniform Delay, d1	42.8		17.2	7.9	14.9	13.3
Progression Factor	1.00		0.79	0.81	1.08	2.68
Incremental Delay, d2	9.8		0.2	0.3	2.1	1.6
Delay (s)	52.6		13.7	6.7	18.2	37.2
Level of Service	D		B	A	B	D
Approach Delay (s)	52.6			7.4	28.3	
Approach LOS	D			A	C	

Intersection Summary			
HCM 2000 Control Delay	28.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
9: St Paul Highway & NE Wynooski Street

5/14/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	0	70	40	0	25	125	625	15	70	445	145
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5		4.5	4.5		4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	0.96	
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630		1458	1630		1458	1630	1710		1630	1652	
Flt Permitted	0.95		1.00	0.95		1.00	0.34	1.00		0.33	1.00	
Satd. Flow (perm)	1630		1458	1630		1458	580	1710		563	1652	
Peak-hour factor, PHF	0.90	0.95	0.90	0.95	0.95	0.95	0.90	0.90	0.95	0.95	0.90	0.90
Adj. Flow (vph)	72	0	78	42	0	26	139	694	16	74	494	161
RTOR Reduction (vph)	0	0	73	0	0	26	0	1	0	0	6	0
Lane Group Flow (vph)	72	0	5	42	0	0	139	709	0	74	649	0
Turn Type	Prot		Perm	pm+pt		Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	3			7			1	6		5	2	
Permitted Phases			8	4		4	6			2		
Actuated Green, G (s)	8.6		7.8	5.6		2.4	94.7	88.5		91.3	86.8	
Effective Green, g (s)	8.1		7.3	4.6		1.9	93.7	88.0		90.3	86.3	
Actuated g/C Ratio	0.07		0.06	0.04		0.02	0.78	0.73		0.75	0.72	
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.5		2.5	2.5		2.5	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	110		88	62		23	502	1254		459	1188	
v/s Ratio Prot	c0.04			c0.02			c0.01	c0.41		0.01	0.39	
v/s Ratio Perm			0.00	0.01		0.00	0.20			0.12		
v/c Ratio	0.65		0.05	0.68		0.02	0.28	0.57		0.16	0.55	
Uniform Delay, d1	54.6		53.1	56.8		58.1	4.6	7.3		4.9	7.8	
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		0.83	0.55	
Incremental Delay, d2	11.8		0.2	23.4		0.2	0.2	1.9		0.1	1.4	
Delay (s)	66.4		53.3	80.2		58.4	4.8	9.1		4.1	5.7	
Level of Service	E		D	F		E	A	A		A	A	
Approach Delay (s)		59.6			71.8			8.4			5.5	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
1: St Paul Highway & E 2nd Street

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	0	0	20	0	0	190	0	740	10	0	765	45
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	22	0	0	211	0	822	11	0	850	50
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1914	1728	828	1725	1708	875	900			833		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1914	1728	828	1725	1708	875	900			833		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	94	100	100	39	100			100		
cM capacity (veh/h)	20	88	371	66	91	349	755			800		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	22	211	833	900
Volume Left	0	0	0	0
Volume Right	22	211	11	50
cSH	371	349	1700	1700
Volume to Capacity	0.06	0.61	0.49	0.53
Queue Length 95th (ft)	5	94	0	0
Control Delay (s)	15.3	30.0	0.0	0.0
Lane LOS	C	D		
Approach Delay (s)	15.3	30.0	0.0	0.0
Approach LOS	C	D		

Intersection Summary				
Average Delay	3.4			
Intersection Capacity Utilization	66.9%	ICU Level of Service	C	
Analysis Period (min)	15			

HCM Signalized Intersection Capacity Analysis
2: Springbrook Road & E 2nd Street/E Fernwood Road

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	85	55	160	65	20	105	425	130	130	485	50
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.99		1.00	0.96		1.00	0.99	
Flt Protected		0.99			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1627			1643		1630	1656		1630	1691	
Flt Permitted		0.85			0.60		0.30	1.00		0.29	1.00	
Satd. Flow (perm)		1410			1024		519	1656		494	1691	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	94	61	178	72	22	117	472	144	144	539	56
RTOR Reduction (vph)	0	13	0	0	3	0	0	8	0	0	3	0
Lane Group Flow (vph)	0	203	0	0	269	0	117	608	0	144	592	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		31.7			31.7		66.4	62.4		66.4	62.4	
Effective Green, g (s)		31.2			31.2		65.4	61.9		65.4	61.9	
Actuated g/C Ratio		0.28			0.28		0.59	0.56		0.59	0.56	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.5			2.5		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)		399			290		343	931		329	950	
v/s Ratio Prot							0.01	c0.37		c0.01	0.35	
v/s Ratio Perm		0.14			c0.26		0.19			0.25		
v/c Ratio		0.51			0.93		0.34	0.65		0.44	0.62	
Uniform Delay, d1		33.0			38.4		11.8	16.7		14.4	16.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.7			34.0		0.4	3.6		0.7	3.1	
Delay (s)		33.8			72.4		12.2	20.2		15.1	19.3	
Level of Service		C			E		B	C		B	B	
Approach Delay (s)		33.8			72.4			18.9			18.5	
Approach LOS		C			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	110.1	Sum of lost time (s)	13.5
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
4: St Paul Highway & Industrial Parkway/Springbrook Road

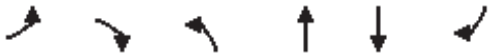
5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	30	25	730	10	40	10	720	440	65	670	25
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.4	4.4		4.4	4.4		4.4	4.4	4.4	4.4	4.4	
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.93		1.00	0.88		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1630	1598		3162	1510		1630	3260	1458	1630	3242	
Flt Permitted	0.72	1.00		0.95	1.00		0.20	1.00	1.00	0.19	1.00	
Satd. Flow (perm)	1237	1598		3162	1510		338	3260	1458	322	3242	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	33	28	811	11	44	11	800	489	72	744	28
RTOR Reduction (vph)	0	27	0	0	30	0	0	0	328	0	2	0
Lane Group Flow (vph)	56	34	0	811	25	0	11	800	161	72	770	0
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA	Prot	pm+pt	NA	
Protected Phases	3	8		7	4		1	6	6	5	2	
Permitted Phases	8						6			2		
Actuated Green, G (s)	25.6	6.8		51.6	39.6		41.6	40.0	40.0	49.6	44.0	
Effective Green, g (s)	24.8	6.4		51.2	39.2		40.8	39.6	39.6	48.8	43.6	
Actuated g/C Ratio	0.21	0.05		0.43	0.33		0.34	0.33	0.33	0.41	0.36	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	315	85		1349	493		127	1075	481	187	1177	
v/s Ratio Prot	0.03	c0.02		c0.26	0.02		0.00	c0.25	0.11	c0.02	0.24	
v/s Ratio Perm	0.01						0.03			0.14		
v/c Ratio	0.18	0.41		0.60	0.05		0.09	0.74	0.34	0.39	0.65	
Uniform Delay, d1	39.6	55.0		26.5	27.7		40.0	35.7	30.3	39.5	31.9	
Progression Factor	1.00	1.00		1.00	1.00		1.24	1.14	4.06	1.00	1.00	
Incremental Delay, d2	0.2	2.3		2.0	0.2		0.2	4.1	1.6	1.0	2.8	
Delay (s)	39.8	57.3		28.5	27.9		49.8	44.8	124.7	40.5	34.7	
Level of Service	D	E		C	C		D	D	F	D	C	
Approach Delay (s)		48.9			28.5			74.9			35.2	
Approach LOS		D			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	50.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.6
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
6: St Paul Highway & Bypass

5/11/2015



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	545	85	75	640	530	650
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.97		1.00	0.95	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	0.96		0.95	1.00	1.00	1.00
Satd. Flow (prot)	3126		1630	3260	1716	1458
Flt Permitted	0.96		0.34	1.00	1.00	1.00
Satd. Flow (perm)	3126		582	3260	1716	1458
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	606	94	83	711	589	722
RTOR Reduction (vph)	11	0	0	0	0	275
Lane Group Flow (vph)	689	0	83	711	589	447
Turn Type	Prot		pm+pt	NA	NA	Perm
Protected Phases	3		1	6	2	
Permitted Phases			6			2
Actuated Green, G (s)	30.5		81.5	81.5	74.3	74.3
Effective Green, g (s)	30.5		81.5	81.5	74.3	74.3
Actuated g/C Ratio	0.25		0.68	0.68	0.62	0.62
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.5		2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	794		423	2214	1062	902
v/s Ratio Prot	c0.22		0.01	c0.22	c0.34	
v/s Ratio Perm			0.13			0.31
v/c Ratio	0.87		0.20	0.32	0.55	0.50
Uniform Delay, d1	42.8		15.1	7.9	13.3	12.6
Progression Factor	1.00		0.82	0.82	1.04	2.56
Incremental Delay, d2	9.8		0.1	0.3	1.7	1.6
Delay (s)	52.6		12.5	6.8	15.5	33.7
Level of Service	D		B	A	B	C
Approach Delay (s)	52.6			7.4	25.5	
Approach LOS	D			A	C	

Intersection Summary			
HCM 2000 Control Delay	27.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
9: St Paul Highway & NE Wynooski Street

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	0	70	40	0	25	125	625	15	25	445	145
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5		4.5	4.5		4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	0.96	
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630		1458	1630		1458	1630	1710		1630	1652	
Flt Permitted	0.95		1.00	0.95		1.00	0.33	1.00		0.34	1.00	
Satd. Flow (perm)	1630		1458	1630		1458	570	1710		584	1652	
Peak-hour factor, PHF	0.90	0.95	0.90	0.95	0.95	0.95	0.90	0.90	0.95	0.95	0.90	0.90
Adj. Flow (vph)	72	0	78	42	0	26	139	694	16	26	494	161
RTOR Reduction (vph)	0	0	73	0	0	26	0	1	0	0	6	0
Lane Group Flow (vph)	72	0	5	42	0	0	139	709	0	26	649	0
Turn Type	Prot		Perm	pm+pt		Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	3			7			1	6		5	2	
Permitted Phases			8	4		4	6			2		
Actuated Green, G (s)	8.6		7.8	5.6		2.4	96.3	90.1		89.7	86.8	
Effective Green, g (s)	8.1		7.3	4.6		1.9	95.3	89.6		88.7	86.3	
Actuated g/C Ratio	0.07		0.06	0.04		0.02	0.79	0.75		0.74	0.72	
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.5		2.5	2.5		2.5	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	110		88	62		23	503	1276		452	1188	
v/s Ratio Prot	c0.04			c0.02			c0.01	c0.41		0.00	0.39	
v/s Ratio Perm			0.00	0.01		0.00	0.21			0.04		
v/c Ratio	0.65		0.05	0.68		0.02	0.28	0.56		0.06	0.55	
Uniform Delay, d1	54.6		53.1	56.8		58.1	4.5	6.6		4.8	7.8	
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		0.63	0.44	
Incremental Delay, d2	11.8		0.2	23.4		0.2	0.2	1.8		0.0	1.5	
Delay (s)	66.4		53.3	80.2		58.4	4.7	8.3		3.1	5.0	
Level of Service	E		D	F		E	A	A		A	A	
Approach Delay (s)		59.6			71.8			7.7			4.9	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
1: St Paul Highway & E 2nd Street

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	0	0	20	0	0	105	0	740	10	0	850	95
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	22	0	0	117	0	822	11	0	944	106
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1942	1878	828	1847	1831	997	1050			833		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1942	1878	828	1847	1831	997	1050			833		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	94	100	100	61	100			100		
cM capacity (veh/h)	30	71	371	54	76	296	663			800		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	22	117	833	1050
Volume Left	0	0	0	0
Volume Right	22	117	11	106
cSH	371	296	1700	1700
Volume to Capacity	0.06	0.39	0.49	0.62
Queue Length 95th (ft)	5	45	0	0
Control Delay (s)	15.3	24.8	0.0	0.0
Lane LOS	C	C		
Approach Delay (s)	15.3	24.8	0.0	0.0
Approach LOS	C	C		

Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	69.4%	ICU Level of Service	C	
Analysis Period (min)	15			

HCM Signalized Intersection Capacity Analysis
2: Springbrook Road & E 2nd Street/E Fernwood Road

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	85	105	160	65	20	20	425	130	45	570	50
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.99		1.00	0.96		1.00	0.99	
Flt Protected		0.99			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1598			1643		1630	1656		1630	1695	
Flt Permitted		0.88			0.54		0.25	1.00		0.28	1.00	
Satd. Flow (perm)		1421			923		428	1656		474	1695	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	94	117	178	72	22	22	472	144	50	633	56
RTOR Reduction (vph)	0	25	0	0	3	0	0	8	0	0	2	0
Lane Group Flow (vph)	0	247	0	0	269	0	22	608	0	50	687	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		33.9			33.9		64.0	62.5		67.2	64.1	
Effective Green, g (s)		33.4			33.4		63.0	62.0		66.2	63.6	
Actuated g/C Ratio		0.30			0.30		0.57	0.56		0.59	0.57	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.5			2.5		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)		425			276		252	920		308	966	
v/s Ratio Prot							0.00	0.37		c0.00	c0.41	
v/s Ratio Perm		0.17			c0.29		0.05			0.09		
v/c Ratio		0.58			0.98		0.09	0.66		0.16	0.71	
Uniform Delay, d1		33.1			38.6		13.3	17.4		12.0	17.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.7			47.0		0.1	3.7		0.2	4.4	
Delay (s)		34.8			85.6		13.4	21.1		12.2	21.7	
Level of Service		C			F		B	C		B	C	
Approach Delay (s)		34.8			85.6			20.8			21.1	
Approach LOS		C			F			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	111.5	Sum of lost time (s)	13.5
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
4: St Paul Highway & Industrial Parkway/Springbrook Road

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	30	25	865	10	40	10	855	520	20	715	25
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.4	4.4		4.4	4.4		4.4	4.4	4.4	4.4	4.4	
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.93		1.00	0.88		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1630	1598		3162	1510		1630	3260	1458	1630	3243	
Flt Permitted	0.72	1.00		0.95	1.00		0.17	1.00	1.00	0.11	1.00	
Satd. Flow (perm)	1237	1598		3162	1510		286	3260	1458	190	3243	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	33	28	961	11	44	11	950	578	22	794	28
RTOR Reduction (vph)	0	27	0	0	29	0	0	0	387	0	2	0
Lane Group Flow (vph)	56	34	0	961	26	0	11	950	191	22	820	0
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA	Prot	pm+pt	NA	
Protected Phases	3	8		7	4		1	6	6	5	2	
Permitted Phases	8						6			2		
Actuated Green, G (s)	25.6	6.8		53.2	41.2		41.6	40.0	40.0	46.4	42.4	
Effective Green, g (s)	24.8	6.4		52.8	40.8		40.8	39.6	39.6	45.6	42.0	
Actuated g/C Ratio	0.21	0.05		0.44	0.34		0.34	0.33	0.33	0.38	0.35	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	315	85		1391	513		110	1075	481	115	1135	
v/s Ratio Prot	0.03	c0.02		c0.30	0.02		0.00	c0.29	0.13	c0.01	0.25	
v/s Ratio Perm	0.01						0.03			0.07		
v/c Ratio	0.18	0.41		0.69	0.05		0.10	0.88	0.40	0.19	0.72	
Uniform Delay, d1	39.6	55.0		27.0	26.6		42.0	38.0	31.0	44.3	33.9	
Progression Factor	1.00	1.00		1.00	1.00		1.45	1.27	5.98	1.00	1.00	
Incremental Delay, d2	0.2	2.3		2.8	0.2		0.2	9.0	2.0	0.6	4.0	
Delay (s)	39.8	57.3		29.9	26.8		61.4	57.3	187.5	44.9	37.9	
Level of Service	D	E		C	C		E	E	F	D	D	
Approach Delay (s)		48.9			29.7			106.2			38.1	
Approach LOS		D			C			F			D	

Intersection Summary			
HCM 2000 Control Delay	65.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.6
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
6: St Paul Highway & Bypass/NE Wilsonville Road

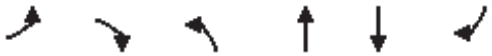
5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	570	0	60	40	0	190	50	640	15	155	530	675
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0		4.5	4.0		4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97		1.00	1.00		1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3162		1458	1630		1458	1630	3248		1630	1716	1458
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3162		1458	1630		1458	1630	3248		1630	1716	1458
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	633	0	67	44	0	211	56	711	17	172	589	750
RTOR Reduction (vph)	0	0	63	0	0	63	0	1	0	0	0	67
Lane Group Flow (vph)	633	0	4	44	0	148	56	727	0	172	589	683
Turn Type	Prot		Over	Prot		Over	Prot	NA		Prot	NA	pm+ov
Protected Phases	3		1	7		5	1	6		5	2	3
Permitted Phases												2
Actuated Green, G (s)	28.1		7.2	28.1		26.0	7.2	53.9		26.0	72.7	100.8
Effective Green, g (s)	28.1		6.7	28.1		26.0	7.2	53.9		26.0	72.7	100.8
Actuated g/C Ratio	0.23		0.06	0.23		0.22	0.06	0.45		0.22	0.61	0.84
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	2.5		2.5	2.5		2.5	2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	740		81	381		315	97	1458		353	1039	1273
v/s Ratio Prot	c0.20		0.00	0.03		0.10	0.03	0.22		c0.11	c0.34	0.13
v/s Ratio Perm												0.34
v/c Ratio	0.86		0.05	0.12		0.47	0.58	0.50		0.49	0.57	0.54
Uniform Delay, d1	44.0		53.6	36.2		41.0	54.9	23.5		41.2	14.2	2.8
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.03	1.06	3.13
Incremental Delay, d2	9.4		0.2	0.1		5.0	6.7	1.2		3.5	1.6	0.2
Delay (s)	53.4		53.8	36.3		46.0	61.6	24.7		45.8	16.7	9.0
Level of Service	D		D	D		D	E	C		D	B	A
Approach Delay (s)		53.5			44.3			27.3			16.2	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	29.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
9: St Paul Highway & NE Wynooski Street

5/11/2015



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	65	70	125	640	485	145
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	72	78	139	711	539	161
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		10				
Median type				TWLTL	None	
Median storage veh)				2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1608	619	539			
vC1, stage 1 conf vol	619					
vC2, stage 2 conf vol	989					
vCu, unblocked vol	1608	619	539			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	74	84	87			
cM capacity (veh/h)	276	488	1029			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	150	139	711	700
Volume Left	72	139	0	0
Volume Right	78	0	0	161
cSH	573	1029	1700	1700
Volume to Capacity	0.26	0.13	0.42	0.41
Queue Length 95th (ft)	26	12	0	0
Control Delay (s)	18.0	9.0	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	18.0	1.5		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
1: St Paul Highway & E 2nd Street

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	0	0	20	0	0	105	0	740	10	0	850	45
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	22	0	0	117	0	822	11	0	944	50
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1914	1822	828	1819	1803	969	994			833		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1914	1822	828	1819	1803	969	994			833		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	94	100	100	62	100			100		
cM capacity (veh/h)	32	77	371	56	79	307	696			800		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	22	117	833	994
Volume Left	0	0	0	0
Volume Right	22	117	11	50
cSH	371	307	1700	1700
Volume to Capacity	0.06	0.38	0.49	0.58
Queue Length 95th (ft)	5	43	0	0
Control Delay (s)	15.3	23.7	0.0	0.0
Lane LOS	C	C		
Approach Delay (s)	15.3	23.7	0.0	0.0
Approach LOS	C	C		

Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	66.1%	ICU Level of Service	C	
Analysis Period (min)	15			

HCM Signalized Intersection Capacity Analysis
2: Springbrook Road & E 2nd Street/E Fernwood Road

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	85	55	185	65	20	20	425	155	45	570	50
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.99		1.00	0.96		1.00	0.99	
Flt Protected		0.99			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1627			1642		1630	1647		1630	1695	
Flt Permitted		0.85			0.60		0.25	1.00		0.25	1.00	
Satd. Flow (perm)		1408			1021		424	1647		437	1695	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	94	61	206	72	22	22	472	172	50	633	56
RTOR Reduction (vph)	0	13	0	0	3	0	0	10	0	0	2	0
Lane Group Flow (vph)	0	203	0	0	297	0	22	634	0	50	687	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		34.5			34.5		63.9	62.4		67.1	64.0	
Effective Green, g (s)		34.0			34.0		62.9	61.9		66.1	63.5	
Actuated g/C Ratio		0.30			0.30		0.56	0.55		0.59	0.57	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.5			2.5		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)		427			309		248	910		285	961	
v/s Ratio Prot							0.00	0.39		c0.00	c0.41	
v/s Ratio Perm		0.14			c0.29		0.05			0.10		
v/c Ratio		0.47			0.96		0.09	0.70		0.18	0.71	
Uniform Delay, d1		31.7			38.4		13.6	18.2		12.7	17.7	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6			40.8		0.1	4.4		0.2	4.5	
Delay (s)		32.3			79.1		13.7	22.6		12.9	22.2	
Level of Service		C			E		B	C		B	C	
Approach Delay (s)		32.3			79.1			22.3			21.6	
Approach LOS		C			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	112.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
4: St Paul Highway & Industrial Parkway/Springbrook Road

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	30	25	840	10	40	10	805	545	20	715	25
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.4	4.4		4.4	4.4		4.4	4.4	4.4	4.4	4.4	
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.93		1.00	0.88		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1630	1598		3162	1510		1630	3260	1458	1630	3243	
Flt Permitted	0.72	1.00		0.95	1.00		0.16	1.00	1.00	0.13	1.00	
Satd. Flow (perm)	1237	1598		3162	1510		274	3260	1458	221	3243	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	33	28	933	11	44	11	894	606	22	794	28
RTOR Reduction (vph)	0	27	0	0	29	0	0	0	411	0	2	0
Lane Group Flow (vph)	56	34	0	933	26	0	11	894	195	22	820	0
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA	Prot	pm+pt	NA	
Protected Phases	3	8		7	4		1	6	6	5	2	
Permitted Phases	8						6			2		
Actuated Green, G (s)	25.6	6.8		54.2	42.2		40.6	39.0	39.0	45.4	41.4	
Effective Green, g (s)	24.8	6.4		53.8	41.8		39.8	38.6	38.6	44.6	41.0	
Actuated g/C Ratio	0.21	0.05		0.45	0.35		0.33	0.32	0.32	0.37	0.34	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	315	85		1417	525		104	1048	468	124	1108	
v/s Ratio Prot	0.03	c0.02		c0.30	0.02		0.00	c0.27	0.13	c0.01	0.25	
v/s Ratio Perm	0.01						0.03			0.06		
v/c Ratio	0.18	0.41		0.66	0.05		0.11	0.85	0.42	0.18	0.74	
Uniform Delay, d1	39.6	55.0		25.9	25.9		43.1	38.0	31.9	43.2	34.8	
Progression Factor	1.00	1.00		1.00	1.00		1.44	1.26	6.19	1.00	1.00	
Incremental Delay, d2	0.2	2.3		2.4	0.2		0.3	7.6	2.3	0.5	4.5	
Delay (s)	39.8	57.3		28.3	26.1		62.5	55.6	199.7	43.7	39.3	
Level of Service	D	E		C	C		E	E	F	D	D	
Approach Delay (s)		48.9			28.2			113.5			39.4	
Approach LOS		D			C			F			D	

Intersection Summary			
HCM 2000 Control Delay	68.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.6
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
6: St Paul Highway & Bypass/NE Wilsonville Road

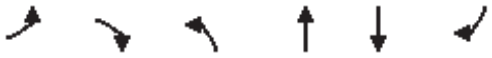
5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	570	0	60	40	0	165	50	640	15	130	530	675
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0		4.5	4.0		4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97		1.00	1.00		1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3162		1458	1630		1458	1630	3248		1630	1716	1458
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3162		1458	1630		1458	1630	3248		1630	1716	1458
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	633	0	67	44	0	183	56	711	17	144	589	750
RTOR Reduction (vph)	0	0	63	0	0	75	0	1	0	0	0	67
Lane Group Flow (vph)	633	0	4	44	0	108	56	727	0	144	589	683
Turn Type	Prot		Over	Prot		Over	Prot	NA		Prot	NA	pm+ov
Protected Phases	3		1	7		5	1	6		5	2	3
Permitted Phases												2
Actuated Green, G (s)	28.1		7.2	28.1		22.0	7.2	57.9		22.0	72.7	100.8
Effective Green, g (s)	28.1		6.7	28.1		22.0	7.2	57.9		22.0	72.7	100.8
Actuated g/C Ratio	0.23		0.06	0.23		0.18	0.06	0.48		0.18	0.61	0.84
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	2.5		2.5	2.5		2.5	2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	740		81	381		267	97	1567		298	1039	1273
v/s Ratio Prot	c0.20		0.00	0.03		0.07	0.03	0.22		c0.09	c0.34	0.13
v/s Ratio Perm												0.34
v/c Ratio	0.86		0.05	0.12		0.40	0.58	0.46		0.48	0.57	0.54
Uniform Delay, d1	44.0		53.6	36.2		43.2	54.9	20.7		43.9	14.2	2.8
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.05	1.10	3.39
Incremental Delay, d2	9.4		0.2	0.1		4.5	6.7	1.0		4.1	1.7	0.3
Delay (s)	53.4		53.8	36.3		47.7	61.6	21.7		50.1	17.4	9.7
Level of Service	D		D	D		D	E	C		D	B	A
Approach Delay (s)		53.5			45.5			24.5			16.7	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	28.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
9: St Paul Highway & NE Wynooski Street

5/11/2015



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	65	70	125	640	485	145
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	72	78	139	711	539	161
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		10				
Median type				TWLTL	None	
Median storage veh)				2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1608	619	539			
vC1, stage 1 conf vol	619					
vC2, stage 2 conf vol	989					
vCu, unblocked vol	1608	619	539			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	74	84	87			
cM capacity (veh/h)	276	488	1029			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	150	139	711	700
Volume Left	72	139	0	0
Volume Right	78	0	0	161
cSH	573	1029	1700	1700
Volume to Capacity	0.26	0.13	0.42	0.41
Queue Length 95th (ft)	26	12	0	0
Control Delay (s)	18.0	9.0	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	18.0	1.5		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
1: St Paul Highway & E 2nd Street

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	0	0	35	0	0	170	0	540	210	0	965	60
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	39	0	0	189	0	600	233	0	1072	67
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2011	1856	717	1861	1939	1106	1139			833		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2011	1856	717	1861	1939	1106	1139			833		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	91	100	100	26	100			100		
cM capacity (veh/h)	12	74	430	51	65	256	613			800		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	39	189	833	1139
Volume Left	0	0	0	0
Volume Right	39	189	233	67
cSH	430	256	1700	1700
Volume to Capacity	0.09	0.74	0.49	0.67
Queue Length 95th (ft)	7	130	0	0
Control Delay (s)	14.2	50.3	0.0	0.0
Lane LOS	B	F		
Approach Delay (s)	14.2	50.3	0.0	0.0
Approach LOS	B	F		

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	78.0%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
2: Springbrook Road & E 2nd Street/E Fernwood Road

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	110	95	450	205	25	20	380	405	100	595	105
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.99		1.00	0.92		1.00	0.98	
Flt Protected		0.99			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1614			1652		1630	1583		1630	1677	
Flt Permitted		0.81			0.60		0.08	1.00		0.08	1.00	
Satd. Flow (perm)		1322			1020		146	1583		141	1677	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	122	106	500	228	28	22	422	450	111	661	117
RTOR Reduction (vph)	0	17	0	0	1	0	0	32	0	0	5	0
Lane Group Flow (vph)	0	272	0	0	755	0	22	840	0	111	773	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		58.0			58.0		50.0	47.6		53.2	49.2	
Effective Green, g (s)		57.5			57.5		49.0	47.1		52.2	48.7	
Actuated g/C Ratio		0.47			0.47		0.40	0.39		0.43	0.40	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.5			2.5		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)		625			482		82	613		103	671	
v/s Ratio Prot							0.00	c0.53		c0.03	0.46	
v/s Ratio Perm		0.21			c0.74		0.10			0.43		
v/c Ratio		0.43			1.57		0.27	1.37		1.08	1.15	
Uniform Delay, d1		21.3			32.0		29.7	37.2		36.7	36.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4			264.8		1.3	177.0		111.2	84.6	
Delay (s)		21.6			296.8		31.0	214.2		147.9	121.0	
Level of Service		C			F		C	F		F	F	
Approach Delay (s)		21.6			296.8			209.7			124.4	
Approach LOS		C			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	187.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.46		
Actuated Cycle Length (s)	121.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	125.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
4: St Paul Highway & Industrial Parkway/Springbrook Road

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	40	40	1225	25	50	25	885	750	35	500	40
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.4	4.4		4.4	4.4		4.4	4.4	4.4	4.4	4.4	
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.93		1.00	0.90		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1630	1587		3162	1544		1630	3260	1458	1630	3224	
Flt Permitted	0.70	1.00		0.95	1.00		0.28	1.00	1.00	0.11	1.00	
Satd. Flow (perm)	1205	1587		3162	1544		486	3260	1458	184	3224	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	100	44	44	1361	28	56	28	983	833	39	556	44
RTOR Reduction (vph)	0	32	0	0	36	0	0	0	558	0	5	0
Lane Group Flow (vph)	100	56	0	1361	48	0	28	983	275	39	595	0
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA	Prot	pm+pt	NA	
Protected Phases	3	8		7	4		1	6	6	5	2	
Permitted Phases	8						6			2		
Actuated Green, G (s)	27.2	9.2		52.4	43.6		44.8	40.0	40.0	40.0	37.6	
Effective Green, g (s)	26.4	8.8		52.0	43.2		44.0	39.6	39.6	39.2	37.2	
Actuated g/C Ratio	0.22	0.07		0.43	0.36		0.37	0.33	0.33	0.33	0.31	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	327	116		1370	555		220	1075	481	84	999	
v/s Ratio Prot	0.04	c0.04		c0.43	0.03		c0.00	c0.30	0.19	c0.01	0.18	
v/s Ratio Perm	0.02						0.04			0.14		
v/c Ratio	0.31	0.48		0.99	0.09		0.13	0.91	0.57	0.46	0.60	
Uniform Delay, d1	39.8	53.4		33.8	25.4		34.5	38.6	33.2	52.1	35.0	
Progression Factor	1.00	1.00		1.00	1.00		1.41	1.31	6.52	1.00	1.00	
Incremental Delay, d2	0.4	2.3		22.8	0.3		0.1	9.0	3.0	2.9	2.6	
Delay (s)	40.2	55.7		56.6	25.7		48.8	59.4	219.4	55.0	37.7	
Level of Service	D	E		E	C		D	E	F	D	D	
Approach Delay (s)		47.4			54.8			131.5			38.7	
Approach LOS		D			D			F			D	

Intersection Summary			
HCM 2000 Control Delay	86.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.6
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
6: St Paul Highway & Bypass/NE Wilsonville Road

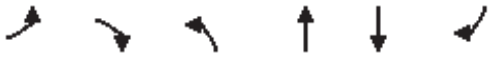
5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	725	40	60	50	35	230	70	705	25	265	680	820
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.91		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3162	1560		1630	1716	1458	1630	3243		1630	1716	1458
Flt Permitted	0.95	1.00		0.53	1.00	1.00	0.10	1.00		0.18	1.00	1.00
Satd. Flow (perm)	3162	1560		903	1716	1458	172	3243		312	1716	1458
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	806	44	67	56	39	256	78	783	28	294	756	911
RTOR Reduction (vph)	0	58	0	0	0	228	0	2	0	0	0	379
Lane Group Flow (vph)	806	53	0	56	39	28	78	809	0	294	756	532
Turn Type	Prot	NA		pm+pt	NA	Prot	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	3	8		7	4	4	1	6		5	2	
Permitted Phases				4			6			2		2
Actuated Green, G (s)	37.2	16.8		35.6	7.6	7.6	44.0	40.0		63.2	55.2	55.2
Effective Green, g (s)	37.2	16.8		35.6	7.6	7.6	44.0	40.0		63.2	55.2	55.2
Actuated g/C Ratio	0.31	0.14		0.30	0.06	0.06	0.37	0.33		0.53	0.46	0.46
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	980	218		437	108	92	111	1081		375	789	670
v/s Ratio Prot	c0.25	0.03		0.03	c0.02	0.02	0.02	0.25		c0.13	c0.44	
v/s Ratio Perm				0.01			0.23			0.29		0.36
v/c Ratio	0.82	0.24		0.13	0.36	0.31	0.70	0.75		0.78	0.96	0.79
Uniform Delay, d1	38.3	46.0		33.0	53.9	53.7	54.3	35.5		35.4	31.3	27.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.75	0.75	1.35
Incremental Delay, d2	5.5	0.4		0.1	1.5	1.4	17.0	4.8		8.1	14.8	5.0
Delay (s)	43.9	46.4		33.1	55.4	55.1	71.3	40.3		34.5	38.3	42.2
Level of Service	D	D		C	E	E	E	D		C	D	D
Approach Delay (s)		44.2			51.6			43.0			39.6	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	42.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
9: St Paul Highway & NE Wynooski Street

5/21/2015



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	75	135	300	725	565	225
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	83	150	333	806	628	250
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		10				
Median type				TWLTL	None	
Median storage veh)				2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2225	753	628			
vC1, stage 1 conf vol	753					
vC2, stage 2 conf vol	1472					
vCu, unblocked vol	2225	753	628			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	35	63	65			
cM capacity (veh/h)	129	410	954			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	233	333	806	878
Volume Left	83	333	0	0
Volume Right	150	0	0	250
cSH	361	954	1700	1700
Volume to Capacity	0.65	0.35	0.47	0.52
Queue Length 95th (ft)	108	39	0	0
Control Delay (s)	38.4	10.8	0.0	0.0
Lane LOS	E	B		
Approach Delay (s)	38.4	3.2		0.0
Approach LOS	E			

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
10: Springbrook Road & Highway 99W

5/21/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	210	1570	265	575	1525	175	475	365	75	485	335	105
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1630	3260	1458	3162	3260	1458	3162	1716	1458	3162	1716	1458
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1630	3260	1458	3162	3260	1458	3162	1716	1458	3162	1716	1458
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	233	1744	294	639	1694	194	528	406	83	539	372	117
RTOR Reduction (vph)	0	0	33	0	0	33	0	0	53	0	0	57
Lane Group Flow (vph)	233	1744	262	639	1694	161	528	406	30	539	372	60
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4	5	1	6	7	5	2	3
Permitted Phases			8			4			6			2
Actuated Green, G (s)	12.0	47.0	61.0	17.0	52.0	66.0	14.0	26.0	43.0	14.0	26.0	38.0
Effective Green, g (s)	11.5	46.5	60.0	16.5	51.5	65.0	13.5	25.5	42.0	13.5	25.5	37.0
Actuated g/C Ratio	0.10	0.39	0.50	0.14	0.43	0.54	0.11	0.21	0.35	0.11	0.21	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	156	1263	729	434	1399	844	355	364	510	355	364	504
v/s Ratio Prot	0.14	c0.54	0.04	c0.20	0.52	0.02	0.17	c0.24	0.01	c0.17	0.22	0.01
v/s Ratio Perm			0.14			0.09			0.01			0.03
v/c Ratio	1.49	1.38	0.36	1.47	1.21	0.19	1.49	1.12	0.06	1.52	1.02	0.12
Uniform Delay, d1	54.2	36.8	18.3	51.8	34.2	14.1	53.2	47.2	25.9	53.2	47.2	29.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	252.8	176.4	0.2	224.8	101.8	0.1	233.8	82.1	0.0	247.3	52.9	0.1
Delay (s)	307.0	213.1	18.5	276.5	136.0	14.1	287.1	129.4	25.9	300.5	100.1	29.9
Level of Service	F	F	B	F	F	B	F	F	C	F	F	C
Approach Delay (s)		197.6			162.2			202.8			197.2	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	185.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.35		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	115.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
1: St Paul Highway & E 2nd Street

5/21/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	0	0	35	0	0	285	0	540	210	0	850	60
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	39	0	0	317	0	600	233	0	944	67
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2011	1728	717	1733	1811	978	1011			833		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2011	1728	717	1733	1811	978	1011			833		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	91	100	100	0	100			100		
cM capacity (veh/h)	0	88	430	63	79	304	686			800		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	39	317	833	1011
Volume Left	0	0	0	0
Volume Right	39	317	233	67
cSH	430	304	1700	1700
Volume to Capacity	0.09	1.04	0.49	0.59
Queue Length 95th (ft)	7	293	0	0
Control Delay (s)	14.2	101.3	0.0	0.0
Lane LOS	B	F		
Approach Delay (s)	14.2	101.3	0.0	0.0
Approach LOS	B	F		

Intersection Summary				
Average Delay	14.8			
Intersection Capacity Utilization	79.2%	ICU Level of Service	D	
Analysis Period (min)	15			

HCM Signalized Intersection Capacity Analysis
2: Springbrook Road & E 2nd Street/E Fernwood Road

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	110	95	535	205	25	135	380	405	270	425	105
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			1.00		1.00	0.92		1.00	0.97	
Flt Protected		0.99			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1614			1650		1630	1583		1630	1665	
Flt Permitted		0.81			0.59		0.10	1.00		0.09	1.00	
Satd. Flow (perm)		1316			1003		174	1583		161	1665	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	122	106	594	228	28	150	422	450	300	472	117
RTOR Reduction (vph)	0	17	0	0	1	0	0	32	0	0	8	0
Lane Group Flow (vph)	0	272	0	0	849	0	150	840	0	300	581	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		58.0			58.0		48.0	41.0		52.0	43.0	
Effective Green, g (s)		57.5			57.5		47.0	40.5		51.0	42.5	
Actuated g/C Ratio		0.48			0.48		0.39	0.34		0.42	0.35	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.5			2.5		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)		630			480		147	534		172	589	
v/s Ratio Prot							0.06	0.53		c0.12	0.35	
v/s Ratio Perm		0.21			c0.85		0.34			c0.61		
v/c Ratio		0.43			1.77		1.02	1.57		1.74	0.99	
Uniform Delay, d1		20.5			31.2		31.9	39.8		30.7	38.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3			354.3		79.7	267.0		357.8	34.0	
Delay (s)		20.9			385.6		111.6	306.7		388.6	72.5	
Level of Service		C			F		F	F		F	E	
Approach Delay (s)		20.9			385.6			278.1			179.1	
Approach LOS		C			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	254.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	141.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
4: St Paul Highway & Industrial Parkway/Springbrook Road

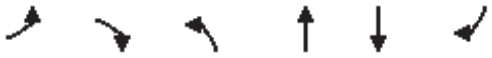
5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	40	40	1140	25	50	25	770	700	130	405	40
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.4	4.4		4.4	4.4		4.4	4.4	4.4	4.4	4.4	
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.93		1.00	0.90		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1630	1587		3162	1544		1630	3260	1458	1630	3216	
Flt Permitted	0.70	1.00		0.95	1.00		0.32	1.00	1.00	0.12	1.00	
Satd. Flow (perm)	1205	1587		3162	1544		551	3260	1458	199	3216	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	100	44	44	1267	28	56	28	856	778	144	450	44
RTOR Reduction (vph)	0	32	0	0	35	0	0	0	573	0	6	0
Lane Group Flow (vph)	100	56	0	1267	49	0	28	856	205	144	488	0
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA	Prot	pm+pt	NA	
Protected Phases	3	8		7	4		1	6	6	5	2	
Permitted Phases	8						6			2		
Actuated Green, G (s)	27.2	9.2		55.2	46.4		36.8	32.0	32.0	42.4	34.8	
Effective Green, g (s)	26.4	8.8		54.8	46.0		36.0	31.6	31.6	41.6	34.4	
Actuated g/C Ratio	0.22	0.07		0.46	0.38		0.30	0.26	0.26	0.35	0.29	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	327	116		1443	591		204	858	383	154	921	
v/s Ratio Prot	0.04	c0.04		c0.40	0.03		0.01	c0.26	0.14	c0.06	0.15	
v/s Ratio Perm	0.02						0.04			0.27		
v/c Ratio	0.31	0.48		0.88	0.08		0.14	1.00	0.53	0.94	0.53	
Uniform Delay, d1	39.8	53.4		29.6	23.6		38.2	44.2	37.9	50.4	36.0	
Progression Factor	1.00	1.00		1.00	1.00		1.18	1.08	5.40	1.00	1.00	
Incremental Delay, d2	0.4	2.3		7.9	0.3		0.2	26.2	4.0	53.1	2.2	
Delay (s)	40.2	55.7		37.4	23.9		45.4	73.9	208.5	103.5	38.2	
Level of Service	D	E		D	C		D	E	F	F	D	
Approach Delay (s)		47.4			36.6			136.4			52.9	
Approach LOS		D			D			F			D	

Intersection Summary			
HCM 2000 Control Delay	83.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.6
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
6: St Paul Highway & Bypass

5/11/2015

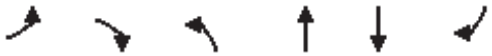


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	765	60	70	730	730	855
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.5	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3162	1458	1630	3260	1716	1458
Flt Permitted	0.95	1.00	0.18	1.00	1.00	1.00
Satd. Flow (perm)	3162	1458	315	3260	1716	1458
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	850	67	78	811	811	950
RTOR Reduction (vph)	0	48	0	0	0	367
Lane Group Flow (vph)	850	19	78	811	811	583
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	3		1	6	2	
Permitted Phases		3	6			2
Actuated Green, G (s)	34.2	34.2	77.8	77.8	70.6	70.6
Effective Green, g (s)	34.2	33.7	77.8	77.8	70.6	70.6
Actuated g/C Ratio	0.29	0.28	0.65	0.65	0.59	0.59
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	901	409	239	2113	1009	857
v/s Ratio Prot	c0.27		0.01	c0.25	c0.47	
v/s Ratio Perm		0.01	0.20			0.40
v/c Ratio	0.94	0.05	0.33	0.38	0.80	0.68
Uniform Delay, d1	42.0	31.4	29.5	9.9	19.3	16.9
Progression Factor	1.00	1.00	1.00	1.00	0.53	2.90
Incremental Delay, d2	17.7	0.0	0.6	0.5	4.4	2.8
Delay (s)	59.7	31.5	30.1	10.4	14.6	52.0
Level of Service	E	C	C	B	B	D
Approach Delay (s)	57.6			12.1	34.8	
Approach LOS	E			B	C	

Intersection Summary			
HCM 2000 Control Delay	35.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
9: St Paul Highway & NE Wynooski Street

5/11/2015



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	75	135	300	725	565	225
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	83	150	333	806	628	250
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		10				
Median type				TWLTL	None	
Median storage veh)				2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2225	753	628			
vC1, stage 1 conf vol	753					
vC2, stage 2 conf vol	1472					
vCu, unblocked vol	2225	753	628			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	35	63	65			
cM capacity (veh/h)	129	410	954			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	233	333	806	878
Volume Left	83	333	0	0
Volume Right	150	0	0	250
cSH	361	954	1700	1700
Volume to Capacity	0.65	0.35	0.47	0.52
Queue Length 95th (ft)	108	39	0	0
Control Delay (s)	38.4	10.8	0.0	0.0
Lane LOS	E	B		
Approach Delay (s)	38.4	3.2		0.0
Approach LOS	E			

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
1: St Paul Highway & E 2nd Street

5/14/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	0	0	35	0	0	285	0	540	210	0	850	60
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	39	0	0	317	0	600	233	0	944	67
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2011	1728	717	1733	1811	978	1011			833		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2011	1728	717	1733	1811	978	1011			833		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	91	100	100	0	100			100		
cM capacity (veh/h)	0	88	430	63	79	304	686			800		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	39	317	833	1011
Volume Left	0	0	0	0
Volume Right	39	317	233	67
cSH	430	304	1700	1700
Volume to Capacity	0.09	1.04	0.49	0.59
Queue Length 95th (ft)	7	293	0	0
Control Delay (s)	14.2	101.3	0.0	0.0
Lane LOS	B	F		
Approach Delay (s)	14.2	101.3	0.0	0.0
Approach LOS	B	F		

Intersection Summary				
Average Delay	14.8			
Intersection Capacity Utilization	79.2%	ICU Level of Service	D	
Analysis Period (min)	15			

HCM Signalized Intersection Capacity Analysis
2: Springbrook Road & E 2nd Street/E Fernwood Road

5/21/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	110	95	450	320	140	20	265	405	270	425	105
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.98		1.00	0.91		1.00	0.97	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1614			1639		1630	1560		1630	1665	
Flt Permitted		0.76			0.67		0.14	1.00		0.09	1.00	
Satd. Flow (perm)		1235			1129		235	1560		161	1665	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	122	106	500	356	156	22	294	450	300	472	117
RTOR Reduction (vph)	0	18	0	0	5	0	0	45	0	0	7	0
Lane Group Flow (vph)	0	271	0	0	1007	0	22	699	0	300	582	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		62.0			62.0		41.0	38.6		51.6	45.2	
Effective Green, g (s)		61.5			61.5		40.0	38.1		51.1	44.7	
Actuated g/C Ratio		0.51			0.51		0.33	0.31		0.42	0.37	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.5			2.5		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)		624			570		99	488		170	612	
v/s Ratio Prot							0.00	0.45		c0.12	0.35	
v/s Ratio Perm		0.22			c0.89		0.07			c0.62		
v/c Ratio		0.43			1.77		0.22	1.43		1.76	0.95	
Uniform Delay, d1		19.0			30.0		30.7	41.8		31.1	37.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4			351.8		0.8	205.8		367.0	26.1	
Delay (s)		19.4			381.8		31.5	247.6		398.1	63.5	
Level of Service		B			F		C	F		F	E	
Approach Delay (s)		19.4			381.8			241.4			176.4	
Approach LOS		B			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	248.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.81		
Actuated Cycle Length (s)	121.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	143.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
4: St Paul Highway & Industrial Parkway/Springbrook Road

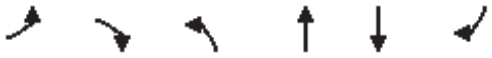
5/14/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	40	40	1055	25	50	25	770	635	35	500	40
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.4	4.4		4.4	4.4		4.4	4.4	4.4	4.4	4.4	
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.93		1.00	0.90		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1630	1587		3162	1544		1630	3260	1458	1630	3224	
Flt Permitted	0.70	1.00		0.95	1.00		0.24	1.00	1.00	0.13	1.00	
Satd. Flow (perm)	1205	1587		3162	1544		415	3260	1458	220	3224	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	100	44	44	1172	28	56	28	856	706	39	556	44
RTOR Reduction (vph)	0	32	0	0	33	0	0	0	508	0	4	0
Lane Group Flow (vph)	100	56	0	1172	51	0	28	856	198	39	596	0
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA	Prot	pm+pt	NA	
Protected Phases	3	8		7	4		1	6	6	5	2	
Permitted Phases	8						6			2		
Actuated Green, G (s)	27.2	9.2		58.4	49.6		38.8	34.0	34.0	34.0	31.6	
Effective Green, g (s)	26.4	8.8		58.0	49.2		38.0	33.6	33.6	33.2	31.2	
Actuated g/C Ratio	0.22	0.07		0.48	0.41		0.32	0.28	0.28	0.28	0.26	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	327	116		1528	633		175	912	408	84	838	
v/s Ratio Prot	0.04	c0.04		c0.37	0.03		c0.01	c0.26	0.14	c0.01	0.18	
v/s Ratio Perm	0.02						0.04			0.12		
v/c Ratio	0.31	0.48		0.77	0.08		0.16	0.94	0.48	0.46	0.71	
Uniform Delay, d1	39.8	53.4		25.5	21.6		40.3	42.2	36.0	53.6	40.3	
Progression Factor	1.00	1.00		1.00	1.00		1.16	1.06	4.02	1.00	1.00	
Incremental Delay, d2	0.4	2.3		3.7	0.2		0.2	14.4	3.0	2.9	5.1	
Delay (s)	40.2	55.7		29.2	21.8		47.1	59.0	147.5	56.6	45.4	
Level of Service	D	E		C	C		D	E	F	E	D	
Approach Delay (s)		47.4			28.7			98.1			46.1	
Approach LOS		D			C			F			D	

Intersection Summary			
HCM 2000 Control Delay	62.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.6
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
6: St Paul Highway & Bypass

5/14/2015



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	725	100	105	705	775	820
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.97		1.00	0.95	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	0.96		0.95	1.00	1.00	1.00
Satd. Flow (prot)	3130		1630	3260	1716	1458
Flt Permitted	0.96		0.14	1.00	1.00	1.00
Satd. Flow (perm)	3130		235	3260	1716	1458
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	806	111	117	783	861	911
RTOR Reduction (vph)	9	0	0	0	0	347
Lane Group Flow (vph)	908	0	117	783	861	564
Turn Type	Prot		pm+pt	NA	NA	Perm
Protected Phases	3		1	6	2	
Permitted Phases			6			2
Actuated Green, G (s)	35.7		76.3	76.3	68.3	68.3
Effective Green, g (s)	35.7		76.3	76.3	68.3	68.3
Actuated g/C Ratio	0.30		0.64	0.64	0.57	0.57
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.5		2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	931		195	2072	976	829
v/s Ratio Prot	c0.29		c0.02	0.24	c0.50	
v/s Ratio Perm			0.36			0.39
v/c Ratio	0.98		0.60	0.38	0.88	0.68
Uniform Delay, d1	41.7		39.5	10.5	22.4	18.2
Progression Factor	1.00		0.68	0.80	0.80	1.69
Incremental Delay, d2	23.4		3.2	0.4	8.1	3.0
Delay (s)	65.1		30.2	8.8	25.9	33.7
Level of Service	E		C	A	C	C
Approach Delay (s)	65.1			11.6	29.9	
Approach LOS	E			B	C	

Intersection Summary			
HCM 2000 Control Delay	34.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
9: St Paul Highway & NE Wynooski Street

5/14/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	0	135	50	0	35	300	700	25	135	515	225
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5		4.5	4.5		4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	0.95	
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630		1458	1630		1458	1630	1707		1630	1637	
Flt Permitted	0.95		1.00	0.95		1.00	0.11	1.00		0.36	1.00	
Satd. Flow (perm)	1630		1458	1630		1458	192	1707		611	1637	
Peak-hour factor, PHF	0.90	0.95	0.90	0.95	0.95	0.95	0.90	0.90	0.95	0.95	0.90	0.90
Adj. Flow (vph)	83	0	150	53	0	37	333	778	26	142	572	250
RTOR Reduction (vph)	0	0	141	0	0	36	0	1	0	0	12	0
Lane Group Flow (vph)	83	0	9	53	0	1	333	803	0	142	810	0
Turn Type	Prot		Perm	pm+pt		Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	3			7			1	6		5	2	
Permitted Phases			8	4		4	6			2		
Actuated Green, G (s)	8.0		8.0	6.4		3.2	96.8	86.5		70.9	64.6	
Effective Green, g (s)	7.5		7.5	5.4		2.7	96.3	86.0		69.9	64.1	
Actuated g/C Ratio	0.06		0.06	0.05		0.02	0.80	0.72		0.58	0.53	
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.5		2.5	2.5		2.5	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	101		91	73		32	486	1223		405	874	
v/s Ratio Prot	c0.05			c0.02			c0.16	0.47		0.02	c0.49	
v/s Ratio Perm			0.01	0.02		0.00	0.39			0.19		
v/c Ratio	0.82		0.10	0.73		0.03	0.69	0.66		0.35	0.93	
Uniform Delay, d1	55.6		53.1	56.3		57.4	27.1	9.1		14.1	25.8	
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		0.70	0.66	
Incremental Delay, d2	38.6		0.4	28.3		0.2	3.6	2.8		0.2	8.8	
Delay (s)	94.2		53.4	84.5		57.6	30.7	11.9		10.0	25.9	
Level of Service	F		D	F		E	C	B		B	C	
Approach Delay (s)		68.0			73.5			17.4			23.5	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	26.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
1: St Paul Highway & E 2nd Street

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	0	0	35	0	0	285	0	540	210	0	850	60
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	39	0	0	317	0	600	233	0	944	67
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2011	1728	717	1733	1811	978	1011			833		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2011	1728	717	1733	1811	978	1011			833		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	91	100	100	0	100			100		
cM capacity (veh/h)	0	88	430	63	79	304	686			800		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	39	317	833	1011
Volume Left	0	0	0	0
Volume Right	39	317	233	67
cSH	430	304	1700	1700
Volume to Capacity	0.09	1.04	0.49	0.59
Queue Length 95th (ft)	7	293	0	0
Control Delay (s)	14.2	101.3	0.0	0.0
Lane LOS	B	F		
Approach Delay (s)	14.2	101.3	0.0	0.0
Approach LOS	B	F		

Intersection Summary				
Average Delay	14.8			
Intersection Capacity Utilization	79.2%	ICU Level of Service	D	
Analysis Period (min)	15			

HCM Signalized Intersection Capacity Analysis
2: Springbrook Road & E 2nd Street/E Fernwood Road

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	110	95	450	205	25	135	380	405	270	425	105
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.99		1.00	0.92		1.00	0.97	
Flt Protected		0.99			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1614			1652		1630	1583		1630	1665	
Flt Permitted		0.82			0.59		0.14	1.00		0.09	1.00	
Satd. Flow (perm)		1334			1011		246	1583		151	1665	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	122	106	500	228	28	150	422	450	300	472	117
RTOR Reduction (vph)	0	17	0	0	1	0	0	32	0	0	7	0
Lane Group Flow (vph)	0	272	0	0	755	0	150	840	0	300	582	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		55.0			55.0		50.0	43.0		56.0	46.0	
Effective Green, g (s)		54.5			54.5		49.0	42.5		55.0	45.5	
Actuated g/C Ratio		0.45			0.45		0.41	0.35		0.46	0.38	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.5			2.5		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)		605			459		175	560		186	631	
v/s Ratio Prot							0.05	0.53		c0.13	0.35	
v/s Ratio Perm		0.20			c0.75		0.30			c0.61		
v/c Ratio		0.45			1.64		0.86	1.50		1.61	0.92	
Uniform Delay, d1		22.5			32.8		29.5	38.8		33.2	35.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4			299.8		31.2	234.0		299.3	21.0	
Delay (s)		22.8			332.5		60.7	272.8		332.5	56.6	
Level of Service		C			F		E	F		F	E	
Approach Delay (s)		22.8			332.5			241.7			149.7	
Approach LOS		C			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	215.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	136.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
4: St Paul Highway & Industrial Parkway/Springbrook Road

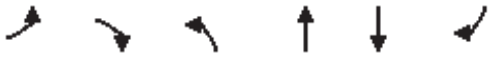
5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	40	40	1055	25	50	25	770	635	130	405	40
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.4	4.4		4.4	4.4		4.4	4.4	4.4	4.4	4.4	
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.93		1.00	0.90		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1630	1587		3162	1544		1630	3260	1458	1630	3216	
Flt Permitted	0.70	1.00		0.95	1.00		0.33	1.00	1.00	0.11	1.00	
Satd. Flow (perm)	1205	1587		3162	1544		564	3260	1458	194	3216	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	100	44	44	1172	28	56	28	856	706	144	450	44
RTOR Reduction (vph)	0	32	0	0	35	0	0	0	514	0	6	0
Lane Group Flow (vph)	100	56	0	1172	49	0	28	856	192	144	488	0
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA	Prot	pm+pt	NA	
Protected Phases	3	8		7	4		1	6	6	5	2	
Permitted Phases	8						6			2		
Actuated Green, G (s)	27.2	9.2		54.2	45.4		37.8	33.0	33.0	43.4	35.8	
Effective Green, g (s)	26.4	8.8		53.8	45.0		37.0	32.6	32.6	42.6	35.4	
Actuated g/C Ratio	0.22	0.07		0.45	0.38		0.31	0.27	0.27	0.36	0.29	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	327	116		1417	579		212	885	396	155	948	
v/s Ratio Prot	0.04	c0.04		c0.37	0.03		0.00	0.26	0.13	c0.06	0.15	
v/s Ratio Perm	0.02						0.04			c0.27		
v/c Ratio	0.31	0.48		0.83	0.08		0.13	0.97	0.48	0.93	0.52	
Uniform Delay, d1	39.8	53.4		29.0	24.2		37.2	43.2	36.7	49.8	35.2	
Progression Factor	1.00	1.00		1.00	1.00		1.13	1.03	3.90	1.00	1.00	
Incremental Delay, d2	0.4	2.3		5.7	0.3		0.2	19.6	3.2	51.0	2.0	
Delay (s)	40.2	55.7		34.7	24.5		42.2	64.3	146.0	100.8	37.2	
Level of Service	D	E		C	C		D	E	F	F	D	
Approach Delay (s)		47.4			34.0			100.2			51.5	
Approach LOS		D			C			F			D	

Intersection Summary			
HCM 2000 Control Delay	66.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.6
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
6: St Paul Highway & Bypass

5/11/2015



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	725	100	105	705	680	820
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.97		1.00	0.95	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	0.96		0.95	1.00	1.00	1.00
Satd. Flow (prot)	3130		1630	3260	1716	1458
Flt Permitted	0.96		0.19	1.00	1.00	1.00
Satd. Flow (perm)	3130		334	3260	1716	1458
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	806	111	117	783	756	911
RTOR Reduction (vph)	10	0	0	0	0	384
Lane Group Flow (vph)	907	0	117	783	756	527
Turn Type	Prot		pm+pt	NA	NA	Perm
Protected Phases	3		1	6	2	
Permitted Phases			6			2
Actuated Green, G (s)	37.1		74.9	74.9	66.9	66.9
Effective Green, g (s)	37.1		74.9	74.9	66.9	66.9
Actuated g/C Ratio	0.31		0.62	0.62	0.56	0.56
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.5		2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	967		251	2034	956	812
v/s Ratio Prot	c0.29		0.02	c0.24	c0.44	
v/s Ratio Perm			0.27			0.36
v/c Ratio	0.94		0.47	0.38	0.79	0.65
Uniform Delay, d1	40.3		32.2	11.2	21.0	18.4
Progression Factor	1.00		0.65	0.78	0.56	2.79
Incremental Delay, d2	16.0		0.8	0.4	4.7	2.8
Delay (s)	56.3		21.7	9.1	16.5	54.1
Level of Service	E		C	A	B	D
Approach Delay (s)	56.3			10.7	37.0	
Approach LOS	E			B	D	

Intersection Summary			
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
9: St Paul Highway & NE Wynooski Street

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	0	135	50	0	35	300	700	25	40	515	225
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5		4.5	4.5		4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	0.95	
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630		1458	1630		1458	1630	1707		1630	1637	
Flt Permitted	0.95		1.00	0.95		1.00	0.11	1.00		0.36	1.00	
Satd. Flow (perm)	1630		1458	1630		1458	194	1707		621	1637	
Peak-hour factor, PHF	0.90	0.95	0.90	0.95	0.95	0.95	0.90	0.90	0.95	0.95	0.90	0.90
Adj. Flow (vph)	83	0	150	53	0	37	333	778	26	42	572	250
RTOR Reduction (vph)	0	0	141	0	0	36	0	1	0	0	12	0
Lane Group Flow (vph)	83	0	9	53	0	1	333	803	0	42	810	0
Turn Type	Prot		Perm	pm+pt		Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	3			7			1	6		5	2	
Permitted Phases			8	4		4	6			2		
Actuated Green, G (s)	8.0		8.0	6.4		3.2	96.8	88.9		68.6	64.7	
Effective Green, g (s)	7.5		7.5	5.4		2.7	96.3	88.4		67.6	64.2	
Actuated g/C Ratio	0.06		0.06	0.05		0.02	0.80	0.74		0.56	0.54	
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.5		2.5	2.5		2.5	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	101		91	73		32	485	1257		378	875	
v/s Ratio Prot	c0.05			c0.02			c0.16	0.47		0.00	c0.49	
v/s Ratio Perm			0.01	0.02		0.00	0.39			0.06		
v/c Ratio	0.82		0.10	0.73		0.03	0.69	0.64		0.11	0.93	
Uniform Delay, d1	55.6		53.1	56.3		57.4	27.0	7.9		12.3	25.7	
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		0.71	0.62	
Incremental Delay, d2	38.6		0.4	28.3		0.2	3.7	2.5		0.1	11.0	
Delay (s)	94.2		53.4	84.5		57.6	30.7	10.4		8.8	26.9	
Level of Service	F		D	F		E	C	B		A	C	
Approach Delay (s)		68.0			73.5			16.3			26.0	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	27.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
1: St Paul Highway & E 2nd Street

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	0	0	35	0	0	170	0	540	210	0	965	135
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	39	0	0	189	0	600	233	0	1072	150
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2053	1939	717	1903	1981	1147	1222			833		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2053	1939	717	1903	1981	1147	1222			833		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	91	100	100	22	100			100		
cM capacity (veh/h)	9	65	430	48	62	242	570			800		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	39	189	833	1222
Volume Left	0	0	0	0
Volume Right	39	189	233	150
cSH	430	242	1700	1700
Volume to Capacity	0.09	0.78	0.49	0.72
Queue Length 95th (ft)	7	143	0	0
Control Delay (s)	14.2	57.9	0.0	0.0
Lane LOS	B	F		
Approach Delay (s)	14.2	57.9	0.0	0.0
Approach LOS	B	F		

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
2: Springbrook Road & E 2nd Street/E Fernwood Road

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	110	170	450	205	25	20	380	405	100	595	105
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.99		1.00	0.92		1.00	0.98	
Flt Protected		0.99			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1585			1652		1630	1583		1630	1677	
Flt Permitted		0.84			0.55		0.09	1.00		0.09	1.00	
Satd. Flow (perm)		1337			930		156	1583		150	1677	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	122	189	500	228	28	22	422	450	111	661	117
RTOR Reduction (vph)	0	31	0	0	1	0	0	32	0	0	5	0
Lane Group Flow (vph)	0	341	0	0	755	0	22	840	0	111	773	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		61.0			61.0		47.0	44.6		50.2	46.2	
Effective Green, g (s)		60.5			60.5		46.0	44.1		49.2	45.7	
Actuated g/C Ratio		0.50			0.50		0.38	0.36		0.40	0.38	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.5			2.5		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)		665			462		82	574		103	630	
v/s Ratio Prot							0.00	c0.53		c0.03	0.46	
v/s Ratio Perm		0.26			c0.81		0.10			0.40		
v/c Ratio		0.51			1.63		0.27	1.46		1.08	1.23	
Uniform Delay, d1		20.6			30.5		30.5	38.8		38.1	37.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5			295.1		1.3	218.1		111.2	115.8	
Delay (s)		21.1			325.6		31.8	256.9		149.3	153.7	
Level of Service		C			F		C	F		F	F	
Approach Delay (s)		21.1			325.6			251.3			153.2	
Approach LOS		C			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	211.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.55		
Actuated Cycle Length (s)	121.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	130.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
4: St Paul Highway & Industrial Parkway/Springbrook Road

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	40	40	1300	25	50	25	960	750	35	500	40
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.4	4.4		4.4	4.4		4.4	4.4	4.4	4.4	4.4	
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.93		1.00	0.90		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1630	1587		3162	1544		1630	3260	1458	1630	3224	
Flt Permitted	0.70	1.00		0.95	1.00		0.28	1.00	1.00	0.11	1.00	
Satd. Flow (perm)	1205	1587		3162	1544		486	3260	1458	184	3224	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	100	44	44	1444	28	56	28	1067	833	39	556	44
RTOR Reduction (vph)	0	32	0	0	36	0	0	0	558	0	5	0
Lane Group Flow (vph)	100	56	0	1444	48	0	28	1067	275	39	595	0
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA	Prot	pm+pt	NA	
Protected Phases	3	8		7	4		1	6	6	5	2	
Permitted Phases	8						6			2		
Actuated Green, G (s)	27.2	9.2		52.4	43.6		44.8	40.0	40.0	40.0	37.6	
Effective Green, g (s)	26.4	8.8		52.0	43.2		44.0	39.6	39.6	39.2	37.2	
Actuated g/C Ratio	0.22	0.07		0.43	0.36		0.37	0.33	0.33	0.33	0.31	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	327	116		1370	555		220	1075	481	84	999	
v/s Ratio Prot	0.04	c0.04		c0.46	0.03		c0.00	c0.33	0.19	c0.01	0.18	
v/s Ratio Perm	0.02						0.04			0.14		
v/c Ratio	0.31	0.48		1.05	0.09		0.13	0.99	0.57	0.46	0.60	
Uniform Delay, d1	39.8	53.4		34.0	25.4		34.5	40.1	33.2	54.7	35.0	
Progression Factor	1.00	1.00		1.00	1.00		1.33	1.18	5.24	1.00	1.00	
Incremental Delay, d2	0.4	2.3		39.9	0.3		0.1	19.4	2.9	2.9	2.6	
Delay (s)	40.2	55.7		73.9	25.7		46.0	66.5	176.7	57.6	37.7	
Level of Service	D	E		E	C		D	E	F	E	D	
Approach Delay (s)		47.4			71.3			113.9			38.9	
Approach LOS		D			E			F			D	

Intersection Summary			
HCM 2000 Control Delay	84.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.6
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
6: St Paul Highway & Bypass/NE Wilsonville Road

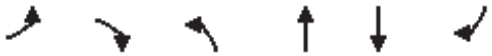
5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	765	0	60	50	0	265	70	705	25	305	680	855
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0		4.5	4.0		4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97		1.00	1.00		1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00		0.85	1.00		0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3162		1458	1630		1458	1630	3243		1630	1716	1458
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3162		1458	1630		1458	1630	3243		1630	1716	1458
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	850	0	67	56	0	294	78	783	28	339	756	950
RTOR Reduction (vph)	0	0	63	0	0	33	0	2	0	0	0	39
Lane Group Flow (vph)	850	0	4	56	0	261	78	809	0	339	756	911
Turn Type	Prot		Over	Prot		Over	Prot	NA		Prot	NA	pm+ov
Protected Phases	3		1	7		5	1	6		5	2	3
Permitted Phases												2
Actuated Green, G (s)	34.8		8.0	34.8		32.0	8.0	41.2		32.0	65.2	100.0
Effective Green, g (s)	34.8		7.5	34.8		32.0	8.0	41.2		32.0	65.2	100.0
Actuated g/C Ratio	0.29		0.06	0.29		0.27	0.07	0.34		0.27	0.54	0.83
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	2.5		2.5	2.5		2.5	2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	916		91	472		388	108	1113		434	932	1263
v/s Ratio Prot	c0.27		0.00	0.03		0.18	0.05	0.25		c0.21	c0.44	0.21
v/s Ratio Perm												0.42
v/c Ratio	0.93		0.05	0.12		0.67	0.72	0.73		0.78	0.81	0.72
Uniform Delay, d1	41.4		52.9	31.3		39.3	54.9	34.5		40.8	22.4	4.2
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		0.74	0.59	3.67
Incremental Delay, d2	15.1		0.2	0.1		9.0	19.9	4.2		6.0	3.4	0.8
Delay (s)	56.4		53.0	31.4		48.3	74.8	38.6		36.2	16.7	16.2
Level of Service	E		D	C		D	E	D		D	B	B
Approach Delay (s)		56.2			45.6			41.8			19.7	
Approach LOS		E			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	34.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
9: St Paul Highway & NE Wynooski Street

5/21/2015



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	75	135	300	725	565	225
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	83	150	333	806	628	250
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		10				
Median type				TWLTL	None	
Median storage veh)				2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2225	753	628			
vC1, stage 1 conf vol	753					
vC2, stage 2 conf vol	1472					
vCu, unblocked vol	2225	753	628			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	35	63	65			
cM capacity (veh/h)	129	410	954			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	233	333	806	878
Volume Left	83	333	0	0
Volume Right	150	0	0	250
cSH	361	954	1700	1700
Volume to Capacity	0.65	0.35	0.47	0.52
Queue Length 95th (ft)	108	39	0	0
Control Delay (s)	38.4	10.8	0.0	0.0
Lane LOS	E	B		
Approach Delay (s)	38.4	3.2		0.0
Approach LOS	E			

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
1: St Paul Highway & E 2nd Street

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	0	0	35	0	0	170	0	540	210	0	965	60
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	39	0	0	189	0	600	233	0	1072	67
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2011	1856	717	1861	1939	1106	1139			833		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2011	1856	717	1861	1939	1106	1139			833		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	91	100	100	26	100			100		
cM capacity (veh/h)	12	74	430	51	65	256	613			800		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	39	189	833	1139
Volume Left	0	0	0	0
Volume Right	39	189	233	67
cSH	430	256	1700	1700
Volume to Capacity	0.09	0.74	0.49	0.67
Queue Length 95th (ft)	7	130	0	0
Control Delay (s)	14.2	50.3	0.0	0.0
Lane LOS	B	F		
Approach Delay (s)	14.2	50.3	0.0	0.0
Approach LOS	B	F		

Intersection Summary				
Average Delay	4.6			
Intersection Capacity Utilization	78.0%	ICU Level of Service	D	
Analysis Period (min)	15			

HCM Signalized Intersection Capacity Analysis
2: Springbrook Road & E 2nd Street/E Fernwood Road

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	110	95	485	205	25	20	380	445	100	595	105
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			1.00		1.00	0.92		1.00	0.98	
Flt Protected		0.99			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1614			1652		1630	1577		1630	1677	
Flt Permitted		0.81			0.59		0.09	1.00		0.08	1.00	
Satd. Flow (perm)		1315			1015		149	1577		144	1677	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	122	106	539	228	28	22	422	494	111	661	117
RTOR Reduction (vph)	0	18	0	0	1	0	0	35	0	0	5	0
Lane Group Flow (vph)	0	271	0	0	794	0	22	881	0	111	773	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		59.0			59.0		49.0	46.6		52.2	48.2	
Effective Green, g (s)		58.5			58.5		48.0	46.1		51.2	47.7	
Actuated g/C Ratio		0.48			0.48		0.39	0.38		0.42	0.39	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		2.5			2.5		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)		632			488		81	597		103	657	
v/s Ratio Prot							0.00	c0.56		c0.03	0.46	
v/s Ratio Perm		0.21			c0.78		0.10			0.42		
v/c Ratio		0.43			1.63		0.27	1.48		1.08	1.18	
Uniform Delay, d1		20.6			31.5		30.0	37.8		37.2	36.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3			291.4		1.3	223.2		111.2	94.8	
Delay (s)		21.0			323.0		31.3	261.0		148.4	131.8	
Level of Service		C			F		C	F		F	F	
Approach Delay (s)		21.0			323.0			255.6			133.9	
Approach LOS		C			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	213.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.54		
Actuated Cycle Length (s)	121.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	130.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
4: St Paul Highway & Industrial Parkway/Springbrook Road

5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	40	40	1260	25	50	25	885	790	35	500	40
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.4	4.4		4.4	4.4		4.4	4.4	4.4	4.4	4.4	
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.93		1.00	0.90		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1630	1587		3162	1544		1630	3260	1458	1630	3224	
Flt Permitted	0.70	1.00		0.95	1.00		0.28	1.00	1.00	0.11	1.00	
Satd. Flow (perm)	1205	1587		3162	1544		476	3260	1458	190	3224	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	100	44	44	1400	28	56	28	983	878	39	556	44
RTOR Reduction (vph)	0	32	0	0	35	0	0	0	596	0	5	0
Lane Group Flow (vph)	100	56	0	1400	49	0	28	983	282	39	595	0
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA	Prot	pm+pt	NA	
Protected Phases	3	8		7	4		1	6	6	5	2	
Permitted Phases	8						6			2		
Actuated Green, G (s)	27.2	9.2		53.4	44.6		43.8	39.0	39.0	39.0	36.6	
Effective Green, g (s)	26.4	8.8		53.0	44.2		43.0	38.6	38.6	38.2	36.2	
Actuated g/C Ratio	0.22	0.07		0.44	0.37		0.36	0.32	0.32	0.32	0.30	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	327	116		1396	568		212	1048	468	84	972	
v/s Ratio Prot	0.04	c0.04		c0.44	0.03		c0.00	c0.30	0.19	c0.01	0.18	
v/s Ratio Perm	0.02						0.04			0.14		
v/c Ratio	0.31	0.48		1.00	0.09		0.13	0.94	0.60	0.46	0.61	
Uniform Delay, d1	39.8	53.4		33.5	24.7		35.4	39.5	34.3	53.0	35.9	
Progression Factor	1.00	1.00		1.00	1.00		1.32	1.17	6.00	1.00	1.00	
Incremental Delay, d2	0.4	2.3		24.8	0.3		0.1	11.5	3.6	2.9	2.9	
Delay (s)	40.2	55.7		58.3	25.0		46.8	57.6	209.2	55.9	38.8	
Level of Service	D	E		E	C		D	E	F	E	D	
Approach Delay (s)		47.4			56.4			127.9			39.8	
Approach LOS		D			E			F			D	

Intersection Summary			
HCM 2000 Control Delay	85.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.6
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
6: St Paul Highway & Bypass/NE Wilsonville Road

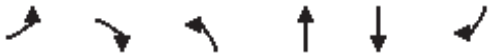
5/11/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	765	0	60	50	0	230	70	705	25	265	680	855
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0		4.5	4.0		4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97		1.00	1.00		1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00		0.85	1.00		0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3162		1458	1630		1458	1630	3243		1630	1716	1458
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3162		1458	1630		1458	1630	3243		1630	1716	1458
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	850	0	67	56	0	256	78	783	28	294	756	950
RTOR Reduction (vph)	0	0	63	0	0	34	0	2	0	0	0	39
Lane Group Flow (vph)	850	0	4	56	0	222	78	809	0	294	756	911
Turn Type	Prot		Over	Prot		Over	Prot	NA		Prot	NA	pm+ov
Protected Phases	3		1	7		5	1	6		5	2	3
Permitted Phases												2
Actuated Green, G (s)	34.8		8.0	34.8		29.0	8.0	44.2		29.0	65.2	100.0
Effective Green, g (s)	34.8		7.5	34.8		29.0	8.0	44.2		29.0	65.2	100.0
Actuated g/C Ratio	0.29		0.06	0.29		0.24	0.07	0.37		0.24	0.54	0.83
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	2.5		2.5	2.5		2.5	2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	916		91	472		352	108	1194		393	932	1263
v/s Ratio Prot	c0.27		0.00	0.03		0.15	0.05	0.25		c0.18	c0.44	0.21
v/s Ratio Perm												0.42
v/c Ratio	0.93		0.05	0.12		0.63	0.72	0.68		0.75	0.81	0.72
Uniform Delay, d1	41.4		52.9	31.3		40.7	54.9	31.9		42.1	22.4	4.2
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		0.77	0.63	3.41
Incremental Delay, d2	15.1		0.2	0.1		8.3	19.9	3.1		6.2	3.8	0.9
Delay (s)	56.4		53.0	31.4		49.0	74.8	35.0		38.6	17.9	15.2
Level of Service	E		D	C		D	E	D		D	B	B
Approach Delay (s)		56.2			45.8			38.5			19.6	
Approach LOS		E			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	33.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
9: St Paul Highway & NE Wynooski Street

5/11/2015



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	75	135	300	725	565	225
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	83	150	333	806	628	250
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		10				
Median type				TWLTL	None	
Median storage veh)				2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2225	753	628			
vC1, stage 1 conf vol	753					
vC2, stage 2 conf vol	1472					
vCu, unblocked vol	2225	753	628			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	35	63	65			
cM capacity (veh/h)	129	410	954			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	233	333	806	878
Volume Left	83	333	0	0
Volume Right	150	0	0	250
cSH	361	954	1700	1700
Volume to Capacity	0.65	0.35	0.47	0.52
Queue Length 95th (ft)	108	39	0	0
Control Delay (s)	38.4	10.8	0.0	0.0
Lane LOS	E	B		
Approach Delay (s)	38.4	3.2		0.0
Approach LOS	E			

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		

Newberg Dundee Bypass
Tier 2 Final
Technical Memorandum

Transportation

Prepared for:

Federal Highway Administration
Oregon Department of Transportation

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January 2012


Newberg-Dundee
Bypass Project
Newberg
OREGON 99W
SPRINGBROOK ROAD
ELLIOT ROAD
DEBORAH
2ND STREET
E FERNWOOD ROAD
NE WILSONVILLE ROAD
WYNOOSKI RD
99W
219
Restricted right in/right out.
Add traffic signal.
Additional southbound left turn lane.
Additional southbound left turn lane.
Widen Springbrook Road to three lanes.
Cul-de-sac
Widen Oregon 219 to five lanes. Add traffic signal. Connect Wilsonville Road to new Bypass.
Add right turn lane.
Figure 9 Phase 1 New Areas in East Newberg
Phase 1
Roadway Improvements
Planter Strip
Sidewalks
Bike Lane
Right-of-Way
N
0 200 400 Feet
Map ID: Fig2.2-7 Ph1NewAreaENewberg.indd
Print Date: December 2011

Average Daily Traffic Forecast

The ADT forecasts for 2016 at key locations along Oregon 99W, Oregon 219, and Phase 1 are shown in Table 12.

Table 12. Summary of 2011, 2016 and 2035 ADT Forecasts

	ADT (In thousands of vehicles per day)						
Location	**Existing Volume (2011)**	**2016 No Build**	**2016 Phase 1**	**% Change in 2016 with Phase 1**	**2035 No Build**	**2035 with Phase 1**	**% Change in 2035 with Phase 1**
Oregon 99W							
East of Rex Hill	39	43	44	0	60	60	0
East of Springbrook Road	39	41	40	-4	53	50.0	-5
East of College Street	46	48	39	-20	57	51	-10
North of Fox Farm Road	23	29	18	-37	38	27	-28
East of 5th Street in Dundee	26	32	19	-41	46	29	-36
South of Bypass Ramp Terminal	24	30	30	0	40	40	0
Oregon 219							
South of Springbrook Road	14.1	16	28	+82	22	35	+55
Bypass							
Phase 1	N/A	N/A	16	N/A	N/A	20	N/A

Source: Phase 1 Technical Report Addendum (Appendix B).

N/A = Not Applicable.

Under the No Build Alternative, 2016 ADT within the project area is forecast to range from 29,000 to 48,000 vehicles on Oregon 99W, and about 16,000 on Oregon 219. Without Phase 1, ADT is projected to increase by 5 to 25 percent on Oregon 99W and by about 10 percent on Oregon 219 as compared to 2011. In many locations, the demand on Oregon 99W would exceed its capacity. As a result, more traffic will use the local street system for alternate routes, adversely affecting traffic mobility on local streets.

Phase 1 is forecast to have 2016 ADT of 16,000 vehicles. Compared to the No Build Alternative, Phase 1 is forecast to reduce traffic levels on Oregon 99W between Providence Drive in Newberg to south of Dundee. In 2016, these reductions will range from 1,500 to 13,000 vehicles per day. Traffic levels for Phase 1 will increase over the No Build Alternative in 2016 on Oregon 219 north of Wynooski Road. This is due to the additional travel demand

by motorists desiring to access Phase 1 at the Oregon 219 intersection (the east end of Phase 1).

Phase 1 will decrease ADT in downtown Dundee (East of 5th Street) by about 40 percent and in downtown Newberg (East of College Street) by 20 percent in the opening year (see Table 12). This decrease will reduce vehicle congestion, ease access to properties along Oregon 99W, and allow for more vibrant and pedestrian-friendly redevelopment in the downtowns.

In 2035, Phase 1 is forecast to have an ADT of 20,000 vehicles (see Table 12). Phase 1 is predicted to reduce traffic levels on Oregon 99W between Providence Drive in Newberg and south of Dundee by 3,000 to 17,000 vehicles per day as compared to the No Build Alternative in 2035. Traffic levels for Phase 1 will increase on Oregon 219 north of Wynooski Road due to motorists desiring to access Phase 1 at the Oregon 219 Intersection. In 2035, Phase 1 will decrease ADT in downtown Dundee by about 35 percent and in downtown Newberg by 10 percent in 2035 as compared to the No Build Alternative (see Table 12).

Intersection Operations in 2016

The performance of study intersections was assessed based on whether the intersection will be "project impacted" or "non-project impacted" by Phase 1. The project-impacted intersections include the Phase 1 intersections on Oregon 219 in Newberg, on Oregon 99W south of Dundee, and the Springbrook Road/Oregon 219 intersection in Newberg. Widening Oregon 219 between the new intersection and Springbrook Road will be part of Phase 1. Because it will be substantially reconstructed as part of the widening and was included in the Tier 2 DEIS footprint, ODOT considers the Springbrook Road/Oregon 219 intersection to be project impacted. The project-impacted intersections are subject to the mobility standards outlined in ODOT's HDM based on demand in 2016. See Appendix B for more detail.

ODOT commits to implementing traffic improvement measures associated with Phase 1 based on forecast 2016 opening-year demand. These measures will bring non-project-impacted intersections up to or better than the level of operational performance expected with the No Build Alternative.

The weekday p.m. peak-hour intersection operations for all study intersections were evaluated under Phase 1 and the No Build Alternative for 2016 and 2035. The forecast operations were compared with relevant standards depending on whether the intersection will be project- or non-project-impacted by Phase 1 (see Table 13).

The 2016 results (termed *Phase 1 – Unimproved* in Table 13) were used by ODOT to determine traffic improvement measures to be included with Phase 1.

Table 13. Intersections Not Meeting Standards with Phase 1 in 2016

Intersection	Performance Standard	2016		
		No Build	Phase 1 – Unimproved	Phase 1 – Improved
Project-Impacted Locations				
Bypass/Oregon 219	0.65	-	0.64	0.60
Oregon 219/ Springbrook Road	0.80	0.52	0.96	0.62
Non-Project-Impacted Locations				
Oregon 99W				
Providence Drive	0.70	0.79	0.79	0.79

Table 13. Intersections Not Meeting Standards with Phase 1 in 2016

Intersection	Performance Standard	2016		
		No Build	Phase 1 – Unimproved	Phase 1 – Improved
Brutscher Street	0.75	0.90	0.82	0.82
Springbrook Street	0.75	0.90	0.86	0.84
Elliott Street	0.80	0.75	0.82[a]	0.76
Villa Road	0.80	0.81	0.73	0.77
College Street (north)	0.90	0.79	0.72	0.72
Oregon 219				
2nd Street	0.80	0.51	>2.0[a]	0.19
Wynooski Road	0.80	0.88	0.98*	0.74
Key Local Intersections				
Springbrook Street/ Fernwood Road	0.90	0.70	>2.0*	0.63
Wilsonville Road/ Springbrook Street	0.90	0.73	1.4[a]	Removed
Elliott Street/Hayes Street	0.90	0.29	0.47	0.09
Elliott Street/2nd Street	0.90	0.07	1.1[a]	0.52
Brutscher Street/Fernwood Road	0.90	0.31	0.32	0.31
Oregon 219				
2nd Street	0.80	0.51	>2.0[a]	0.19
Wynooski Road	0.80	0.88	0.98[a]	0.74

Source: Phase 1 Technical Report Addendum (Appendix B).

a With Phase 1 in place without mitigation, intersection operates worse than for the No Build Alternative and does not meet relevant standard.

In 2016, if left unimproved, the following non-project-impacted intersections will operate at a level worse than the No Build Alternative (see Table 13). The improvement measures that ODOT will implement with Phase 1 to achieve No Build or better conditions are discussed in detail under Phase 1 of the Mitigation Measures section. A brief summary is provided below.

- Oregon 99W/Springbrook Road – Construct second westbound left turn and second southbound receiving lane on Springbrook Road.
- Oregon 219/Springbrook Road – Construct second westbound left turn lane, second southbound through lane, and second northbound through lane.
- Springbrook Road/Fernwood Road – Signalize intersection.
- 2nd Street/Oregon 219 – Convert 2nd Street to right-in/right-out.
- Oregon 219/Wynooski Road – Construct eastbound right-turn lane.
- Wilsonville Road/Springbrook Road – Construct a cul-de-sac on Wilsonville Road south of Springbrook Road.

The Elliott Street/2nd Street and Elliott Street/Oregon 99W intersections will operate better than they would have for the No Build Alternative following the conversion of the 2nd Street/Oregon 219 intersection to right-in/right-out. With the 2nd Street/Oregon 219 intersection restricted to right-in/right-out, traffic will travel between Oregon 99W and Phase 1 via Springbrook Road, rather than on Elliott Street. As a result, these two intersections on Elliott Street will meet OHP and city standards and will not require improvement measures in 2016 with Phase 1. At the same time, the Springbrook/Oregon 99W intersection will operate worse than it would have for the No Build Alternative if the Bypass-oriented traffic primarily uses the Springbrook Road corridor. As a result, traffic improvement measures are needed at the Springbrook Road/Oregon 99W intersection as a result of Phase 1.

Table 13 shows two non-project-impacted intersections that are forecast to not meet performance standards in 2016 with Phase 1 that will operate at or better than they would have under No Build Alternative conditions. These include Oregon 99W at Providence Drive and Oregon 99W at Brutscher Street. Because the two intersections will operate better than they would have for the No Build Alternative in 2016, they will not require improvement measures.

The improvement measures for intersections not meeting Phase 1 standards in the opening year (i.e., not meeting performance standards and operating worse than they would have for the No Build Alternative) are described under Phase 1 of the Mitigation Measures section.

Intersection Operations in 2035

The No Build and Preferred Alternatives section at the beginning of the Environmental Consequences section provides a summary of traffic conditions in 2035 under the No Build Alternative and under the Preferred Alternative. In contrast, this section provides a summary of the sensitivity analysis that ODOT performed to document what traffic conditions would be like in 2035 if only Phase 1 is constructed by 2035, compared to the No Build Alternative. This sensitivity analysis should be understood within the context that ODOT is continuing to propose that the full build-out of the Preferred Alternative will be completed by 2035.

In 2035, with only Phase 1 in place, Oregon 219 and other East Newberg roadways (south of Oregon 99W) will experience high levels of congestion, and many study intersections will exceed a v/c ratio of 1.0. This will make it much more difficult for travelers to reach the east end of Phase 1, thereby reducing the number of travelers over time.

In 2035, many of the East Newberg intersections will operate over capacity with just Phase 1 in place (see Table 14).

Completion of the full build-out of the Preferred Alternative will avoid these impacts. However, if only Phase 1 were to be constructed by 2035, the following improvement measures could be needed for the project-impacted intersections to meet HDM standards in 2035:

- Phase 1/Oregon 219 intersection – Add a third eastbound left turn lane off of Phase 1 and a third northbound through lane on Oregon 219.
- Oregon 219/Springbrook Road intersection – Add a third northbound through lane on Oregon 219 and a third westbound left turn lane on Springbrook Road.
- Oregon 219 – Widen to three through lanes in each direction between Springbrook Road and the Phase 1 intersection.
- Oregon 99W intersection south of Dundee – Convert to an interchange.

Rather than implementing these improvement measures, ODOT intends to construct the Preferred Alternative, in part because these measures are not feasible or appropriate. For example, the addition of triple left turn lanes at the Phase 1 intersection on Oregon 219, and

the Springbrook Road intersection on Oregon 219 is neither feasible nor appropriate given the context of the community. To date, no triple left turns have been constructed in Oregon. Further, as shown in Table 14, both intersections are anticipated to operate below capacity. Completion of the Preferred Alternative will eliminate the need for these improvements. Therefore, ODOT will not implement further improvement measures beyond those identified for opening year 2016.

Table 14. Intersections Not Meeting Standards with Phase 1 in 2035

Intersection	Performance Standard	2035	
		No Build	Phase 1
Project-Impacted Locations			
Bypass/Oregon 219	0.65	-	0.78
Oregon 219/ Springbrook Road	0.80	0.84	0.82
Non-Project-Impacted Locations			
Oregon 99W			
Providence Drive	0.70	1.4	1.6[a]
Brutscher Street	0.75	1.2	1.1
Springbrook Street	0.75	1.2	1.2
Elliott Street	0.80	1.04	1.1[a]
Villa Road	0.80	0.95	0.96[a]
College Street (north)	0.90	0.95	0.97[a]
Oregon 219			
2nd Street	0.80	>2.0	0.28
Wynooski Road	0.80	>2.0	>2.0[a]
Key Local Intersections			
Springbrook Street/ Fernwood Road	0.90	1.4	1.3
Wilsonville Road/ Springbrook Street	0.90	>2.0	Removed
Elliott Street/2nd Street	0.90	1.03	1.1[a]
Brutscher Street/Fernwood Road	0.90	1.6	>2.0[a]

Source: Phase 1 Technical Report Addendum (Appendix B).

a With Phase 1 in place without mitigation, intersection operates worse than for the No Build Alternative and does not meet relevant standard.

Construction Impacts

There are no construction traffic impacts with Phase 1 that will be different from those described for the Preferred Alternative, with the exception of the amount of excavation and soil disposal that will be required. Construction of Phase 1 will generate less than 181,700 cy of soil that will require off-site disposal, and it will result in fewer than 18,000 truck trips on local roads and arterials.

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	Title Sheet
1A, 1A-2, 1A-3	Index Of Sheets Cont. & Std. Drg. Nos.
1B	Sheet Layout

STATE OF OREGON
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED PROJECT

GRADING, PAVING, SIGNING, SIGNALS

OR18: NEWBERG-DUNDEE BYPASS (PHASE 1G) (SPRINGBROOK RD)

HILLSBORO-SILVERTON, PACIFIC HIGHWAY WEST, & SALMON RIVER HWYS.

YAMHILL COUNTY
DECEMBER 2015

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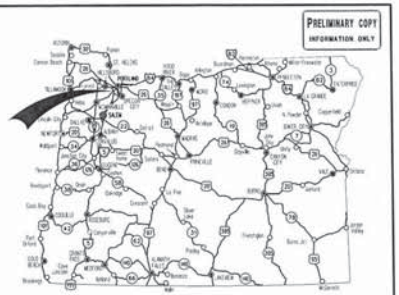


Overall Length Of Project - XX.XX Miles

ATTENTION:
Oregon Law Requires You To Follow Rules Adopted By The Oregon Utility Notification Center. Those Rules Are Set Forth In OAR 952-001-0010 Through OAR 952-001-0090. You May Obtain Copies Of The Rules By Calling The Center. (Note: The Telephone Number For The Oregon Utility Center Is (503) 232-1987.)

LET'S ALL WORK TOGETHER TO MAKE THIS JOB SAFE

BEGINNING OF PROJECT
STA. "N" 769+95 (M.P. 21.84)

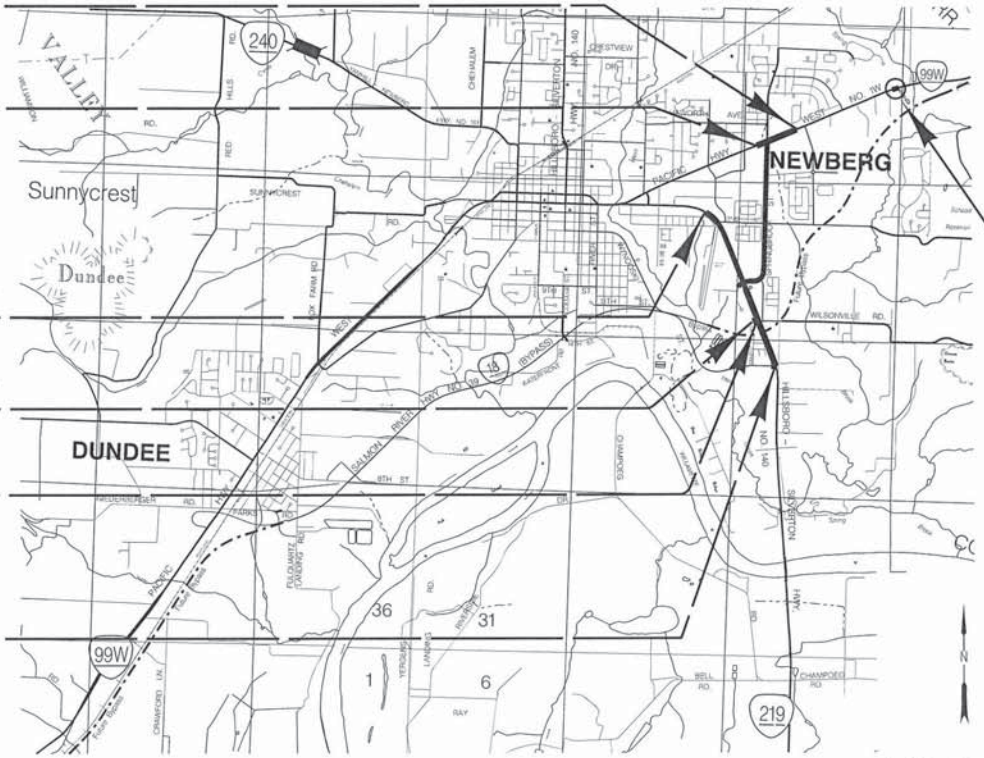
END OF PROJECT
STA. "N"786+54 (M.P. 22.16)

BEGINNING OF PROJECT
STA. "B" 30+38 (M.P. 21.14)

BEGINNING OF PROJECT
STA. "A3b" 24+82.4 (M.P. 59.63)

END OF PROJECT
STA. "A3b"26+80.70 (M.P. 59.67)

END OF PROJECT
STA. "B"85+72 (M.P. 22.19)



PROJECT SITE
STA. "LS" 720+30 (M.P. 21.20)

T. 3 S., R. 2 W., W.M.

OREGON TRANSPORTATION COMMISSION

Pat Egan	CHAIR
David Lohman	COMMISSIONER
Mary F. Olson	COMMISSIONER
Mark Frohnmayer	COMMISSIONER
Tommy Boney	COMMISSIONER
Matthew L. Garrett	DIRECTOR OF TRANSPORTATION

These plans were developed using ODOT design standards. Exceptions to these standards, if any, have been submitted and approved by the ODOT Chief Engineer or their delegated authority.

By: _____
Signature & date

Michael T. Long - R2 Tech Center Manager
Print name and title

_____
Concurrence by ODOT Chief Engineer

OR18: NEWBERG-DUNDEE BYPASS (PHASE 1G) (SPRINGBROOK RD)
HILLSBORO-SILVERTON, PACIFIC HWY WEST, & SALMON RIVER HWYS.
YAMHILL COUNTY

FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	STATE	1

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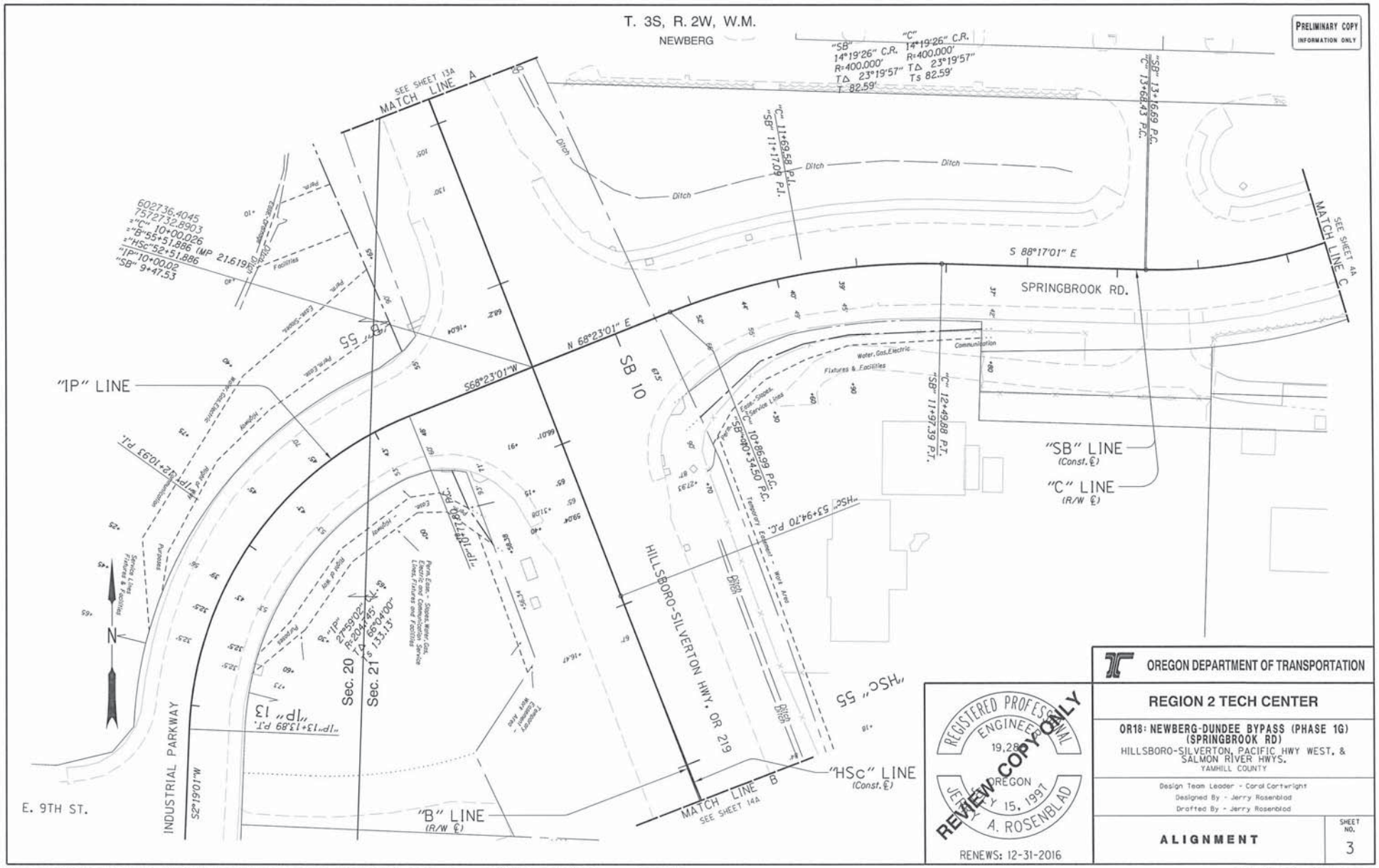
1:1200 - 001


T. 3S, R. 2W, W.M.
NEWBERG
PRELIMINARY COPY
INFORMATION ONLY
SEE SHEET 13A
MATCH LINE A
"SB" 14°19'26" C.R. R=400.000' TΔ 23°19'57" T 82.59'
"C" 14°19'26" C.R. R=400.000' TΔ 23°19'57" Ts 82.59'
"C" 11+69.58 P.T.
"SB" 11+17.09 P.T.
"SB" 13+16.69 P.C.
"C" 13+68.43 P.C.
Ditch
602736.4045
7572732.8903
"C" 10+00.026
"B" 55+51.886
"HSc" 52+51.886
"IP" 10+00.02
"SB" 9+47.53
(MP 21.619)
S 88°17'01" E
SPRINGBROOK RD.
SEE SHEET 4A
MATCH LINE C
N 68°23'01" E
S68°23'01"W
"IP" LINE
SB 10
"SB" 10+86.99 P.C.
"SB" 10+34.50 P.C.
"C" 12+49.88 P.T.
"SB" 11+97.39 P.T.
"SB" LINE
(Const.℄)
"C" LINE
(R/W ℄)
"IP" 52+10.93 P.I.
"IP" 10+77.80 P.C.
"HSc" 53+94.70 P.C.
"IP" 13+13.89 P.T.
"IP" 13
Sec. 20
Sec. 21
Δ=27°59'02"
R=204.785'
T=52.13'
L=100.00'
HILLSBORO-SILVERTON HWY. OR 219
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"HSc" LINE
(Const.℄)
"B" LINE
(R/W ℄)
MATCH LINE B
SEE SHEET 14A
INDUSTRIAL PARKWAY
S2°19'01"W
E. 9TH ST.
N
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG-DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
HILLSBORO-SILVERTON, PACIFIC HWY WEST, & SALMON RIVER HWYS.
YAMHILL COUNTY
Design Team Leader - Carol Cartwright
Designed By - Jerry Rosenblad
Drafted By - Jerry Rosenblad
ALIGNMENT
SHEET NO. 3
REGISTERED PROFESSIONAL ENGINEER
19,28
OREGON
JULY 15, 1997
JERRY A. ROSENBLAD
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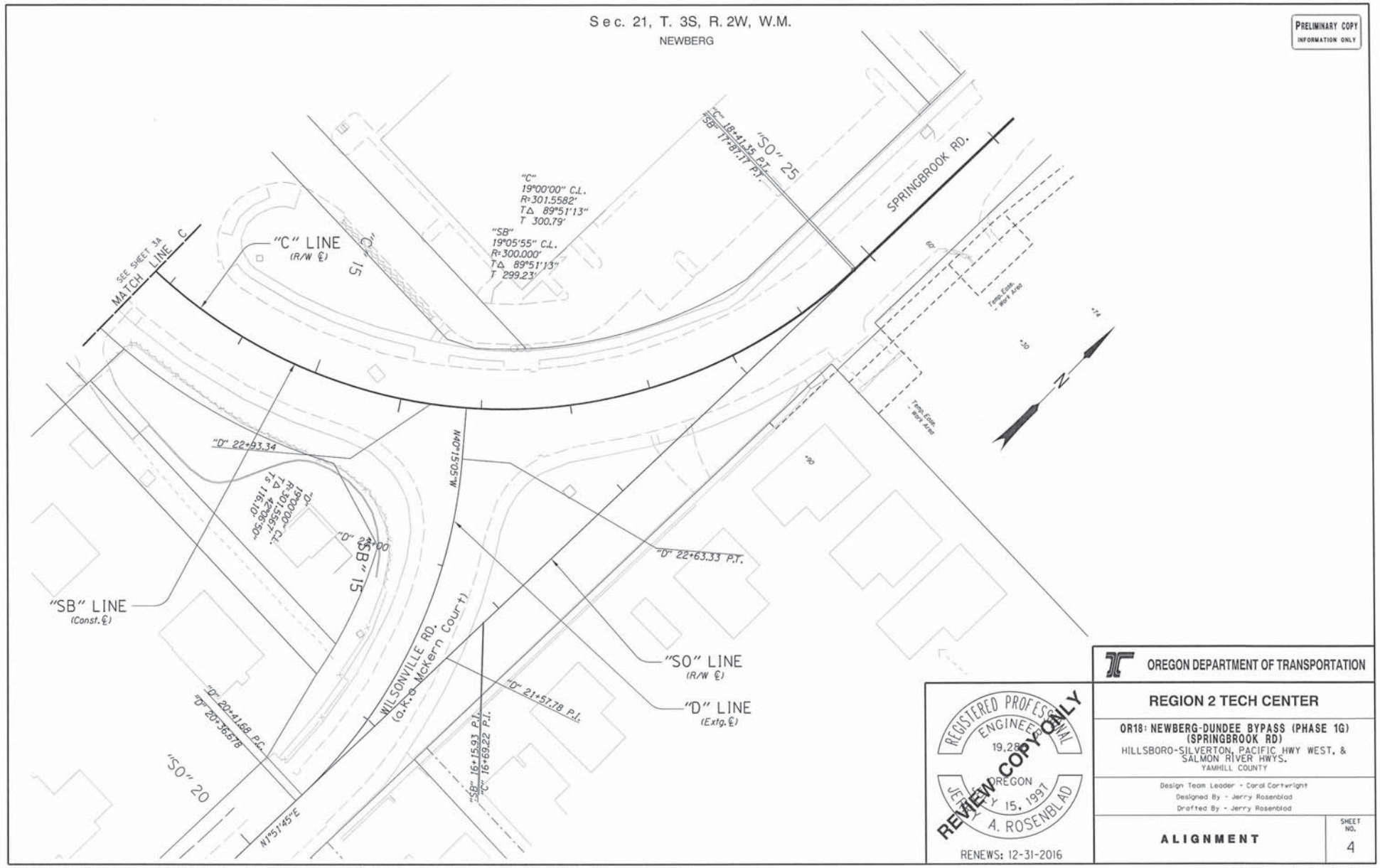
Sec. 21, T. 3S, R. 2W, W.M.
NEWBERG
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INFORMATION ONLY
SEE SHEET 3A
MATCH LINE C
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(R/W ℄)
"C"
19°00'00" C.L.
R=301.5582'
T△ 89°51'13"
T 300.79'
"SB"
19°05'55" C.L.
R=300.000'
T△ 89°51'13"
T 299.23'
"SO" 25
SPRINGBROOK RD.
"SB" LINE
(Const.℄)
"D" 22+93.34
"D" 22+63.33 P.T.
"SO" LINE
(R/W ℄)
"D" LINE
(Extg.℄)
WILSONVILLE RD.
(O.K. McKern Court)
"D" 21+57.78 P.I.
"SO" 20
N71°51'45"E
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG-DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
HILLSBORO-SILVERTON, PACIFIC HWY WEST, & SALMON RIVER HWYS.
YAMHILL COUNTY
REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 15, 1997
JERRY A. ROSENBLAD
RENEWS: 12-31-2016
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Design Team Leader - Carol Cartwright
Designed By - Jerry Rosenblad
Drafted By - Jerry Rosenblad
ALIGNMENT
SHEET NO. 4
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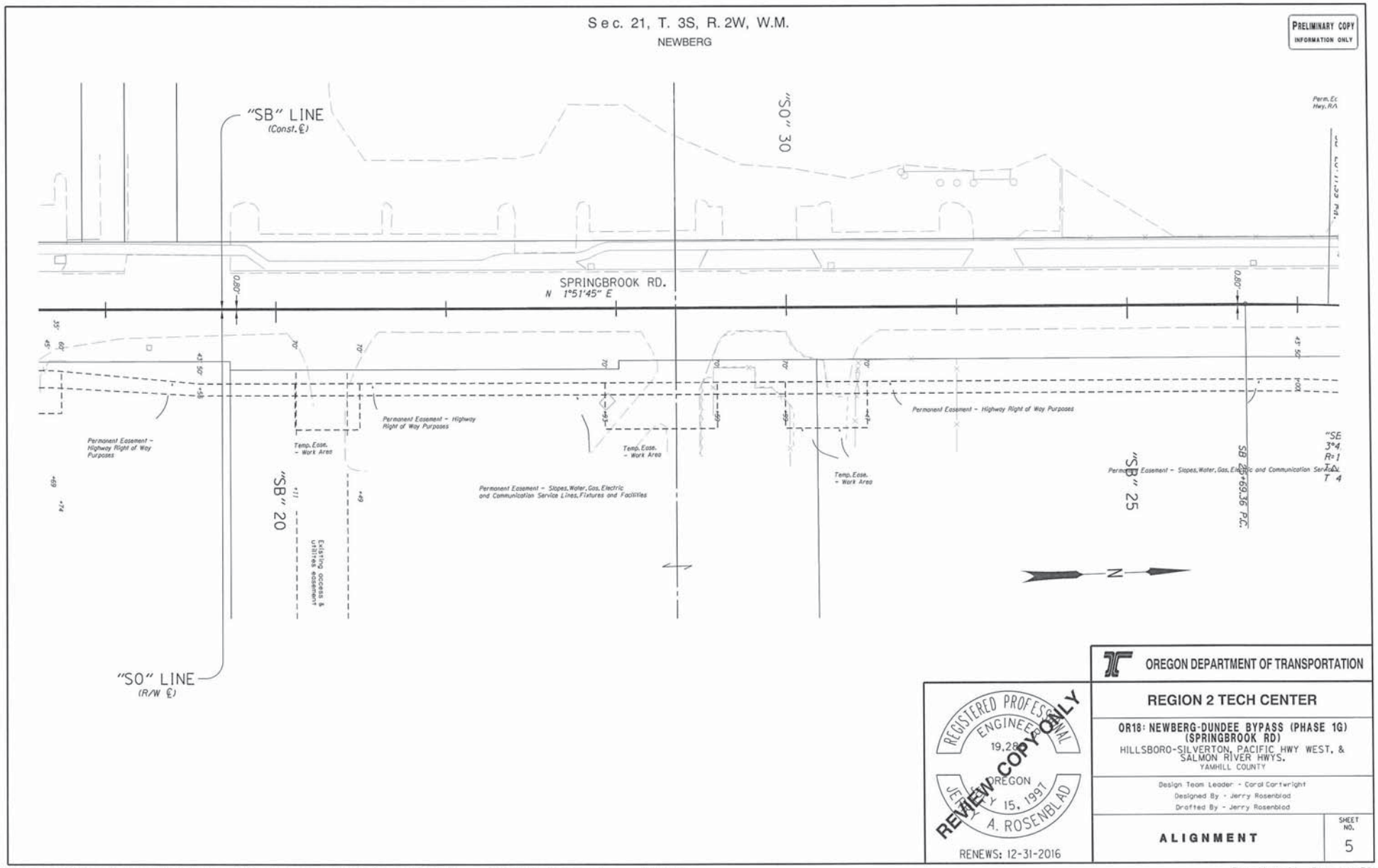
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NEWBERG
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INFORMATION ONLY
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(Const. ℄)
"SO" 30
SPRINGBROOK RD.
N 1°51'45" E
0.80'
Permanent Easement - Highway Right of Way Purposes
Temp. Ease. - Work Area
Permanent Easement - Slopes, Water, Gas, Electric and Communication Service Lines, Fixtures and Facilities
"SB" 20
"SB" 25
Existing access & utilities easement
"SO" LINE
(R/W ℄)
N
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG-DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
HILLSBORO-SILVERTON, PACIFIC HWY WEST, & SALMON RIVER HWYS.
YAMHILL COUNTY
Design Team Leader - Carol Cartwright
Designed By - Jerry Rosenblad
Drafted By - Jerry Rosenblad
ALIGNMENT
SHEET NO. 5
REGISTERED PROFESSIONAL ENGINEER
19,28
OREGON
JULY 15, 1997
JERRY A. ROSENBLAD
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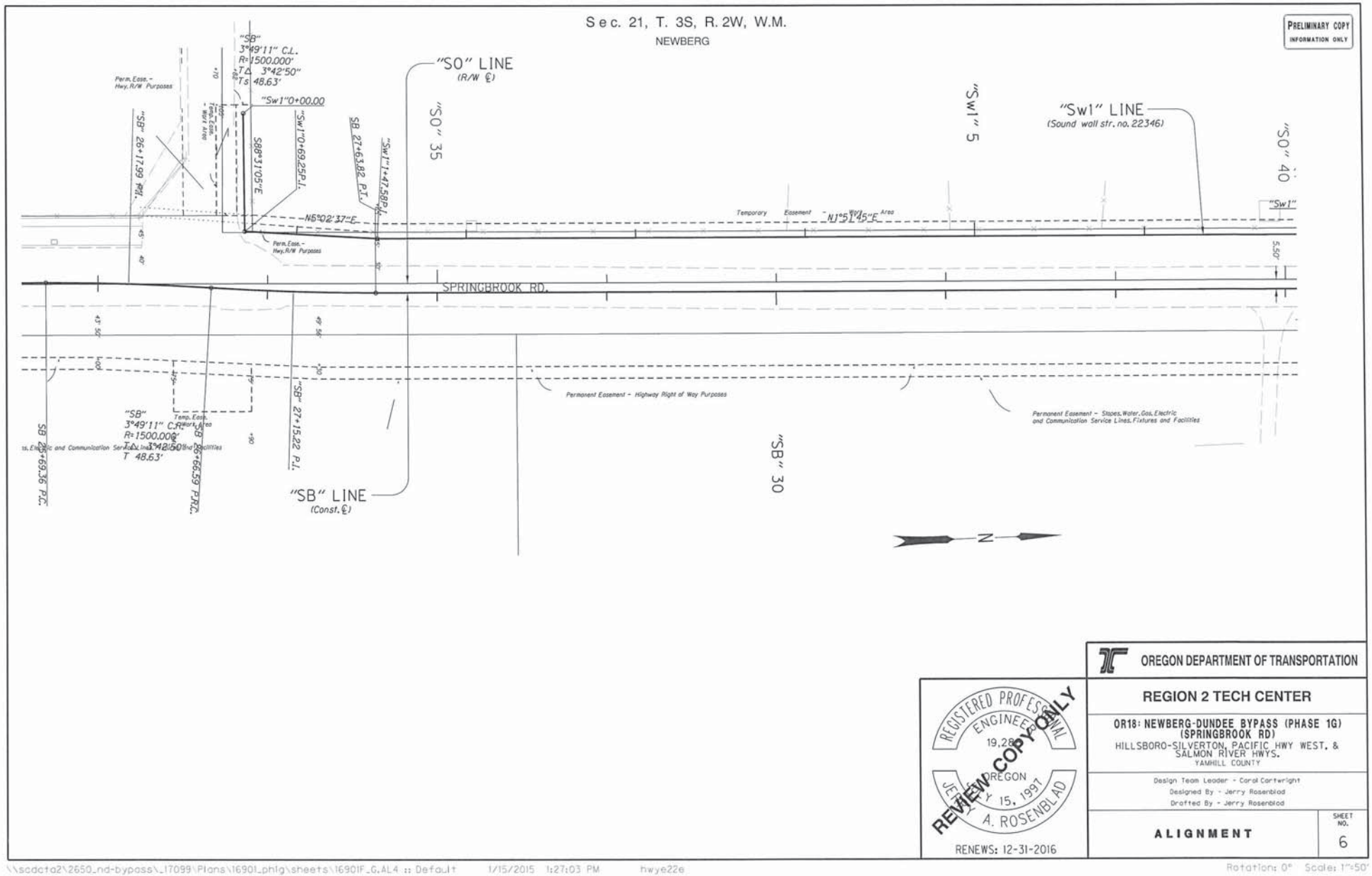
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NEWBERG
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"SO" 35
"Sw1" 5
"SO" 40
"Sw1"
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"Sw1" 0+69.25 P.I.
SB 27+63.82 P.I.
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Perm. Ease. - Hwy. R/W Purposes
SPRINGBROOK RD.
Permanent Easement - Highway Right of Way Purposes
Permanent Easement - Slopes, Water, Gas, Electric and Communication Service Lines, Fixtures and Facilities
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SB 26+69.36 P.C.
SB 26+66.59 P.R.C.
"SB" LINE (Const. ℄)
"SB" 30
N
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG-DUNDEE BYPASS (PHASE 1G) (SPRINGBROOK RD)
HILLSBORO-SILVERTON, PACIFIC HWY WEST. & SALMON RIVER HWYS.
YAMHILL COUNTY
Design Team Leader - Carol Cartwright
Designed By - Jerry Rosenblad
Drafted By - Jerry Rosenblad
ALIGNMENT
SHEET NO. 6
REGISTERED PROFESSIONAL ENGINEER
19,28
OREGON
JULY 15, 1997
JERRY A. ROSENBLAD
RENEWS: 12-31-2016
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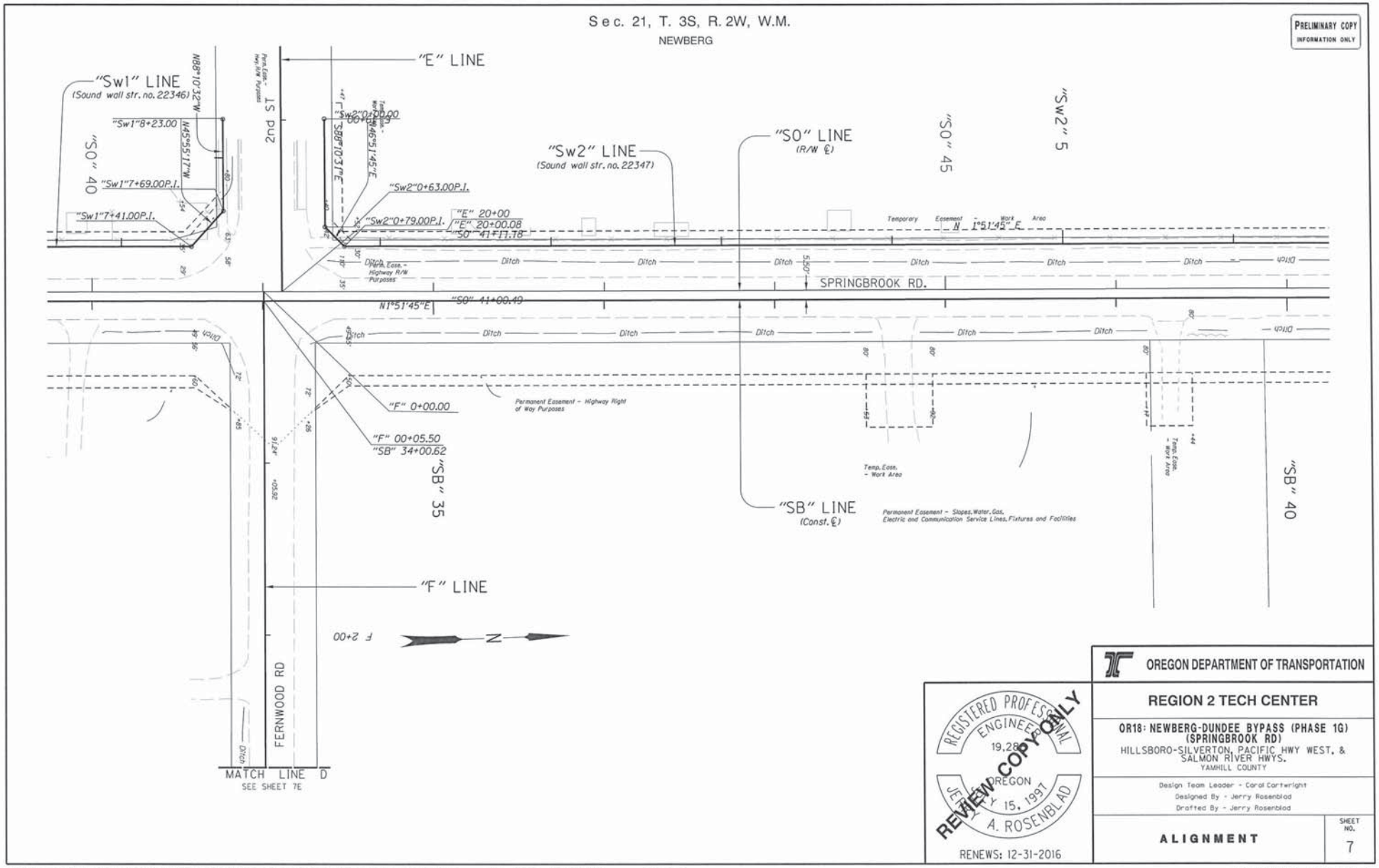
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NEWBERG
PRELIMINARY COPY
INFORMATION ONLY
"E" LINE
"Sw1" LINE
(Sound wall str. no. 22346)
"Sw2" LINE
(Sound wall str. no. 22347)
"SO" LINE
(R/W ℄)
"SB" LINE
(Const. ℄)
"F" LINE
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"SB" 35
"SB" 40
SPRINGBROOK RD.
2nd ST
FERNWOOD RD
Ditch
Temporary Easement - Work Area
Permanent Easement - Highway Right of Way Purposes
Permanent Easement - Slopes, Water, Gas, Electric and Communication Service Lines, Fixtures and Facilities
Temp. Ease. - Work Area
MATCH LINE D
SEE SHEET 7E
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG-DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
HILLSBORO-SILVERTON, PACIFIC HWY WEST, & SALMON RIVER HWYS.
YAMHILL COUNTY
Design Team Leader - Carol Cartwright
Designed By - Jerry Rosenblad
Drafted By - Jerry Rosenblad
ALIGNMENT
SHEET NO. 7
REGISTERED PROFESSIONAL ENGINEER
19,28
OREGON
JULY 15, 1997
JERRY A. ROSENBLAD
RENEWS: 12-31-2016
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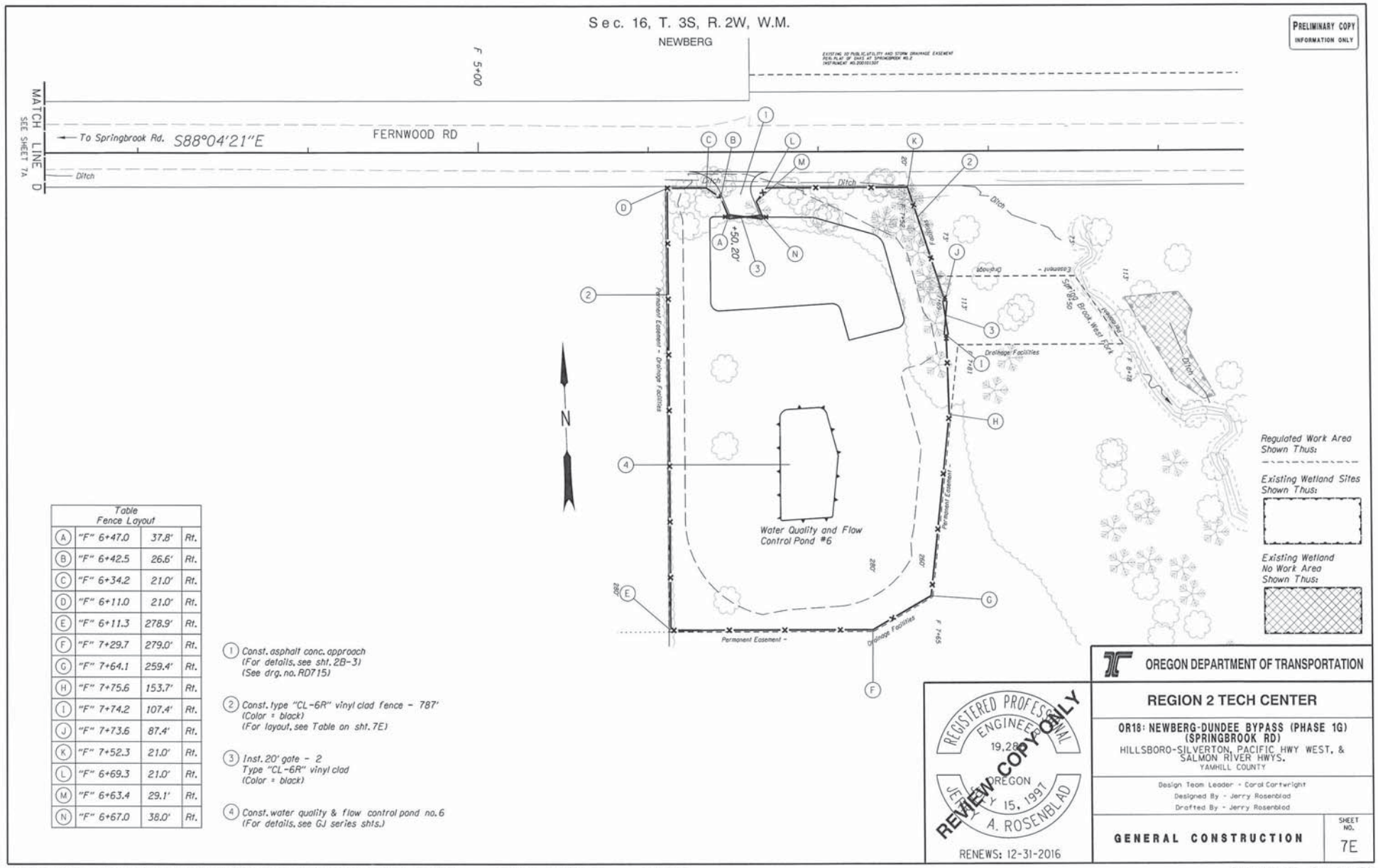


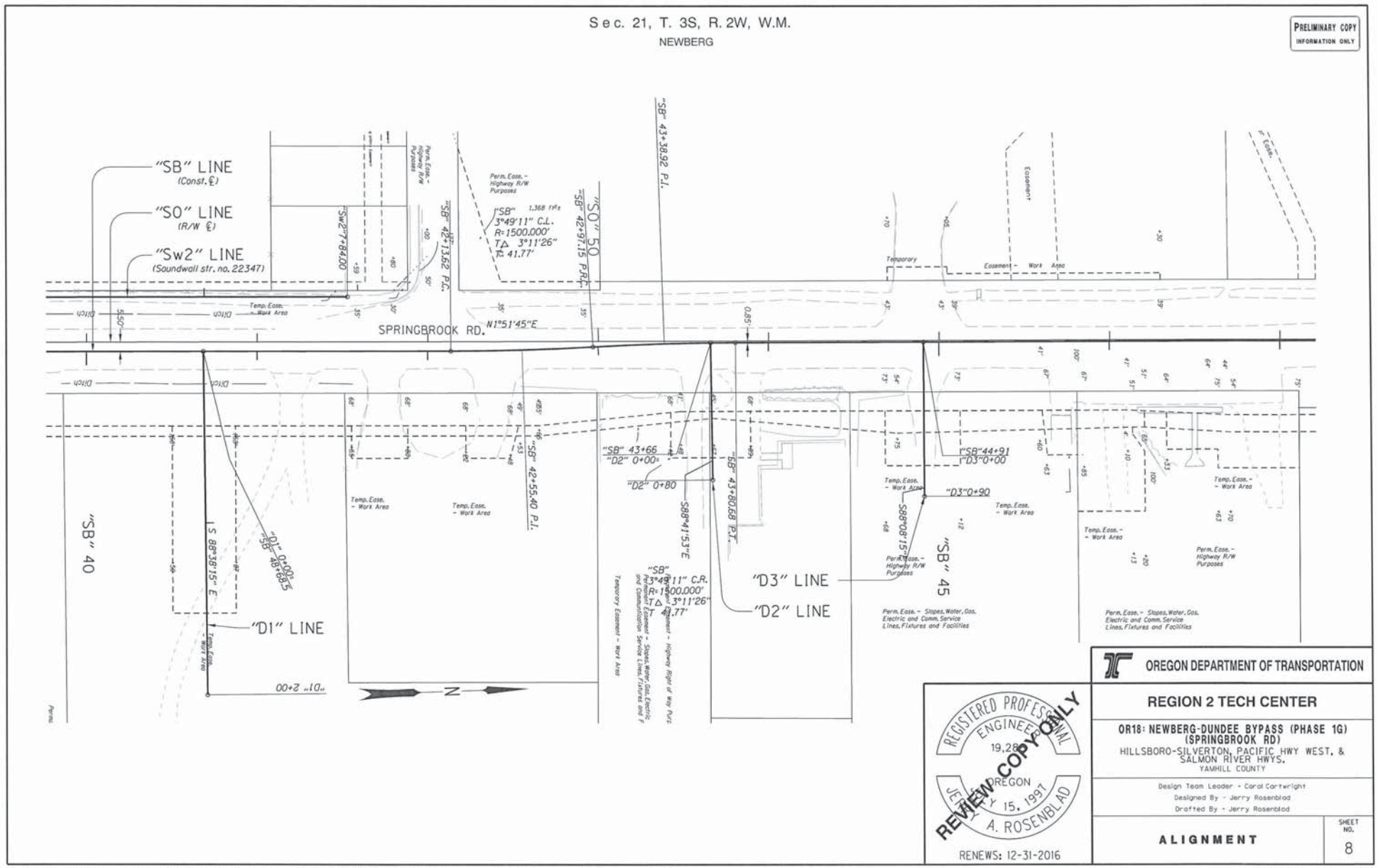
Table Fence Layout			
(A)	"F" 6+47.0	37.8'	Rt.
(B)	"F" 6+42.5	26.6'	Rt.
(C)	"F" 6+34.2	21.0'	Rt.
(D)	"F" 6+11.0	21.0'	Rt.
(E)	"F" 6+11.3	278.9'	Rt.
(F)	"F" 7+29.7	279.0'	Rt.
(G)	"F" 7+64.1	259.4'	Rt.
(H)	"F" 7+75.6	153.7'	Rt.
(I)	"F" 7+74.2	107.4'	Rt.
(J)	"F" 7+73.6	87.4'	Rt.
(K)	"F" 7+52.3	21.0'	Rt.
(L)	"F" 6+69.3	21.0'	Rt.
(M)	"F" 6+63.4	29.1'	Rt.
(N)	"F" 6+67.0	38.0'	Rt.

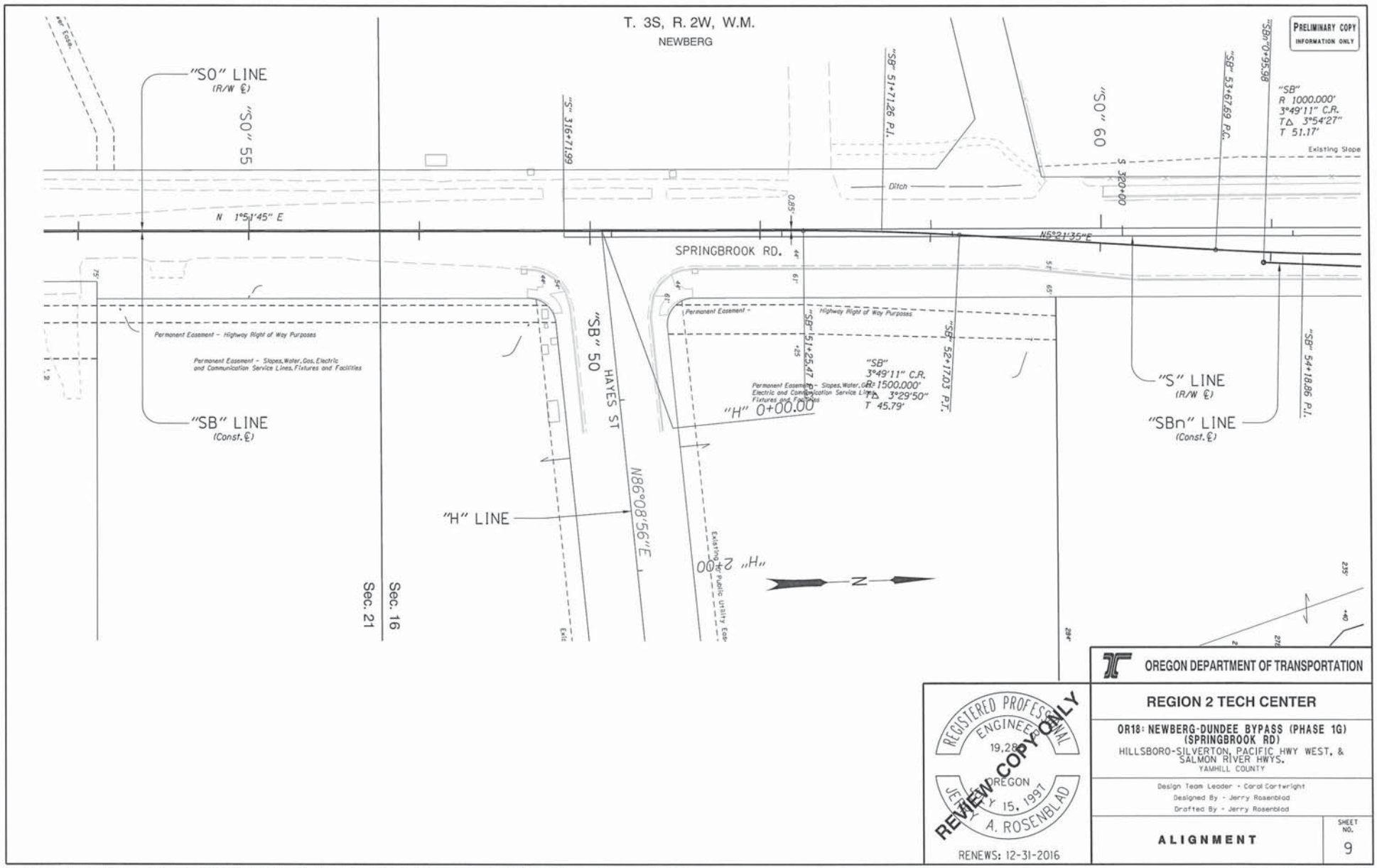
(1) Const. asphalt conc. approach (For details, see sht. 2B-3) (See drg. no. RD715)

(2) Const. type "CL-6R" vinyl clad fence - 787' (Color = black) (For layout, see Table on sht. 7E)

(3) Inst. 20' gate - 2 Type "CL-6R" vinyl clad (Color = black)

(4) Const. water quality & flow control pond no. 6 (For details, see GJ series shts.)


Sec. 21, T. 3S, R. 2W, W.M.
NEWBERG
PRELIMINARY COPY
INFORMATION ONLY
"SB" LINE
(Const. ℄)
"SO" LINE
(R/W ℄)
"Sw2" LINE
(Soundwall str. no. 22347)
SPRINGBROOK RD.
N1°51'45"E
"SB" 43+38.92 P.I.
"SO" 50
"SB" 42+97.15 P.R.C.
"SB" 42+13.62 P.C.
"Sw2"7+84.00
"SB" 1,368 ft±
3°49'11" C.L.
R=1500.000'
T△ 3°11'26"
℄ 41.77'
Perm. Ease. - Highway R/W Purposes
Temporary Easement - Work Area
Temp. Ease. - Work Area
"SB" 43+66
"D2" 0+00
"D2" 0+80
"SB" 43+80.68 P.I.
"SB" 42+55.40 P.I.
"SB" 44+91
"D3" 0+00
"D3" 0+90
S88°41'53"E
S88°08'15"E
"SB" 40
"SB" 45
"D3" LINE
"D2" LINE
"D1" LINE
S 88°38'15" E
"D1" 0+00
"SB" 48+68.5
"D1" 2+00
Perm. Ease. - Slopes, Water, Gas, Electric and Comm. Service Lines, Fixtures and Facilities
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG-DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
HILLSBORO-SILVERTON, PACIFIC HWY WEST, & SALMON RIVER HWYS.
YAMHILL COUNTY
Design Team Leader - Carol Cartwright
Designed By - Jerry Rosenblad
Drafted By - Jerry Rosenblad
ALIGNMENT
SHEET NO. 8
REGISTERED PROFESSIONAL ENGINEER
19,28
OREGON
JULY 15, 1997
JERRY A. ROSENBLAD
RENEWS: 12-31-2016
REVIEW COPY ONLY
\\scdcta2\2650_nd-bypass_17099\Plans\16901_phlg\sheets\16901F_G.AL5 :: Default 1/15/2015 1:27:22 PM hwye22e
Rotation: 0° Scale: 1"=50'


T. 3S, R. 2W, W.M.
NEWBERG
PRELIMINARY COPY
INFORMATION ONLY
"SO" LINE
(R/W ℄)
"SO" 55
"SO" 60
"S" 316+71.69
"SB" 51+71.26 P.I.
"SB" 53+67.69 P.C.
"SB" 0+95.98
"SB"
R 1000.000'
3°49'11" C.R.
TΔ 3°54'27"
T 51.17'
Existing Slope
Ditch
S 320+00
N 1°51'45" E
N5°21'35"E
SPRINGBROOK RD.
Permanent Easement - Highway Right of Way Purposes
Permanent Easement - Slopes, Water, Gas, Electric and Communication Service Lines, Fixtures and Facilities
"SB" LINE
(Const.℄)
"SB" 50
HAYES ST
"SB" 51+25.47
"SB"
3°49'11" C.R.
R 1500.000'
TΔ 3°29'50"
T 45.79'
"SB" 52+17.03 P.T.
"H" 0+00.00
"S" LINE
(R/W ℄)
"SBn" LINE
(Const.℄)
"SB" 54+18.86 P.I.
"H" LINE
N86°08'56"E
"H" 2+00
Existing 12' Public Utility Easement
Sec. 21
Sec. 16
N
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG-DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
HILLSBORO-SILVERTON, PACIFIC HWY WEST, & SALMON RIVER HWYS.
YAMHILL COUNTY
Design Team Leader - Carol Cartwright
Designed By - Jerry Rosenblad
Drafted By - Jerry Rosenblad
ALIGNMENT
SHEET NO. 9
REGISTERED PROFESSIONAL ENGINEER
19,28
OREGON
JULY 15, 1997
JERRY A. ROSENBLAD
RENEWS: 12-31-2016
REVIEW COPY ONLY
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hwye22e
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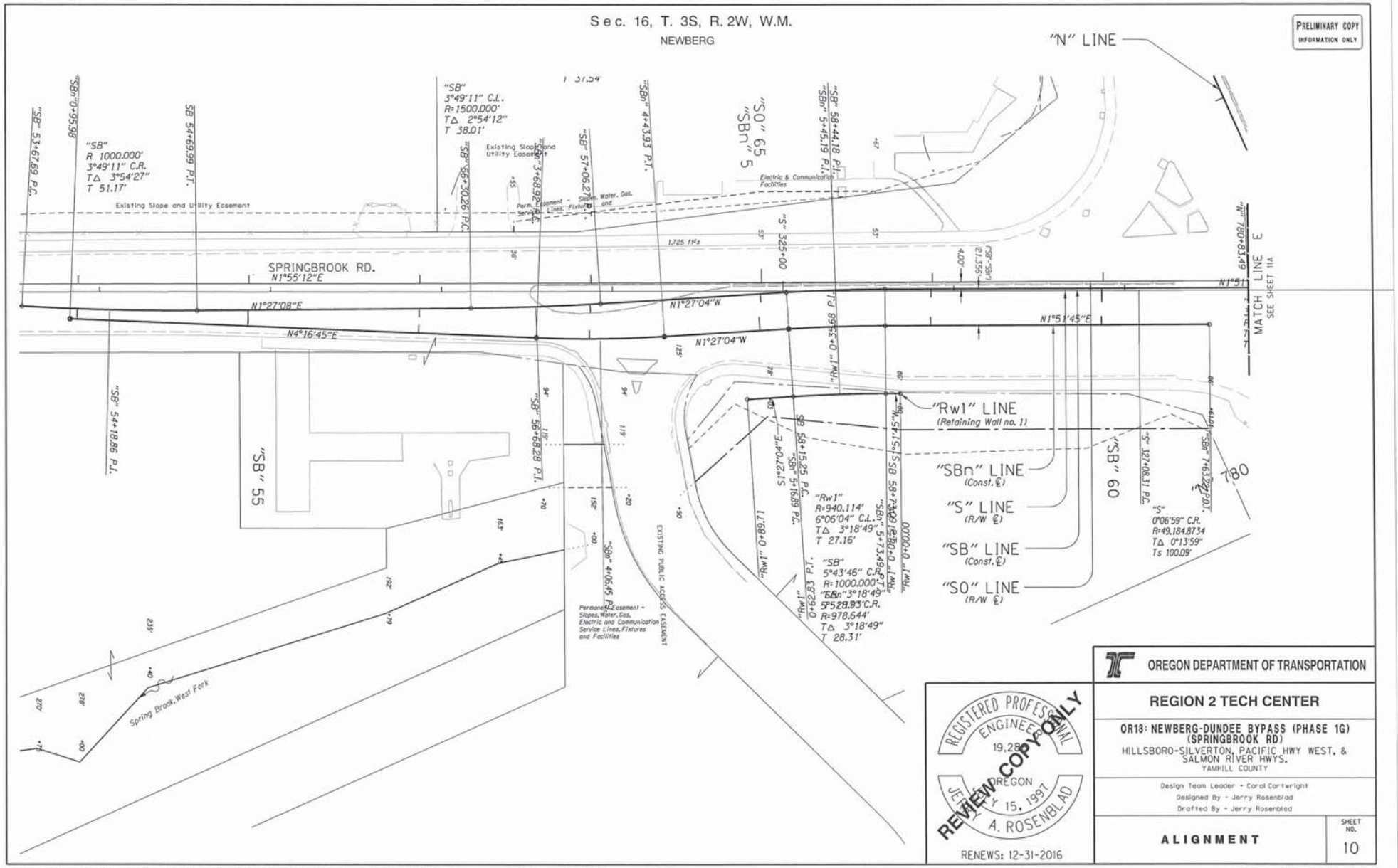
Sec. 16, T. 3S, R. 2W, W.M.
NEWBERG
PRELIMINARY COPY
INFORMATION ONLY
"N" LINE
"SB" 3°49'11" C.L. R=1500.000' TΔ 2°54'12" T 38.01'
"SB" R 1000.000' 3°49'11" C.R. TΔ 3°54'27" T 51.17'
Existing Slope and Utility Easement
SPRINGBROOK RD.
N1°55'12"E
N1°27'08"E
N4°16'45"E
N1°27'04"W
N1°51'45"E
"Rw1" LINE (Retaining Wall no. 1)
"SBn" LINE (Const. ℄)
"S" LINE (R/W ℄)
"SB" LINE (Const. ℄)
"SO" LINE (R/W ℄)
"Rw1" R=940.114' 6°06'04" C.L. TΔ 3°18'49" T 27.16'
"SB" 5°43'46" C.R. R=1000.000' "SBn" 3°18'49" 5°28'33" C.R. R=978.644' TΔ 3°18'49" T 28.31'
"S" 0°06'59" C.R. R=49,184.8734 TΔ 0°13'59" Ts 100.09'
MATCH LINE E SEE SHEET 11A
EXISTING PUBLIC ACCESS EASEMENT
Permanent Easement - Slopes, Water, Gas, Electric and Communication Service Lines, Fixtures and Facilities
Spring Brook, West Fork
REGISTERED PROFESSIONAL ENGINEER 19,28 OREGON JULY 15, 1997 JERRY A. ROSENBLAD
RENEWS: 12-31-2016
REVIEW COPY ONLY
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG-DUNDEE BYPASS (PHASE 1G) (SPRINGBROOK RD)
HILLSBORO-SILVERTON, PACIFIC HWY WEST, & SALMON RIVER HWYS.
YAMHILL COUNTY
Design Team Leader - Carol Cartwright
Designed By - Jerry Rosenblad
Drafted By - Jerry Rosenblad
ALIGNMENT
SHEET NO. 10
\\scdata2\2650_nd-bypass_17099\Plans\16901_phlg\sheets\16901F_G.AL& :: Default 1/15/2015 1:27:39 PM hwye22e
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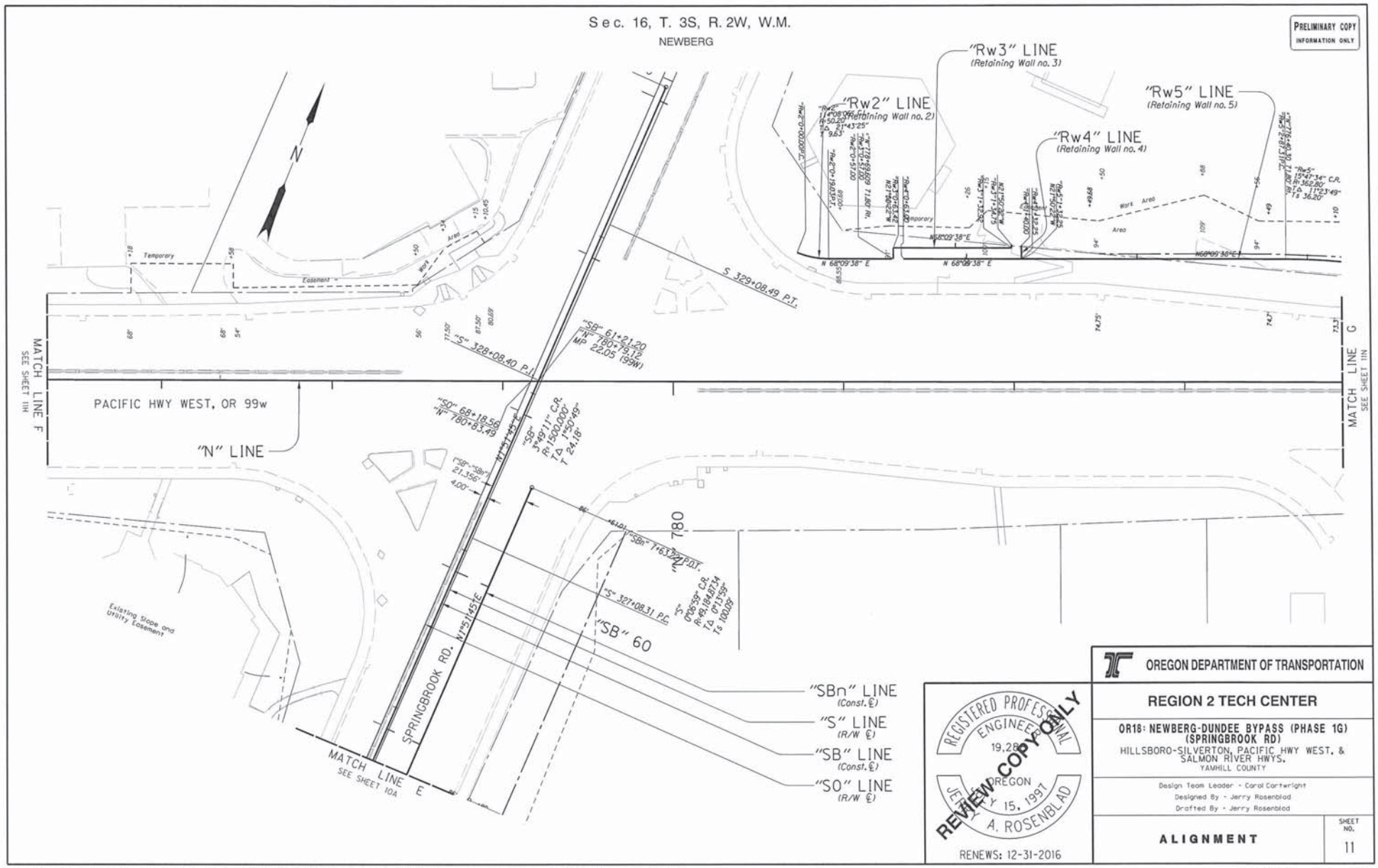
Sec. 16, T. 3S, R. 2W, W.M.
NEWBERG
PRELIMINARY COPY
INFORMATION ONLY
"Rw3" LINE
(Retaining Wall no. 3)
"Rw2" LINE
(Retaining Wall no. 2)
"Rw5" LINE
(Retaining Wall no. 5)
"Rw4" LINE
(Retaining Wall no. 4)
N
S 329+08.49 P.T.
"S" 328+08.40 P.T.
"SB" 61+21.20
"N" 780+76.12
MP 22.05 (99W)
PACIFIC HWY WEST, OR 99w
"N" LINE
MATCH LINE F
SEE SHEET 11H
MATCH LINE G
SEE SHEET 11N
"SB" 3°49'11" C.R.
R=1500.000'
Δ 1°30'49"
T 24.18'
"SBn" 68+18.56
"N" 780+83.49
"SBn" 21.356'
4.00'
"SBn" 716+22.77 P.O.T.
"S" 327+08.31 P.C.
"S" 6°06'59" C.R.
R=949.184.8734
Δ 0°13'59"
Ts 100.09'
780
"SB" 60
SPRINGBROOK RD.
MATCH LINE E
SEE SHEET 10A
Existing Slope and Utility Easement
"SBn" LINE
(Const.℄)
"S" LINE
(R/W ℄)
"SB" LINE
(Const.℄)
"SO" LINE
(R/W ℄)
REGISTERED PROFESSIONAL ENGINEER
19,28
OREGON
JULY 15, 1997
JERRY A. ROSENBLAD
RENEWS: 12-31-2016
REVIEW COPY ONLY
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG-DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
HILLSBORO-SILVERTON, PACIFIC HWY WEST, &
SALMON RIVER HWYS.
YAMHILL COUNTY
Design Team Leader - Carol Cartwright
Designed By - Jerry Rosenblad
Drafted By - Jerry Rosenblad
ALIGNMENT
SHEET NO. 11
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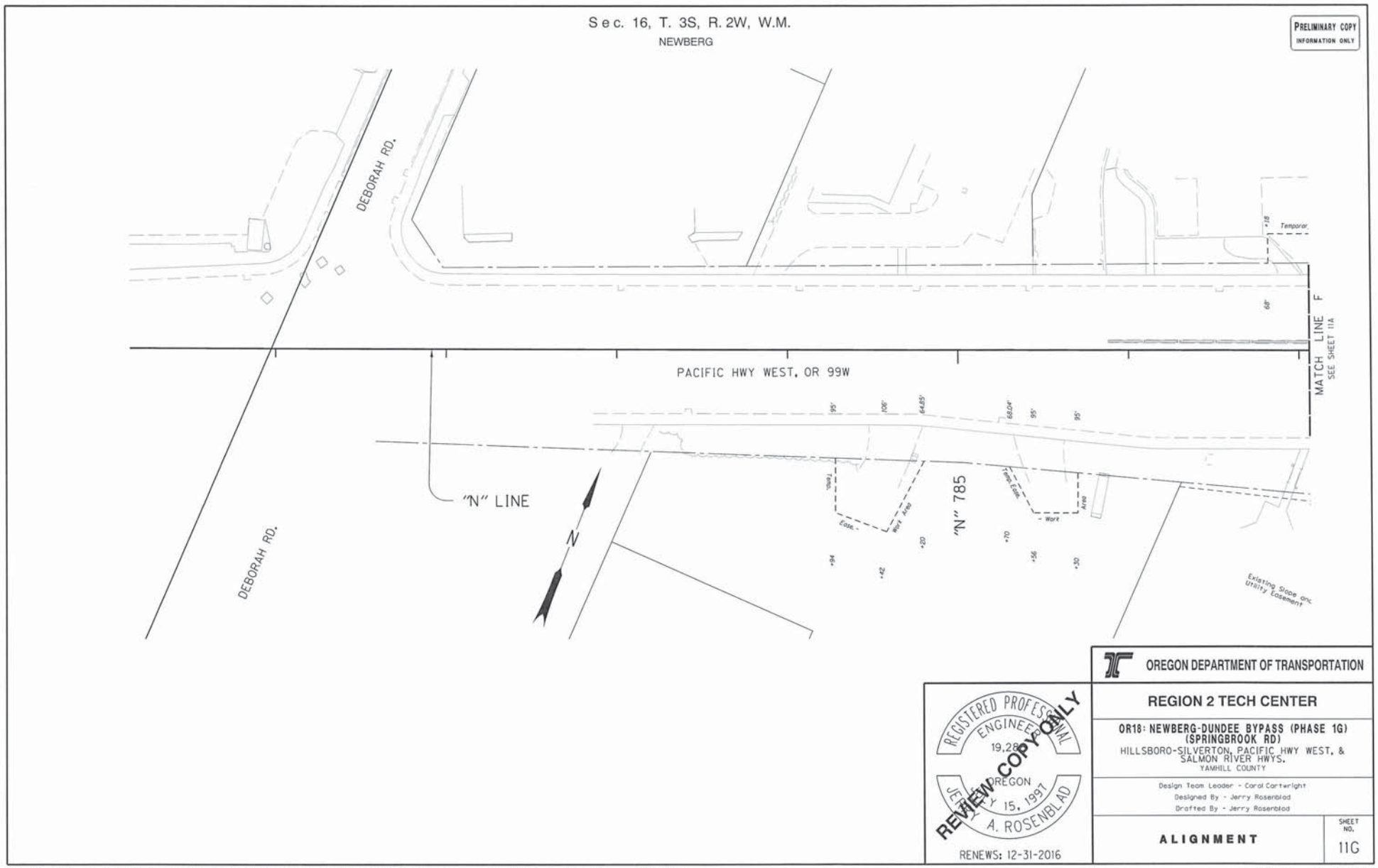
Sec. 16, T. 3S, R. 2W, W.M.
NEWBERG
PRELIMINARY COPY
INFORMATION ONLY
DEBORAH RD.
PACIFIC HWY WEST, OR 99W
MATCH LINE F
SEE SHEET 11A
"N" LINE
"N" 785
DEBORAH RD.
Temporar
Existing Slope and Utility Easement
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG-DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
HILLSBORO-SILVERTON, PACIFIC HWY WEST, &
SALMON RIVER HWYS.
YAMHILL COUNTY
Design Team Leader - Carol Cartwright
Designed By - Jerry Rosenblad
Drafted By - Jerry Rosenblad
ALIGNMENT
SHEET NO.
11G
REGISTERED PROFESSIONAL ENGINEER
19,28
OREGON
JULY 15, 1997
JERRY A. ROSENBLAD
REVIEW COPY ONLY
RENEWS: 12-31-2016
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1/15/2015 1:28:07 PM
hwye22e
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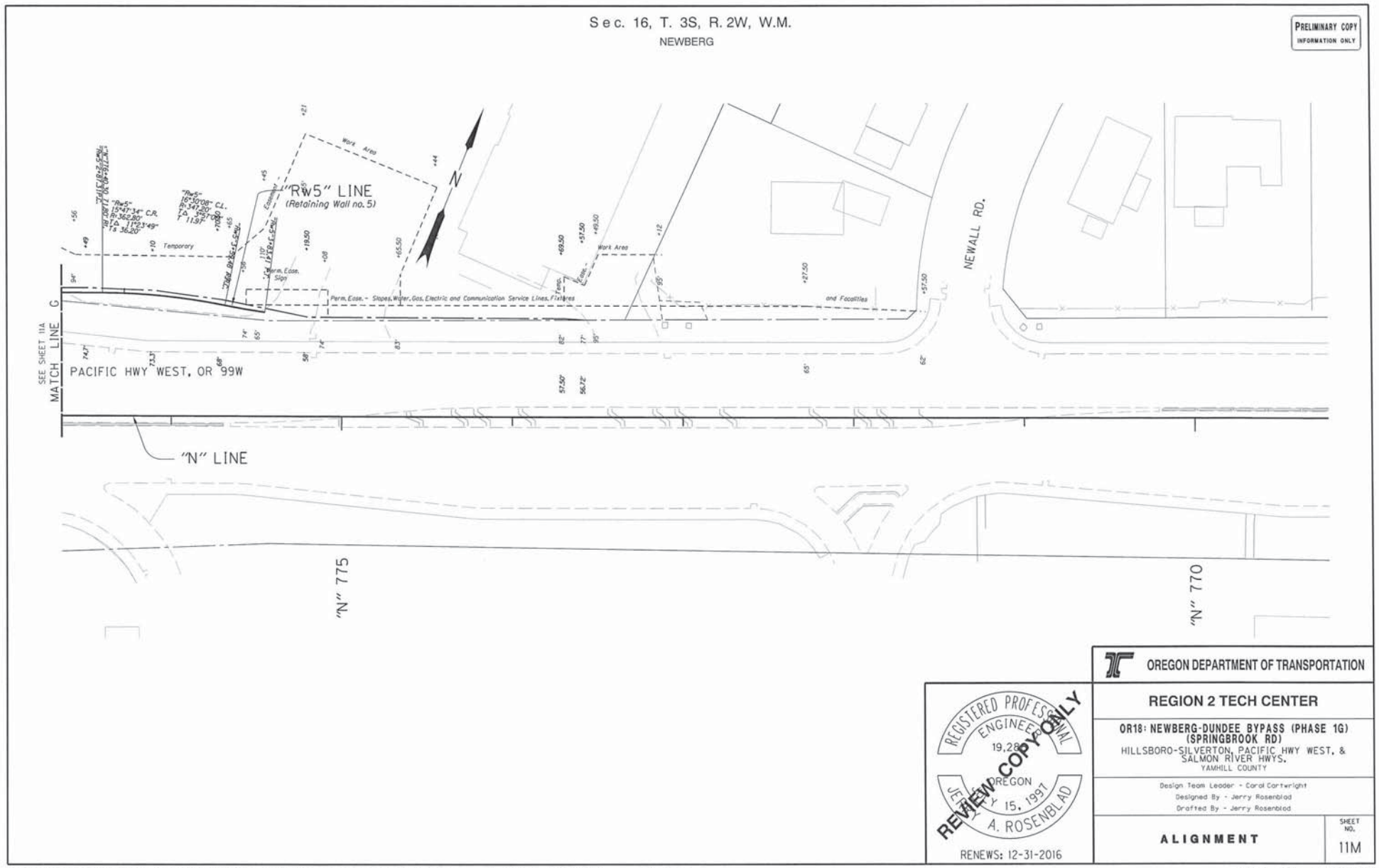
Sec. 16, T. 3S, R. 2W, W.M.
NEWBERG
PRELIMINARY COPY
INFORMATION ONLY
"Rw5" LINE
(Retaining Wall no. 5)
Work Area
Temporary
Perm. Ease. - Slopes, Water, Gas, Electric and Communication Service Lines, Fixtures and Facilities
Work Area
NEWALL RD.
SEE SHEET 11A
MATCH LINE G
PACIFIC HWY WEST, OR 99W
"N" LINE
"N" 775
"N" 770
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG-DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
HILLSBORO-SILVERTON, PACIFIC HWY WEST, & SALMON RIVER HWYS.
YAMHILL COUNTY
Design Team Leader - Carol Cartwright
Designed By - Jerry Rosenblad
Drafted By - Jerry Rosenblad
ALIGNMENT
SHEET NO.
11M
REGISTERED PROFESSIONAL ENGINEER
19,280
OREGON
JULY 15, 1997
JERRY A. ROSENBLAD
RENEWS: 12-31-2016
REVIEW COPY ONLY
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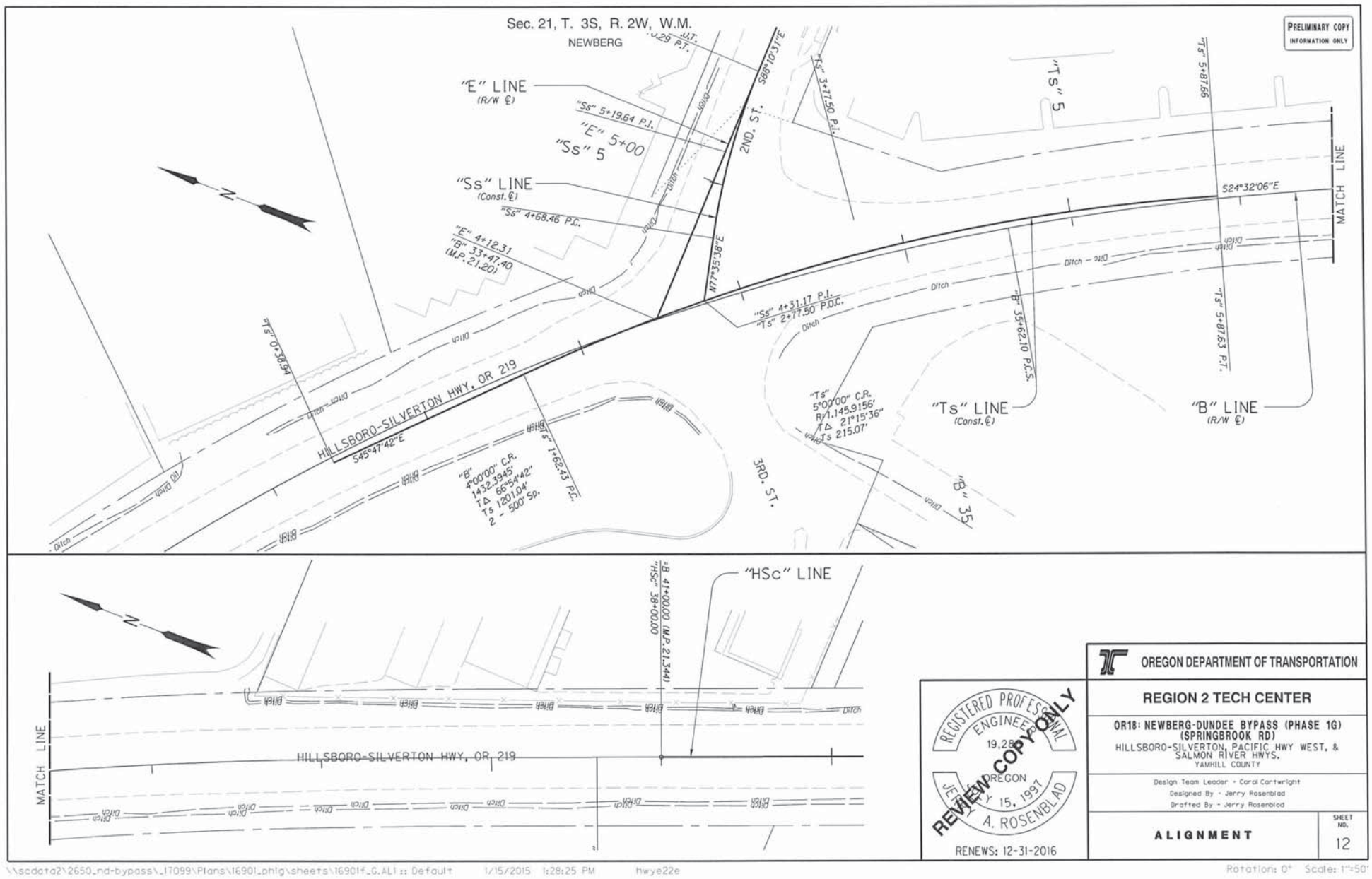
Sec. 21, T. 3S, R. 2W, W.M.
NEWBERG
PRELIMINARY COPY
INFORMATION ONLY
"E" LINE
(R/W ℄)
"Ss" LINE
(Const.℄)
"Ts" LINE
(Const.℄)
"B" LINE
(R/W ℄)
"HSc" LINE
2ND. ST.
3RD. ST.
HILLSBORO-SILVERTON HWY, OR 219
MATCH LINE
"E" 5+00
"Ss" 5
"Ts" 5
"Ss" 5+19.64 P.I.
"Ss" 4+68.46 P.C.
"E" 4+12.31
"B" 33+47.40
(M.P. 21.201)
"Ts" 3+77.50 P.I.
"Ts" 5+87.56
"Ts" 5+87.63 P.I.
"Ts" 0+38.94
"Ss" 4+31.17 P.I.
"Ts" 2+77.50 P.O.C.
"B" 35+62.10 P.C.C.
"Ts" 1+62.43 P.C.
"Ts"
5°00'00" C.R.
R=1,145.9156'
Δ 21°15'36"
Ts 215.07'
"B"
4°00'00" C.R.
1432.3945'
Δ 66°54'42"
Ts 1201.04'
2 - 500' Sp.
S86°10'31"E
N7°35'38"E
S45°47'42"E
S24°32'06"E
"HSc" 38+00.00
"B" 41+00.00 (M.P. 21.344)
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG-DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
HILLSBORO-SILVERTON, PACIFIC HWY WEST, & SALMON RIVER HWYS.
YAMHILL COUNTY
Design Team Leader - Carol Cartwright
Designed By - Jerry Rosenblad
Drafted By - Jerry Rosenblad
ALIGNMENT
SHEET NO. 12
REGISTERED PROFESSIONAL ENGINEER
19,280
OREGON
JERRY A. ROSENBLAD
JULY 15, 1997
RENEWS: 12-31-2016
REVIEW COPY ONLY
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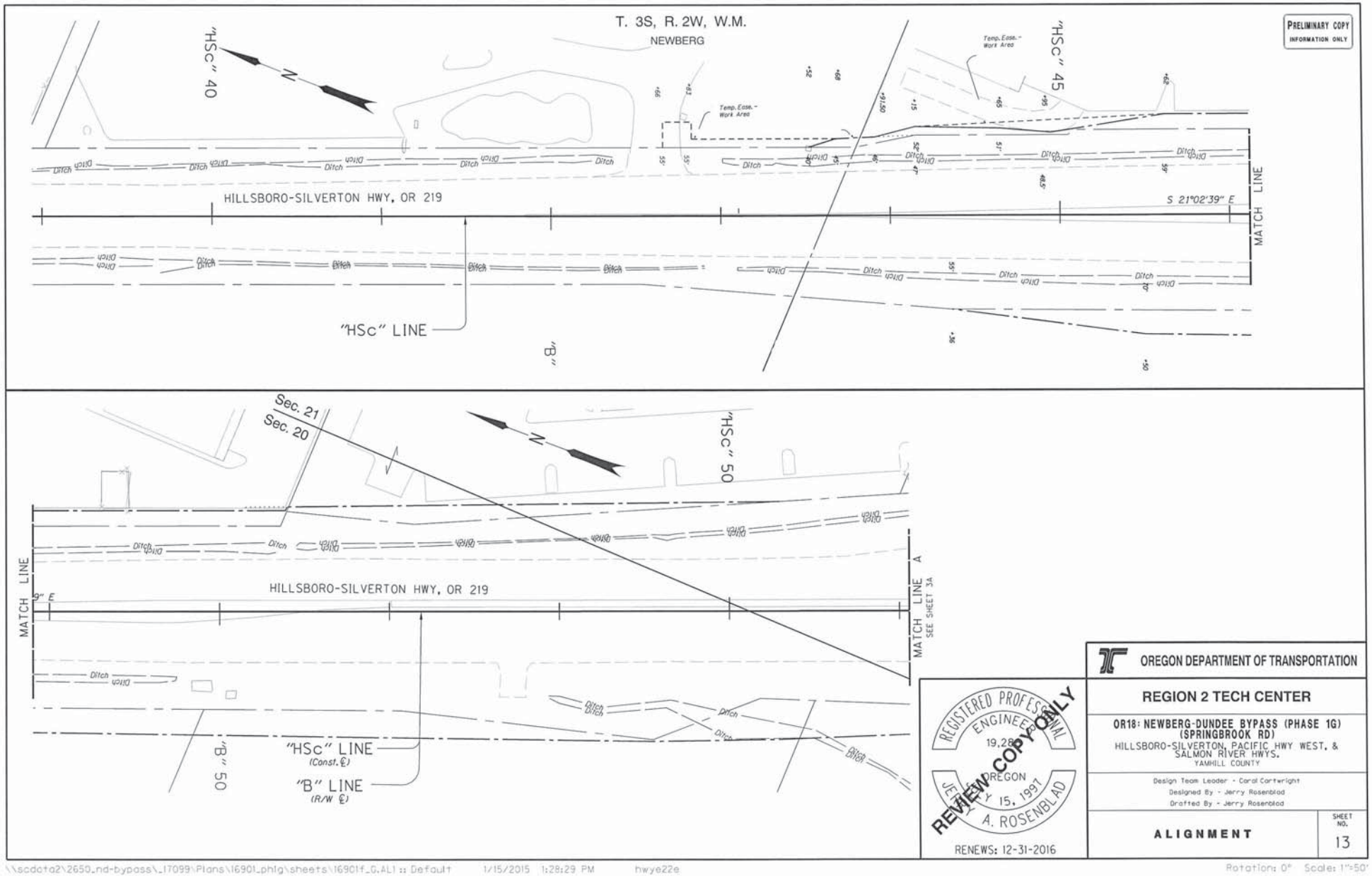
T. 3S, R. 2W, W.M.
NEWBERG
PRELIMINARY COPY
INFORMATION ONLY
"HSc" 40
"HSc" 45
"HSc" 50
HILLSBORO-SILVERTON HWY, OR 219
S 21°02'39" E
MATCH LINE
"HSc" LINE
"B" LINE
"B" 50
Sec. 21
Sec. 20
Temp. Ease. - Work Area
Ditch
SEE SHEET 3A
"HSc" LINE (Const.℄)
"B" LINE (R/W ℄)
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG-DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
HILLSBORO-SILVERTON, PACIFIC HWY WEST, & SALMON RIVER HWYS.
YAMHILL COUNTY
Design Team Leader - Carol Cartwright
Designed By - Jerry Rosenblad
Drafted By - Jerry Rosenblad
ALIGNMENT
SHEET NO. 13
REGISTERED PROFESSIONAL ENGINEER
19,28
OREGON
JULY 15, 1997
JERRY A. ROSENBLAD
RENEWS: 12-31-2016
REVIEW COPY ONLY
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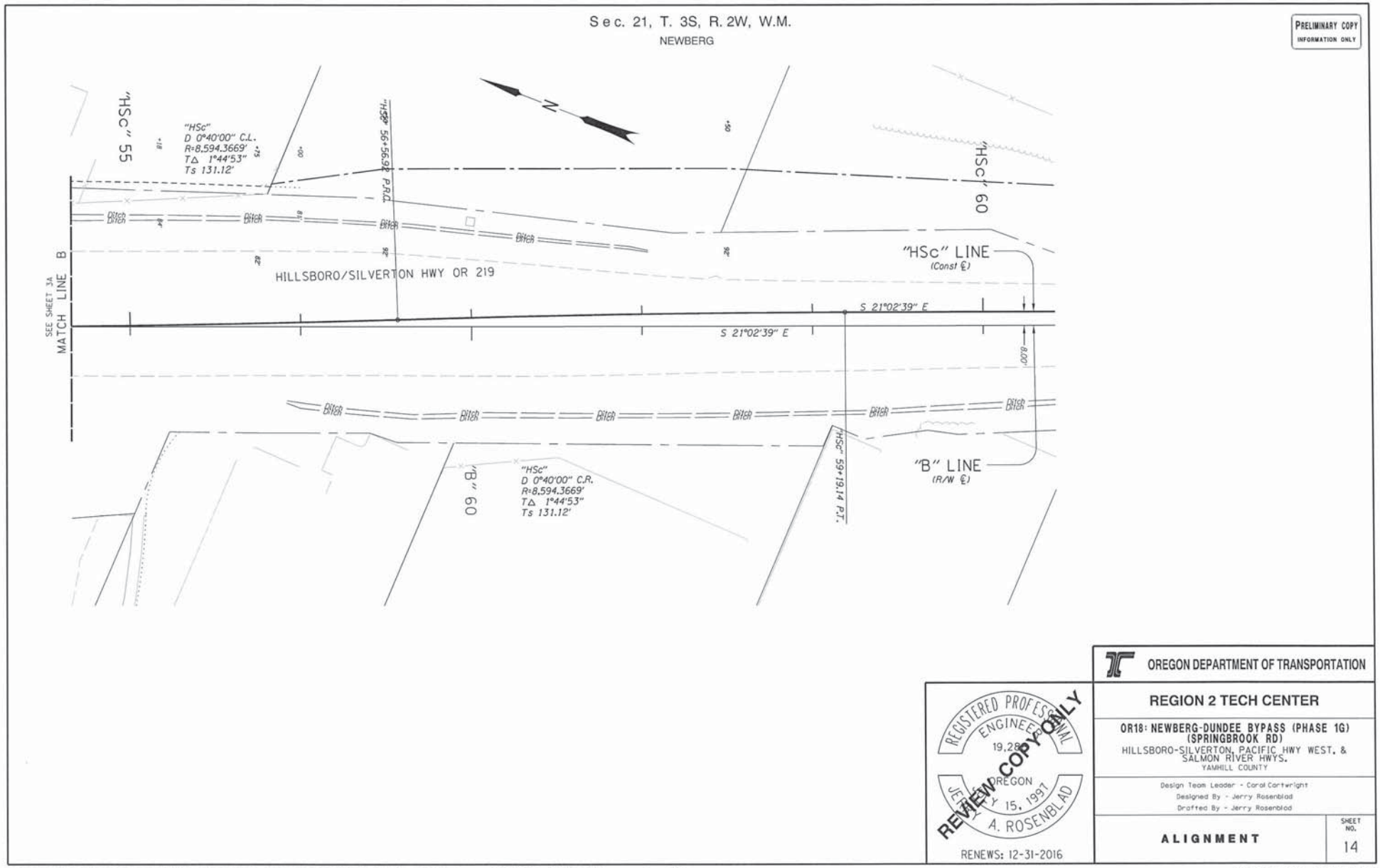
Rotation: 0° Scale: 1"=50'


Sec. 21, T. 3S, R. 2W, W.M.
NEWBERG
PRELIMINARY COPY
INFORMATION ONLY
"HSc" 55
"HSc"
D 0°40'00" C.L.
R=8,594.3669'
TΔ 1°44'53"
Ts 131.12'
"HSc" 56+56.92 P.R.C.
"HSc" 60
"HSc" LINE
(Const ℄)
HILLSBORO/SILVERTON HWY OR 219
SEE SHEET 3A
MATCH LINE B
S 21°02'39" E
S 21°02'39" E
Ditch
"B" 60
"HSc"
D 0°40'00" C.R.
R=8,594.3669'
TΔ 1°44'53"
Ts 131.12'
"HSc" 59+19.14 P.T.
"B" LINE
(R/W ℄)
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG-DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
HILLSBORO-SILVERTON, PACIFIC HWY WEST. & SALMON RIVER HWYS.
YAMHILL COUNTY
Design Team Leader - Carol Cartwright
Designed By - Jerry Rosenblad
Drafted By - Jerry Rosenblad
ALIGNMENT
SHEET NO. 14
REGISTERED PROFESSIONAL ENGINEER
19.28
OREGON
JULY 15, 1997
JERRY A. ROSENBLAD
RENEWS: 12-31-2016
REVIEW COPY ONLY
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Sec. 21, T. 3S, R. 2W, W.M.
NEWBERG

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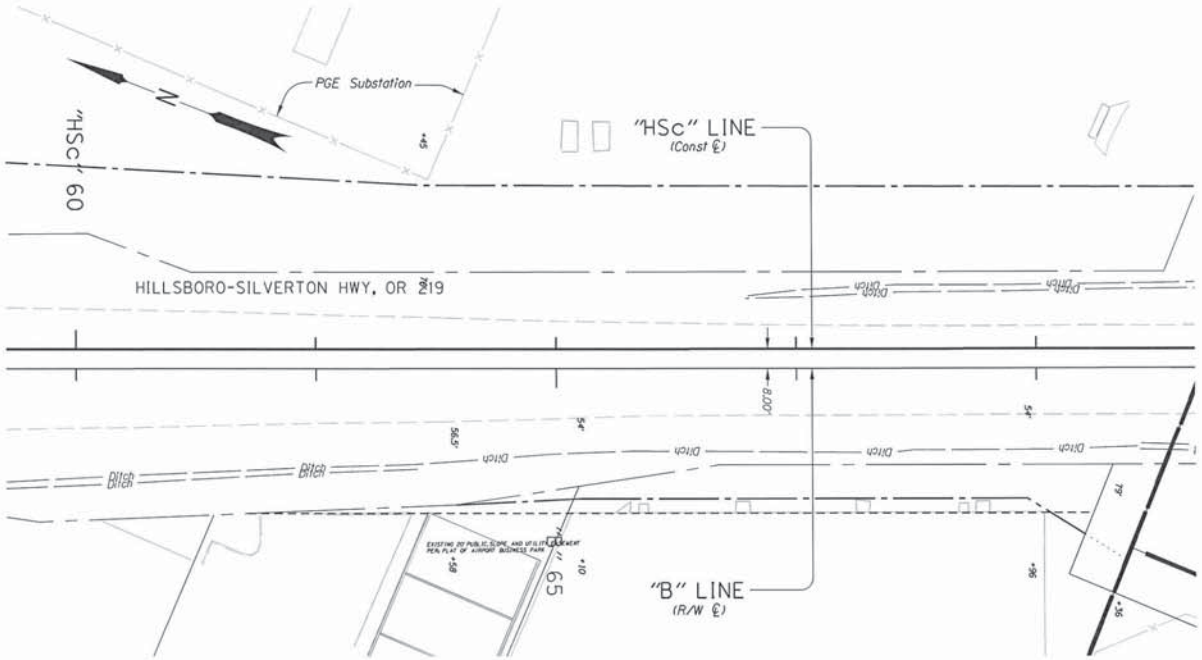
INFORMATION ONLY



OREGON DEPARTMENT OF TRANSPORTATION

REGION 2 TECH CENTER

OR18: NEWBERG-DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
HILLSBORO-SILVERTON, PACIFIC HWY WEST, & SALMON RIVER HWYS.
YAMHILL COUNTY

Design Team Leader - Carol Cartwright
Designed By - Jerry Rosenblad
Drafted By - Jerry Rosenblad

ALIGNMENT

SHEET NO. 15

REGISTERED PROFESSIONAL ENGINEER
19,28
OREGON
JULY 15, 1997
JERRY A. ROSENBLAD
RENEWS: 12-31-2016

REVIEW COPY ONLY

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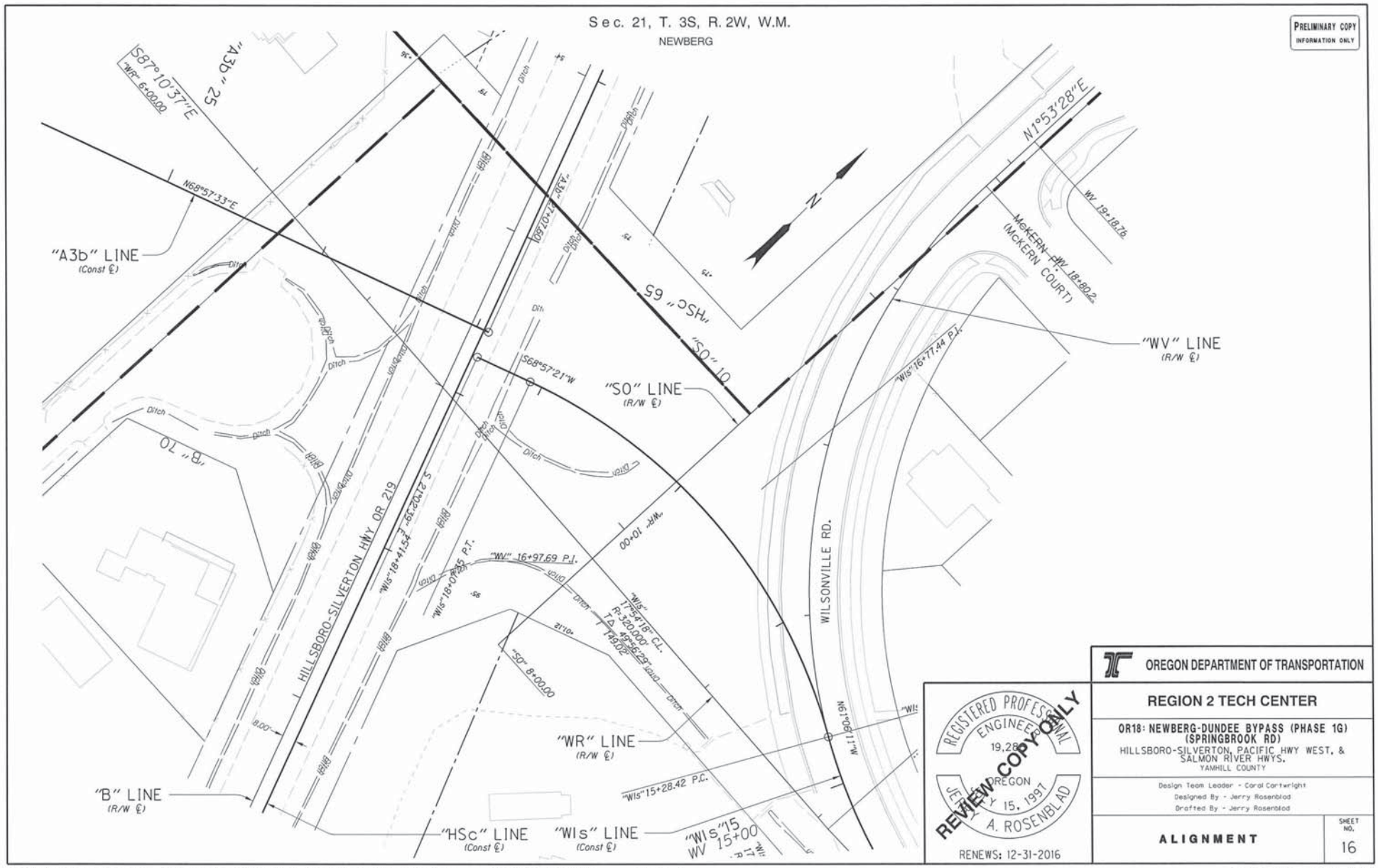
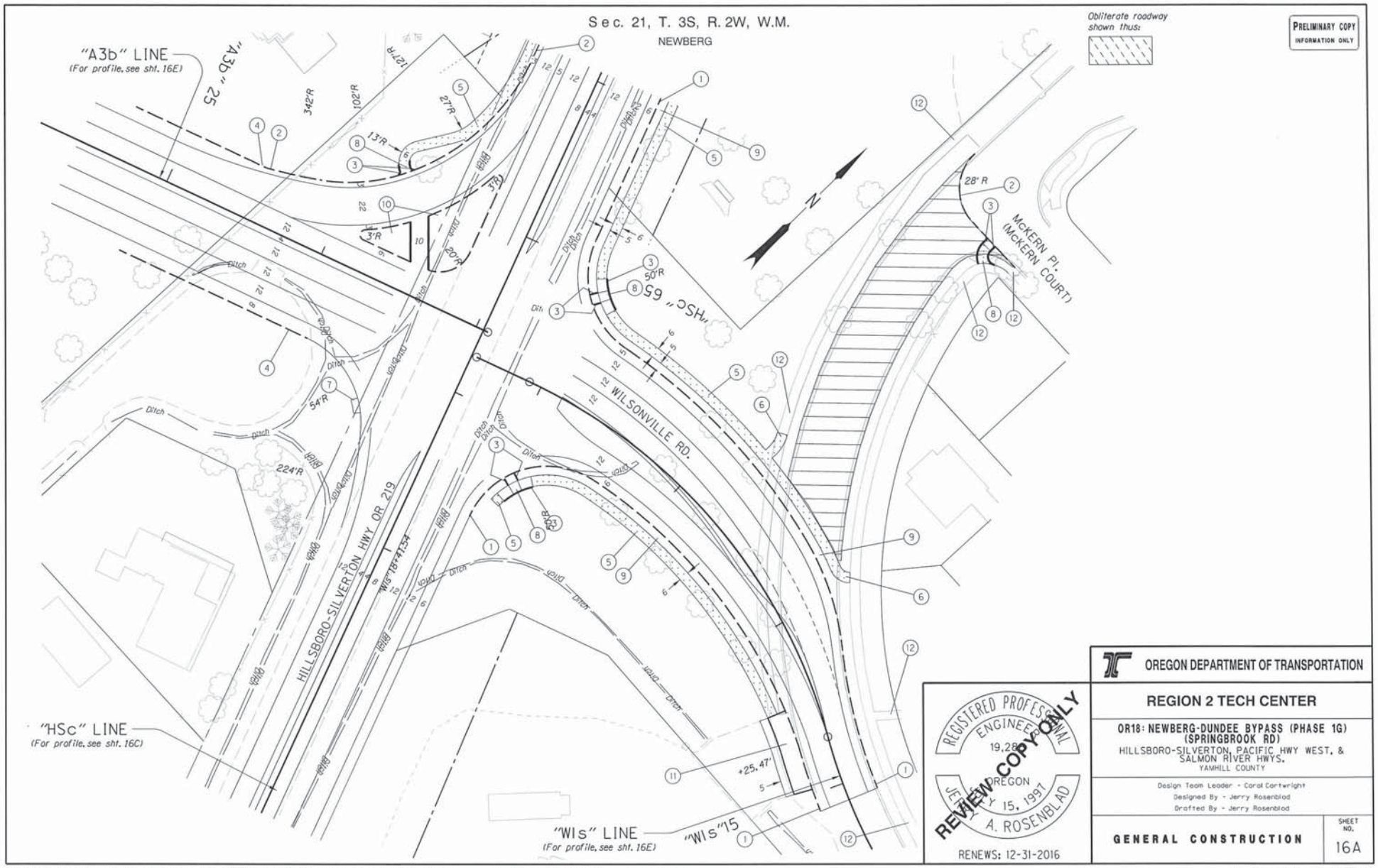
Rotation: 0° Scale: 1"=50'


Sec. 21, T. 3S, R. 2W, W.M.
NEWBERG
PRELIMINARY COPY
INFORMATION ONLY
"A3b" LINE
(Const ℄)
"B" LINE
(R/W ℄)
"HSc" LINE
(Const ℄)
"WIs" LINE
(Const ℄)
"WR" LINE
(R/W ℄)
"SO" LINE
(R/W ℄)
"WV" LINE
(R/W ℄)
HILLSBORO-SILVERTON HWY OR 219
WILSONVILLE RD.
McKERN HWY (McKERN COURT)
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG-DUNDEE BYPASS (PHASE 1G) (SPRINGBROOK RD)
HILLSBORO-SILVERTON, PACIFIC HWY WEST, & SALMON RIVER HWYS.
YAMHILL COUNTY
REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 15, 1997
JERRY A. ROSENBLAD
RENEWS: 12-31-2016
REVIEW COPY ONLY
Design Team Leader - Coral Cartwright
Designed By - Jerry Rosenblad
Drafted By - Jerry Rosenblad
ALIGNMENT
SHEET NO. 16


Sec. 21, T. 3S, R. 2W, W.M.
NEWBERG
Obliterate roadway shown thus:
PRELIMINARY COPY
INFORMATION ONLY
"A3b" LINE
(For profile, see sht. 16E)
"HSc" LINE
(For profile, see sht. 16C)
"WIs" LINE
(For profile, see sht. 16E)
HILLSBORO-SILVERTON HWY OR 219
WILSONVILLE RD.
McKERN PL. (McKERN COURT)
N
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG-DUNDEE BYPASS (PHASE 1G) (SPRINGBROOK RD)
HILLSBORO-SILVERTON, PACIFIC HWY WEST, & SALMON RIVER HWYS.
YAMHILL COUNTY
REGISTERED PROFESSIONAL ENGINEER
19,28
OREGON
JULY 15, 1997
JERRY A. ROSENBLAD
RENEWS: 12-31-2016
REVIEW COPY ONLY
Design Team Leader - Carol Cartwright
Designed By - Jerry Rosenblad
Drafted By - Jerry Rosenblad
GENERAL CONSTRUCTION
SHEET NO. 16A
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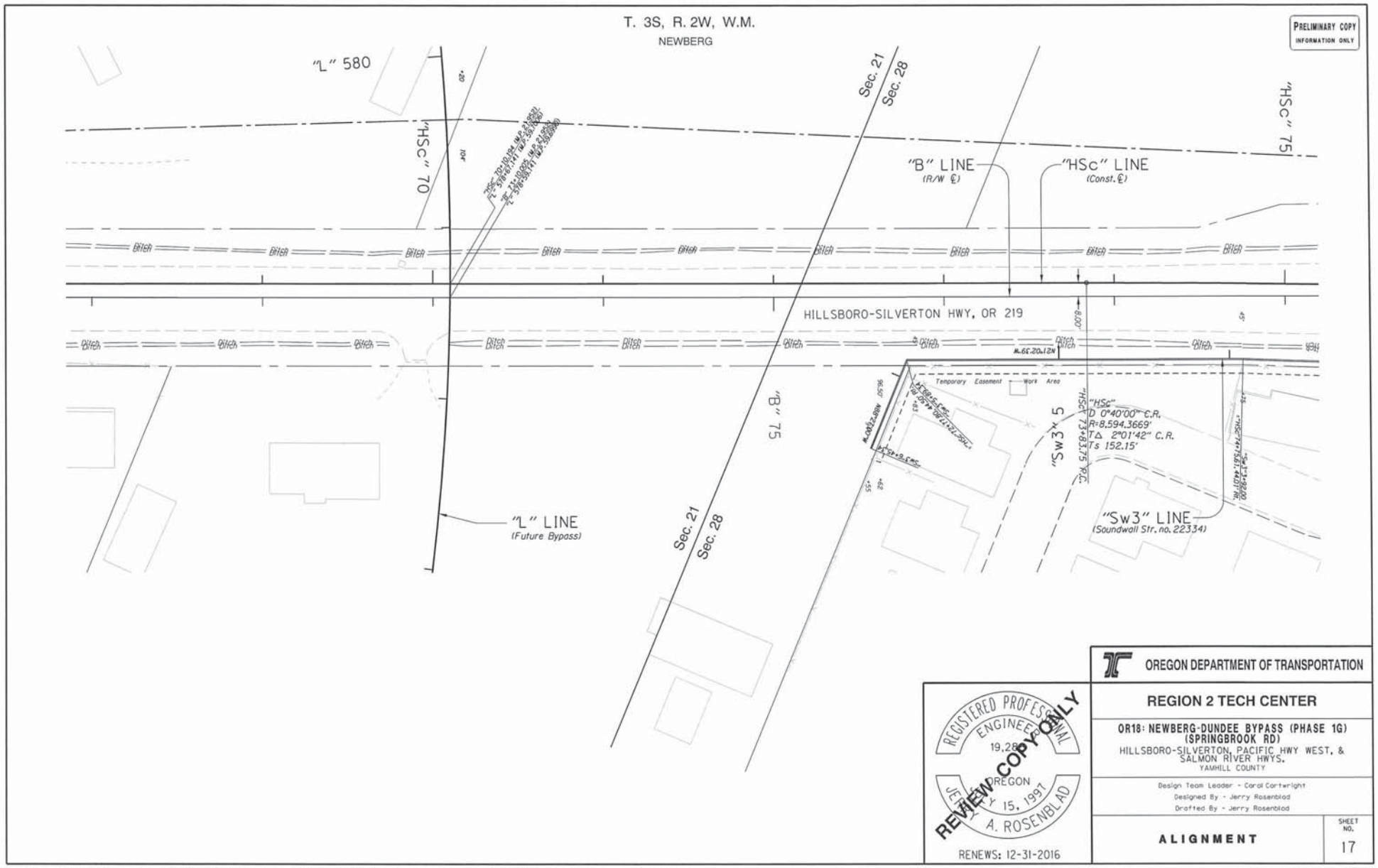
T. 3S, R. 2W, W.M.
NEWBERG
PRELIMINARY COPY
INFORMATION ONLY
"L" 580
"HSc" 70
"HSc" 75
"B" LINE
(R/W ℄)
"HSc" LINE
(Const.℄)
Sec. 21
Sec. 28
HILLSBORO-SILVERTON HWY, OR 219
Ditch
"B" 75
"Sw3" 5
"HSc"
D 0°40'00" C.R.
R=8,594.3669'
T△ 2°01'42" C.R.
Ts 152.15'
Temporary Easement
Work Area
"L" LINE
(Future Bypass)
"Sw3" LINE
(Soundwall Str. no. 22334)
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG-DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
HILLSBORO-SILVERTON, PACIFIC HWY WEST, & SALMON RIVER HWYS.
YAMHILL COUNTY
Design Team Leader - Carol Cartwright
Designed By - Jerry Rosenblad
Drafted By - Jerry Rosenblad
ALIGNMENT
SHEET NO.
17
REGISTERED PROFESSIONAL ENGINEER
19,28
OREGON
JULY 15, 1997
JERRY A. ROSENBLAD
RENEWS: 12-31-2016
REVIEW COPY ONLY
\\scdata2\2650_nd-bypass_17099\Plans\16901_phlg\sheets\16901F_G.AL3 :: Default
1/15/2015 1:29:07 PM
hwye22e
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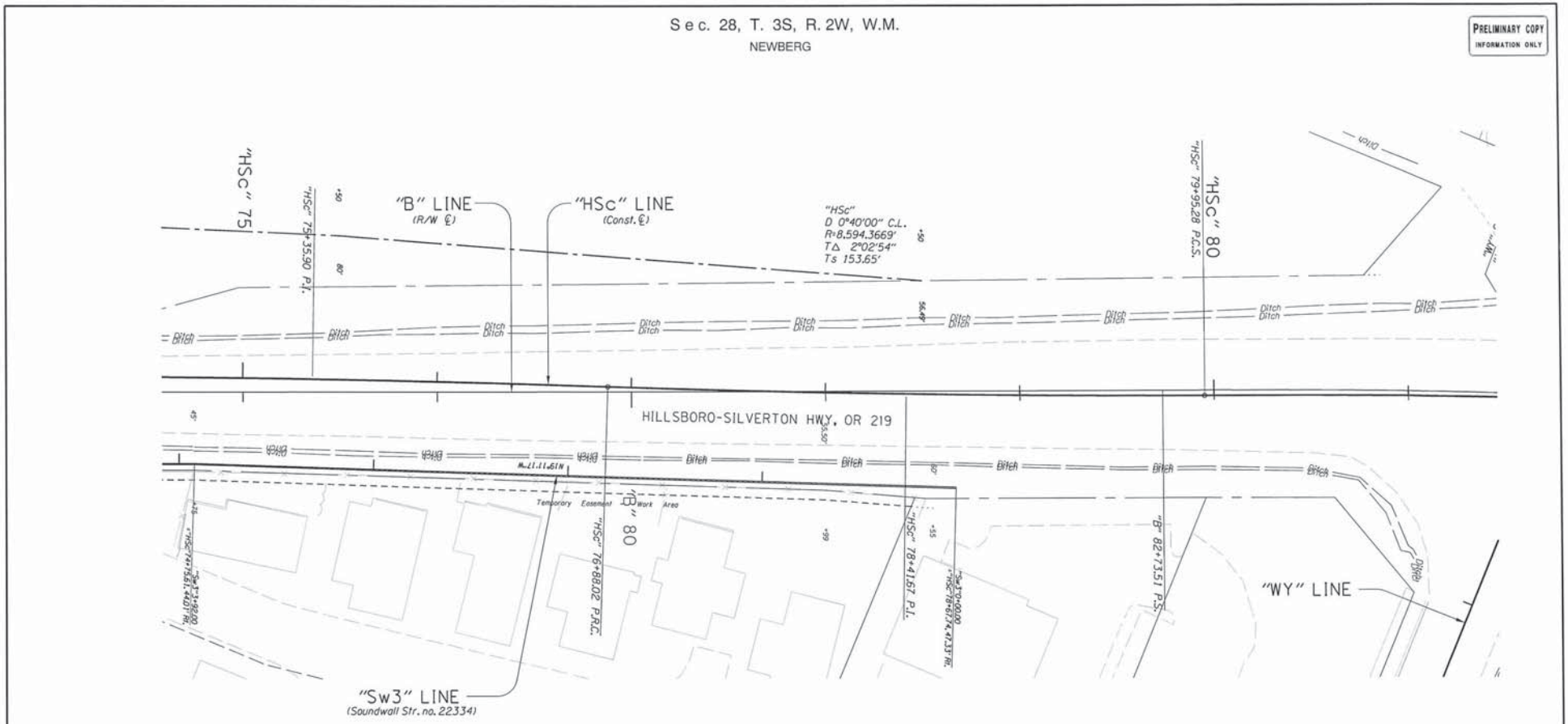


OREGON DEPARTMENT OF TRANSPORTATION

REGION 2 TECH CENTER

OR18: NEWBERG-DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
HILLSBORO-SILVERTON, PACIFIC HWY WEST, & SALMON RIVER HWYS.
YAMHILL COUNTY

Design Team Leader - Carol Cartwright
Designed By - Jerry Rosenblad
Drafted By - Jerry Rosenblad

ALIGNMENT

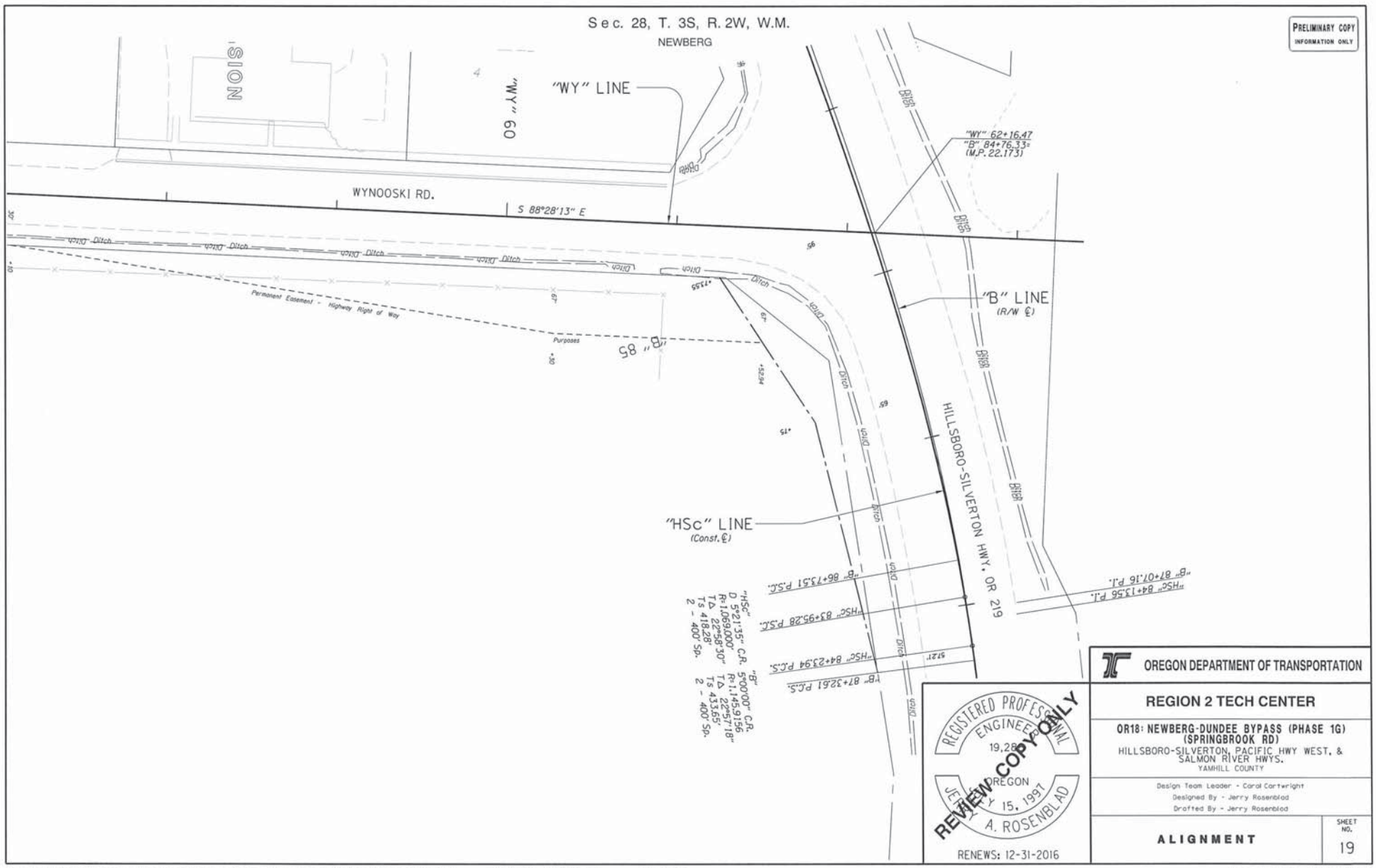
SHEET NO. 18

REGISTERED PROFESSIONAL ENGINEER
19,280
OREGON
JULY 15, 1997
JERRY A. ROSENBLAD
RENEWS: 12-31-2016

REVIEW COPY ONLY

\\scdata2\2650_nd-bypass_17099\Plans\16901_phlg\sheets\16901F_G.AL3 :: Default 1/15/2015 1:29:07 PM hwye22e

Rotation: 0° Scale: 1"=50'


Sec. 28, T. 3S, R. 2W, W.M.
NEWBERG
PRELIMINARY COPY
INFORMATION ONLY
"WY" LINE
"WY" 60
WYNOOSKI RD.
S 88°28'13" E
"WY" 62+16.47
"B" 84+76.33
(M.P. 22.173)
"B" LINE
(R/W ℄)
"HSc" LINE
(Const. ℄)
HILLSBORO-SILVERTON HWY. OR 219
Permanent Easement - Highway Right of Way Purposes
Ditch
"HSc" 84+13.56 P.I.
"B" 87+07.16 P.I.
"B" 86+73.51 P.S.C.
"HSc" 83+95.28 P.S.C.
"HSc" 84+23.94 P.C.S.
"B" 87+32.61 P.C.S.
"HSc"
D 5°21'35" C.R.
R=1,069.000'
Δ 22°58'30"
Ts 418.28'
2 - 400' Sp.
"B"
5°00'00" C.R.
R=1,145.9156'
Δ 22°57'18"
Ts 433.65'
2 - 400' Sp.
REGISTERED PROFESSIONAL ENGINEER
19,280
OREGON
JULY 15, 1997
JEFFREY A. ROSENBLAD
RENEWS: 12-31-2016
REVIEW COPY ONLY
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG-DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
HILLSBORO-SILVERTON, PACIFIC HWY WEST, & SALMON RIVER HWYS.
YAMHILL COUNTY
Design Team Leader - Carol Cartwright
Designed By - Jerry Rosenblad
Drafted By - Jerry Rosenblad
ALIGNMENT
SHEET NO. 19
\\scdcta2\2650_nd-bypass_17099\Plans\16901_phlg\sheets\16901F_G.AL3 :: Default 1/15/2015 1:29:08 PM hwye22e
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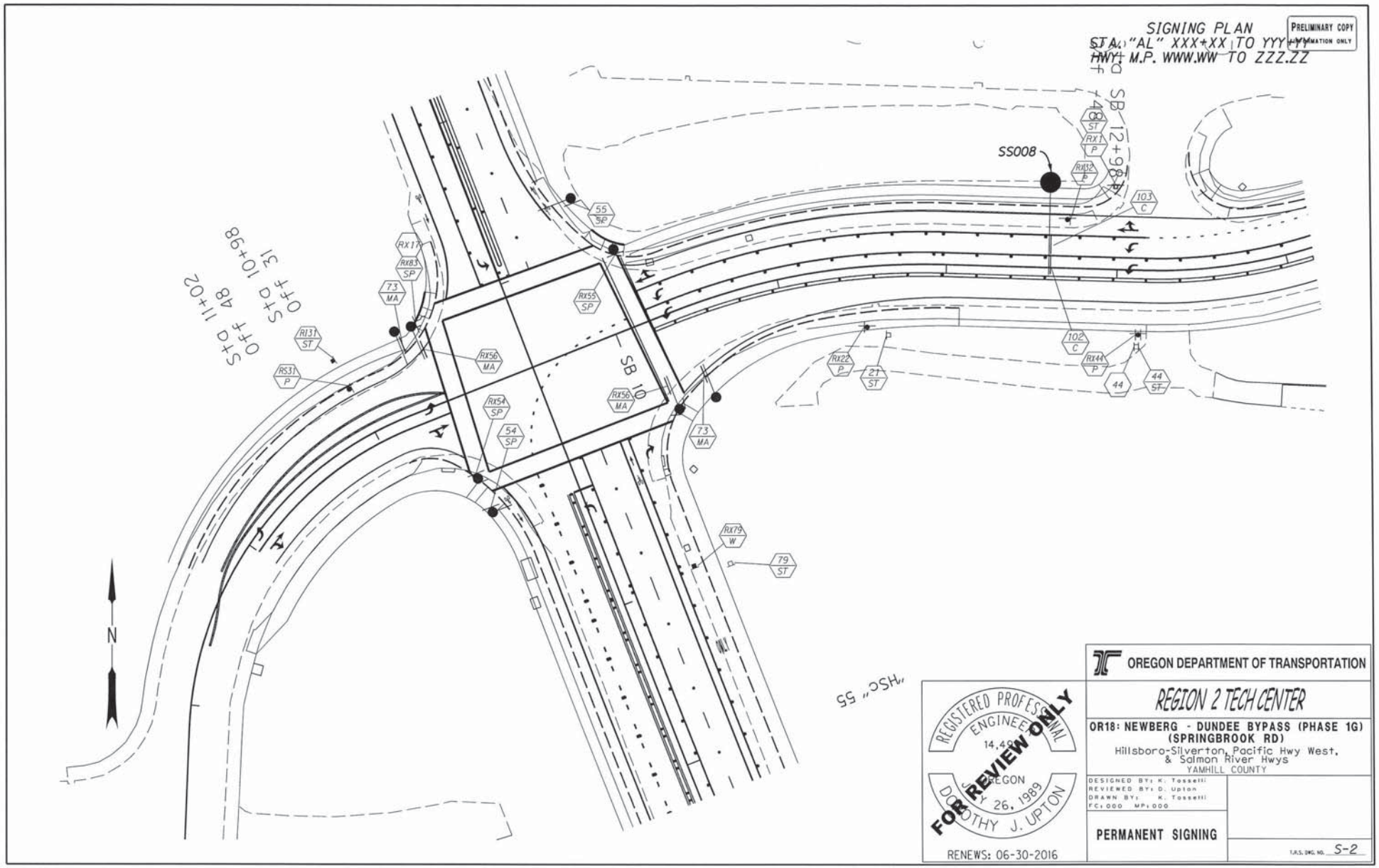
SIGNING PLAN
STA. "AL" XXX+XX TO YYY+YY
HWY M.P. WWW.WW TO ZZZ.ZZ
PRELIMINARY COPY
INFORMATION ONLY
SB 12+98
SS008
SB 10
N
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG - DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
Hillsboro-Silverton, Pacific Hwy West, & Salmon River Hwys
YAMHILL COUNTY
DESIGNED BY: K. Tossell
REVIEWED BY: D. Upton
DRAWN BY: K. Tossell
FC: 000 MP: 000
PERMANENT SIGNING
T.R.S. DWG. NO. S-2
REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 26, 1989
DOROTHY J. UPTON
RENEWS: 06-30-2016
FOR REVIEW ONLY
F:\ODOT_DATA\Projects\2014\17099_NDB\IG\SIGNS\16901F_G.sni :: Default 12/11/2014 2:32:24 PM hwye2lg
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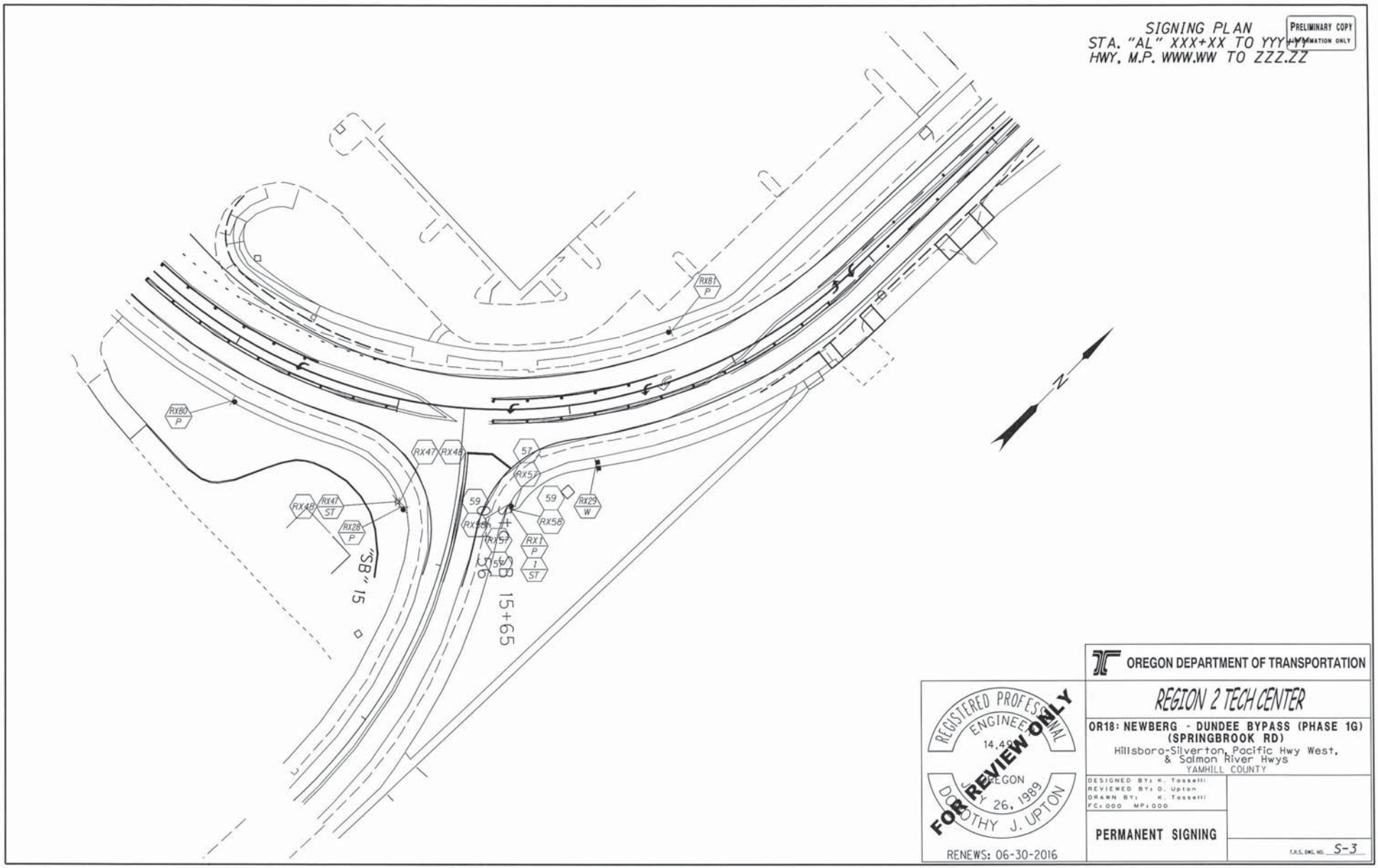
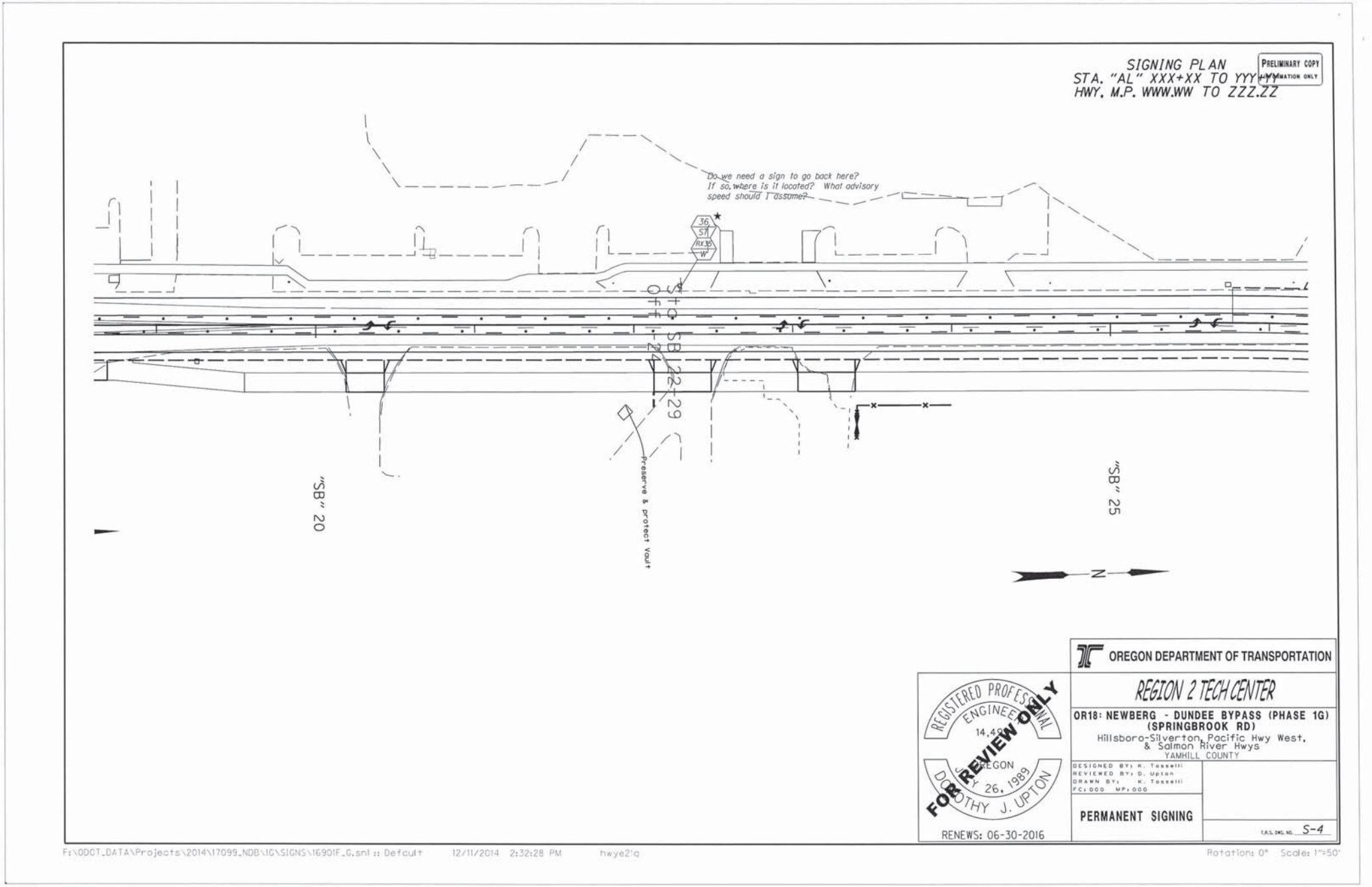
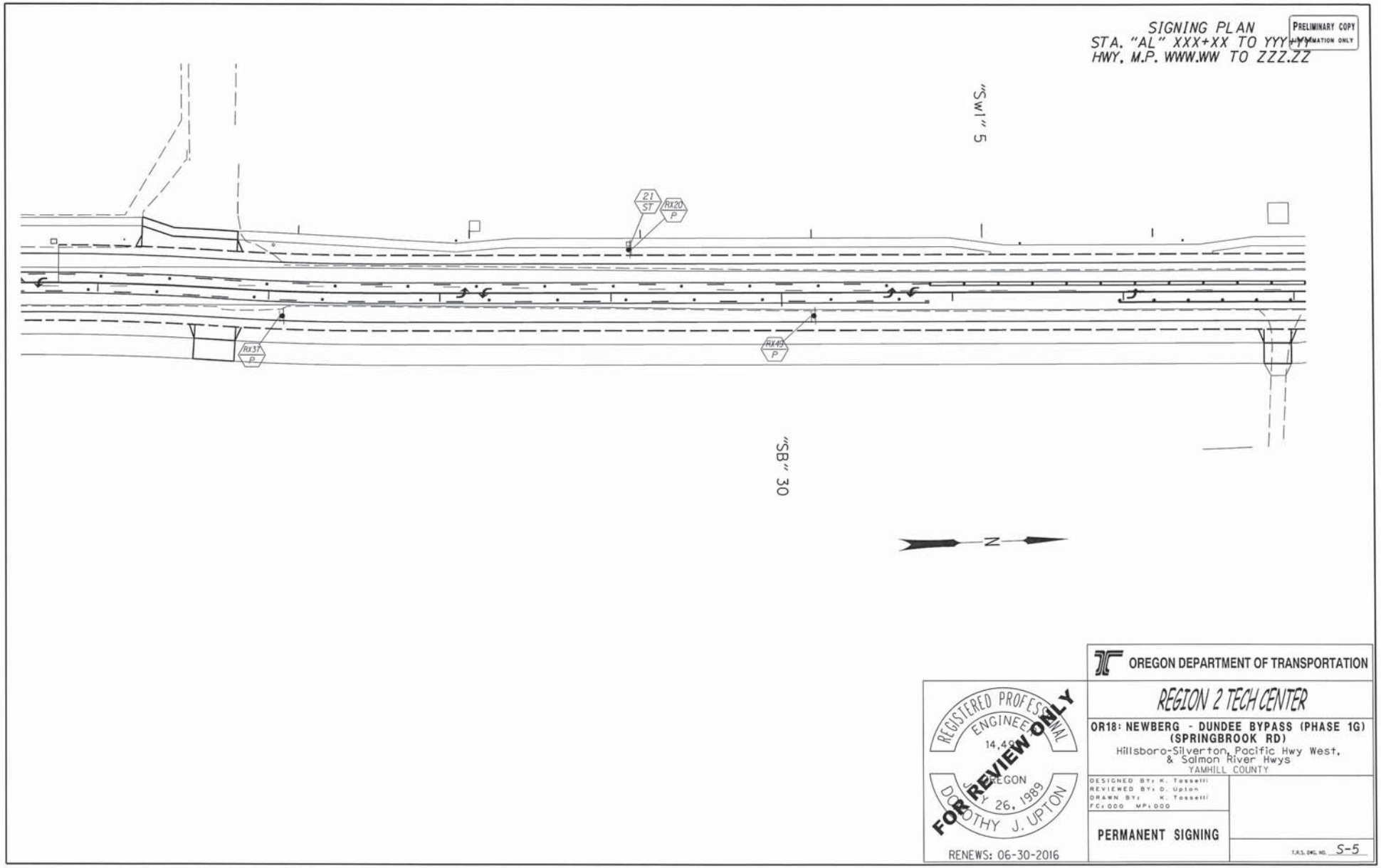

SIGNING PLAN
STA. "AL" XXX+XX TO YYY+YY
HWY. M.P. WWW.WW TO ZZZ.ZZ
PRELIMINARY COPY
INFORMATION ONLY
RX81 P
RX80 P
RX47 RX48
57 RX57
RX48
RX47 ST
RX28 P
59 RX59
59 RX58
RX57
59
RX29 W
RX1 P
1 ST
"SB" 15
"SB" 15+65
N
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG - DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
Hillsboro-Silverton, Pacific Hwy West,
& Salmon River Hwys
YAMHILL COUNTY
REGISTERED PROFESSIONAL ENGINEER
14,489
OREGON
JULY 26, 1989
DOROTHY J. UPTON
RENEWS: 06-30-2016
FOR REVIEW ONLY
DESIGNED BY: K. Tossell
REVIEWED BY: D. Upton
DRAWN BY: K. Tossell
FC: 000 MP: 000
PERMANENT SIGNING
T.R.S. DWG. NO. S-3
F:\ODOT_DATA\Projects\2014\17099_NDB\IG\SIGNS\16901F_G.sni :: Default 12/11/2014 2:32:27 PM hwye2'g
Rotation: 0° Scale: 1"=50'


SIGNING PLAN
STA. "AL" XXX+XX TO YYY+YY
HWY. M.P. WWW.WW TO ZZZ.ZZ
PRELIMINARY COPY
INFORMATION ONLY
Do we need a sign to go back here?
If so, where is it located? What advisory
speed should I assume?
36
ST
RX 35
W
Stop SB 22-29 Off 22
"SB" 20
"SB" 25
Preserve & protect vault
N
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG - DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
Hillsboro-Silverton, Pacific Hwy West,
& Salmon River Hwys
YAMHILL COUNTY
DESIGNED BY: K. Tasselli
REVIEWED BY: D. Upton
DRAWN BY: K. Tasselli
FC: 000 MP: 000
PERMANENT SIGNING
T.R.S. DWG. NO. S-4
REGISTERED PROFESSIONAL ENGINEER
14,480
OREGON
JULY 26, 1989
DOROTHY J. UPTON
RENEWS: 06-30-2016
FOR REVIEW ONLY
F:\ODOT_DATA\Projects\2014\17099_NDB\IG\SIGNS\16901F_G.snl :: Default 12/11/2014 2:32:28 PM hwye2!g
Rotation: 0° Scale: 1"=50'


SIGNING PLAN
STA. "AL" XXX+XX TO YYY+YY
HWY. M.P. WWW.WW TO ZZZ.ZZ
PRELIMINARY COPY
FOR INFORMATION ONLY
"SW1" 5
"SB" 30
21 ST
RX20 P
RX37 P
RX45 P
N
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG - DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
Hillsboro-Silverton, Pacific Hwy West,
& Salmon River Hwys
YAMHILL COUNTY
DESIGNED BY: K. Tasselli
REVIEWED BY: D. Upton
DRAWN BY: K. Tasselli
FC: 000 MP: 000
PERMANENT SIGNING
T.R.S. DWG. NO. S-5
REGISTERED PROFESSIONAL ENGINEER
14,48
OREGON
JULY 26, 1989
DOROTHY J. UPTON
FOR REVIEW ONLY
RENEWS: 06-30-2016
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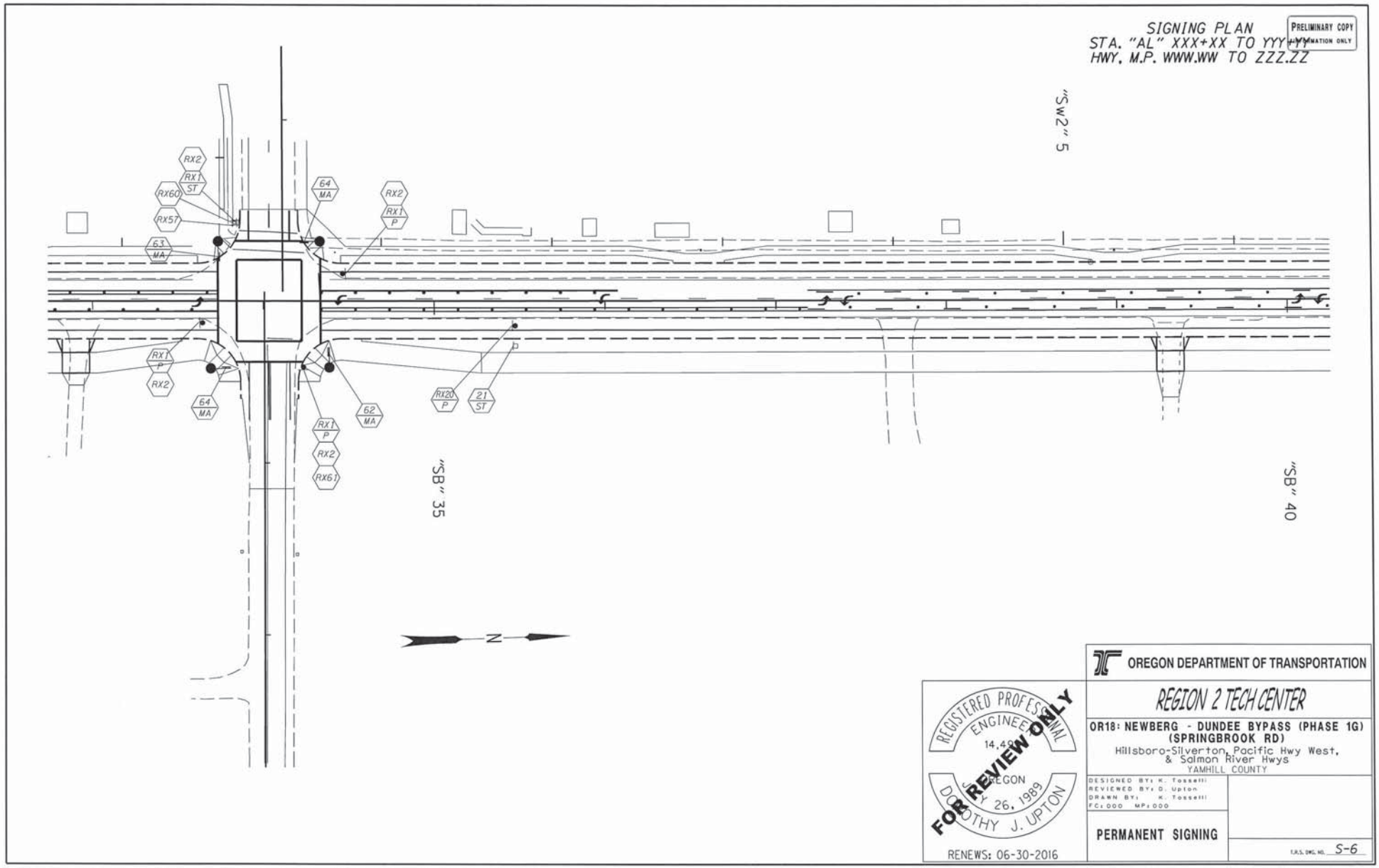
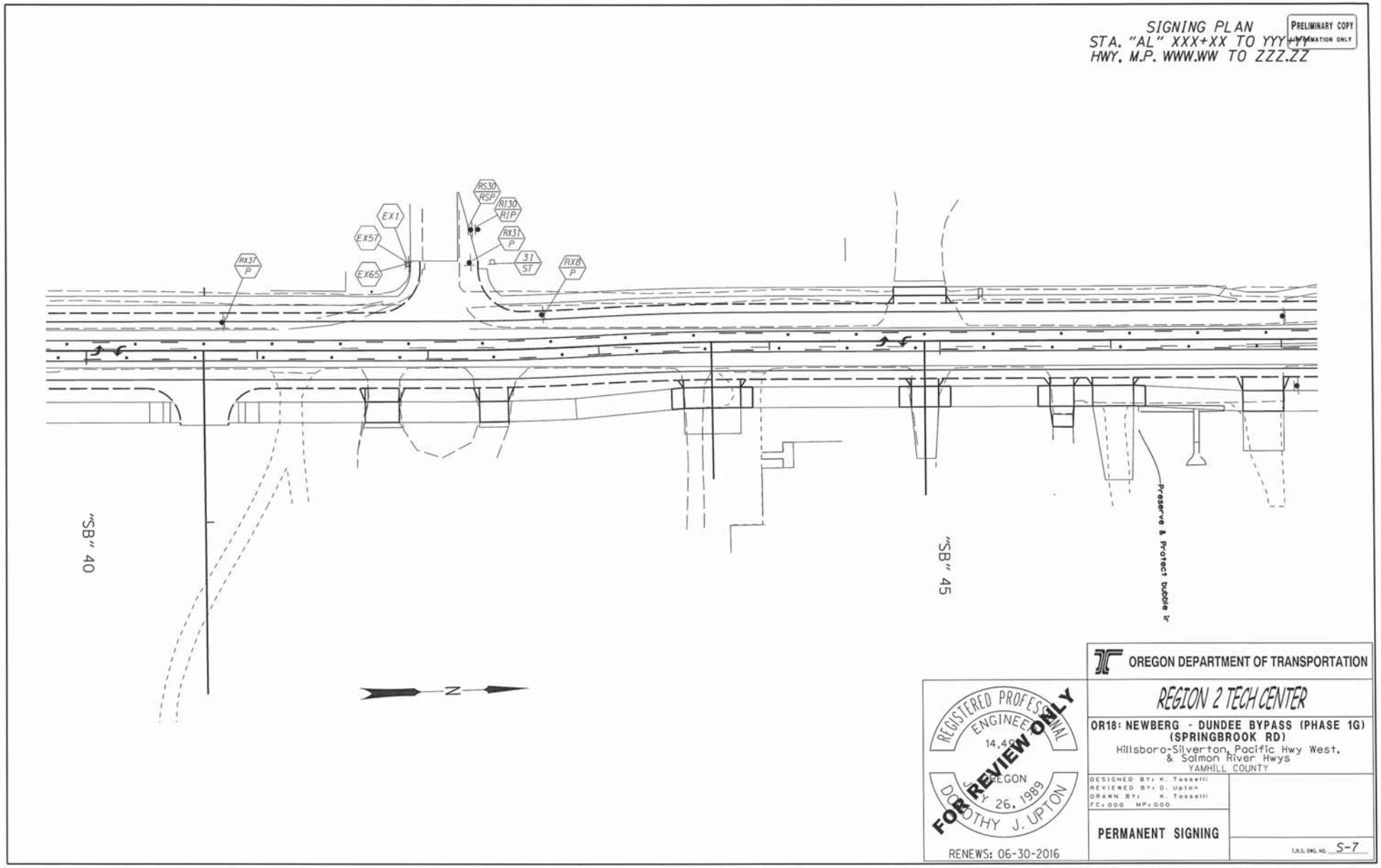
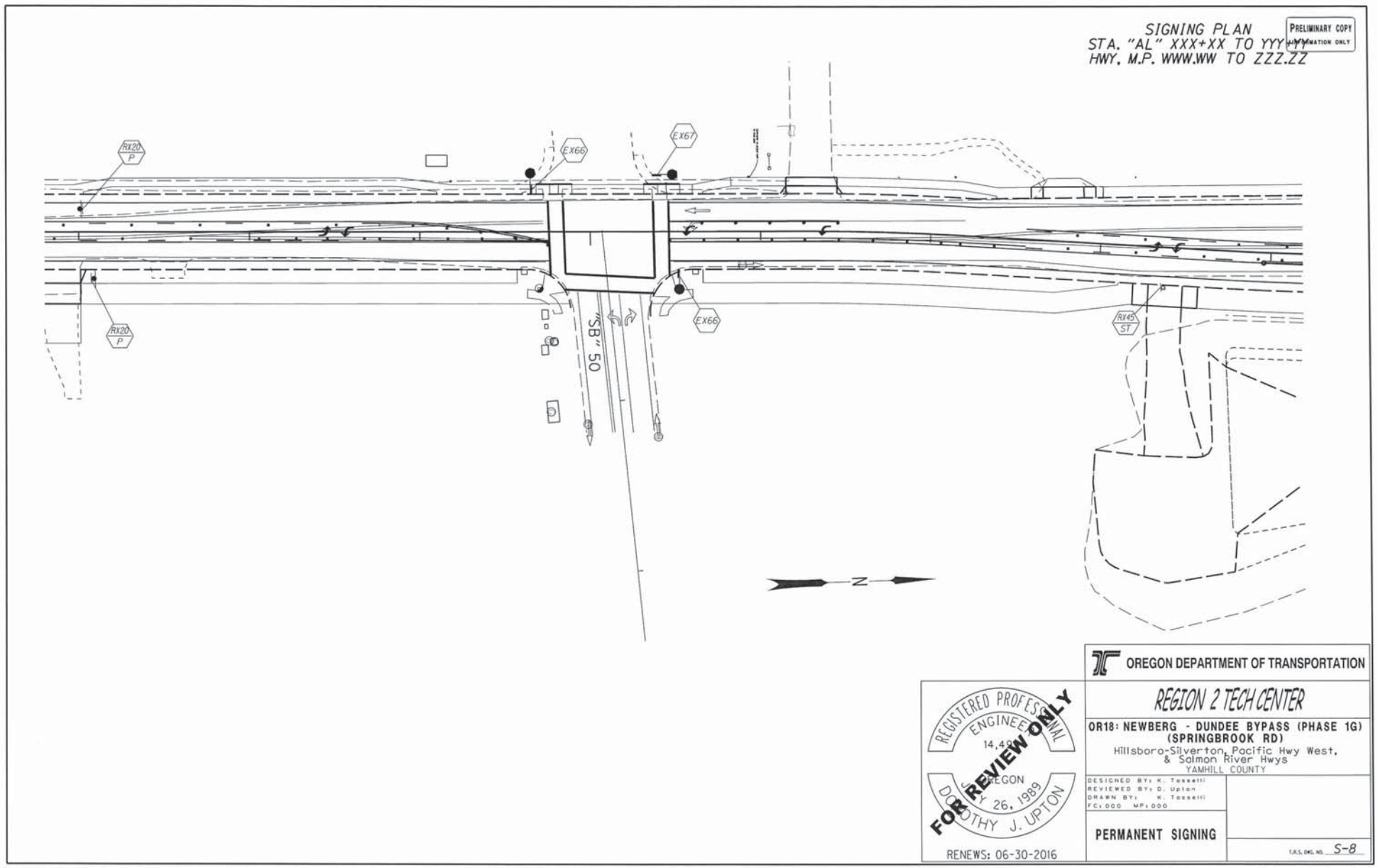
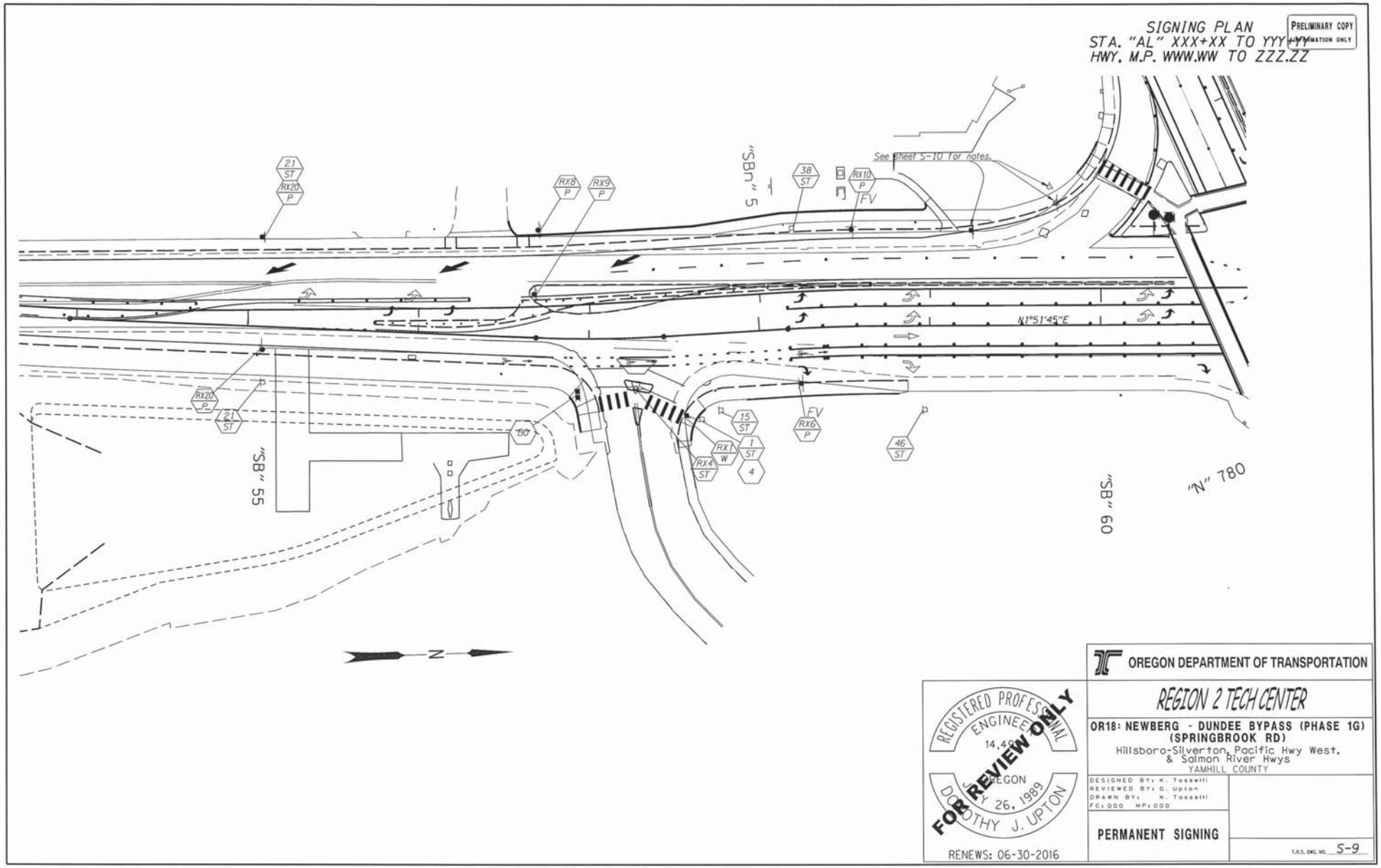
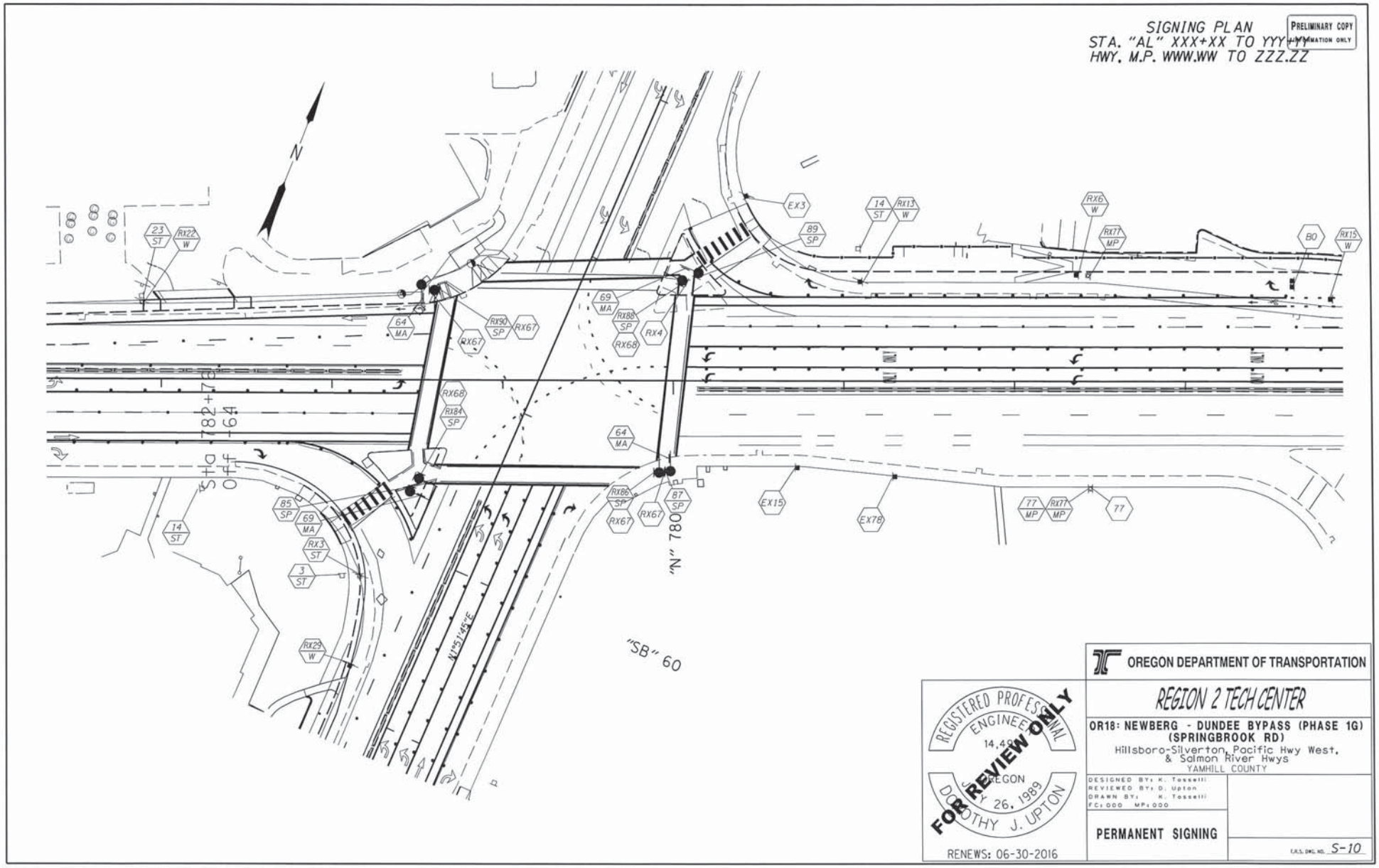
Rotation: 0° Scale: 1"=50'


SIGNING PLAN
STA. "AL" XXX+XX TO YYY+YY
HWY. M.P. WWW.WW TO ZZZ.ZZ
PRELIMINARY COPY FOR INFORMATION ONLY
"SW2" 5
"SB" 35
"SB" 40
RX2
RX1 ST
RX60
RX57
63 MA
64 MA
RX2
RX1 P
RX1 P
RX2
64 MA
62 MA
RX1 P
RX2
RX61
RX20 P
21 ST
N
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG - DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
Hillsboro-Silverton, Pacific Hwy West,
& Salmon River Hwys
YAMHILL COUNTY
DESIGNED BY: K. Tosselli
REVIEWED BY: D. Upton
DRAWN BY: K. Tosselli
FC: 000 MP: 000
PERMANENT SIGNING
I.R.S. DWG. NO. S-6
REGISTERED PROFESSIONAL ENGINEER
14,49
OREGON
JULY 26, 1989
DOROTHY J. UPTON
FOR REVIEW ONLY
RENEWS: 06-30-2016
F:\ODOT_DATA\Projects\2014\17099_NDB\1G\SIGNS\16901F_G.snt :: Default 12/11/2014 2:32:29 PM hwye21a
Rotation: 0° Scale: 1"=50'


SIGNING PLAN
STA. "AL" XXX+XX TO YYY+YY
HWY. M.P. WWW.WW TO ZZZ.ZZ
PRELIMINARY COPY
FOR INFORMATION ONLY
RS30 RSP
RI30 RIP
EX1
EX57
EX65
RX31 P
31 ST
RX37 P
RX8 P
"SB" 40
"SB" 45
Preserve & Protect bubble ir
N
REGISTERED PROFESSIONAL ENGINEER
14,489
OREGON
JULY 26, 1989
DOROTHY J. UPTON
FOR REVIEW ONLY
RENEWS: 06-30-2016
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG - DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
Hillsboro-Silverton, Pacific Hwy West,
& Salmon River Hwys
YAMHILL COUNTY
DESIGNED BY: K. Tasselli
REVIEWED BY: D. Upton
DRAWN BY: K. Tasselli
FC: 000 MP: 000
PERMANENT SIGNING
I.R.S. DWG. NO. S-7
F:\ODOT_DATA\Projects\2014\17099_NDB\IG\SIGNS\16901F_G.sni :: Defcult 12/11/2014 2:32:30 PM hwye2lq
Rotation: 0° Scale: 1"=50'


SIGNING PLAN
STA. "AL" XXX+XX TO YYY+YY
HWY. M.P. WWW.WW TO ZZZ.ZZ
PRELIMINARY COPY
INFORMATION ONLY
RX20 P
EX66
EX67
EX66
RX20 P
"SB" 50
RX45 ST
N
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG - DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
Hillsboro-Silverton, Pacific Hwy West,
& Salmon River Hwys
YAMHILL COUNTY
DESIGNED BY: K. Tassell
REVIEWED BY: D. Upton
DRAWN BY: K. Tassell
FC: 000 MP: 000
PERMANENT SIGNING
I.R.S. DWG. NO. S-8
REGISTERED PROFESSIONAL ENGINEER
14,48
OREGON
JULY 26, 1989
DOROTHY J. UPTON
RENEWS: 06-30-2016
FOR REVIEW ONLY
F:\ODOT_DATA\Projects\2014\17099_NDB\IG\SIGNS\16901F_G.sni :: Default 12/11/2014 2:32:31 PM hwye21g
Rotation: 0° Scale: 1"=50'


SIGNING PLAN
STA. "AL" XXX+XX TO YYY+YY
HWY. M.P. WWW.WW TO ZZZ.ZZ
PRELIMINARY COPY
FOR INFORMATION ONLY
See sheet S-10 for notes.
"SB" 55
"SB" 60
"N" 780
N1°51'45"E
21 ST
RX20 P
RX8 P
RX9 P
38 ST
RX10 P
FV
RX6 P
15 ST
RX1 W
1 ST
4
RX4 ST
46 ST
60
N
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG - DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
Hillsboro-Silverton, Pacific Hwy West, & Salmon River Hwys
YAMHILL COUNTY
DESIGNED BY: K. Tossell
REVIEWED BY: D. Upton
DRAWN BY: K. Tossell
FC: 000 MP: 000
PERMANENT SIGNING
T.R.S. DWG. NO. S-9
REGISTERED PROFESSIONAL ENGINEER
14,480
OREGON
JULY 26, 1989
DOROTHY J. UPTON
FOR REVIEW ONLY
RENEWS: 06-30-2016
F:\ODOT_DATA\Projects\2014\17099_NDB\IG\SIGNS\16901F_G.sni :: Default 12/11/2014 2:32:31 PM hwye2lq
Rotation: 0° Scale: 1"=50'


SIGNING PLAN
STA. "AL" XXX+XX TO YYY+YY
HWY. M.P. WWW.WW TO ZZZ.ZZ
PRELIMINARY COPY
INFORMATION ONLY
N
"N" 780
"SB" 60
N15°51'45"E
782+78
Sta 164
Off
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG - DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
Hillsboro-Silverton, Pacific Hwy West,
& Salmon River Hwys
YAMHILL COUNTY
DESIGNED BY: K. Tosselli
REVIEWED BY: D. Upton
DRAWN BY: K. Tosselli
FC: 000 MP: 000
PERMANENT SIGNING
S-10
REGISTERED PROFESSIONAL ENGINEER
14,488
OREGON
JULY 26, 1989
DOROTHY J. UPTON
FOR REVIEW ONLY
RENEWS: 06-30-2016
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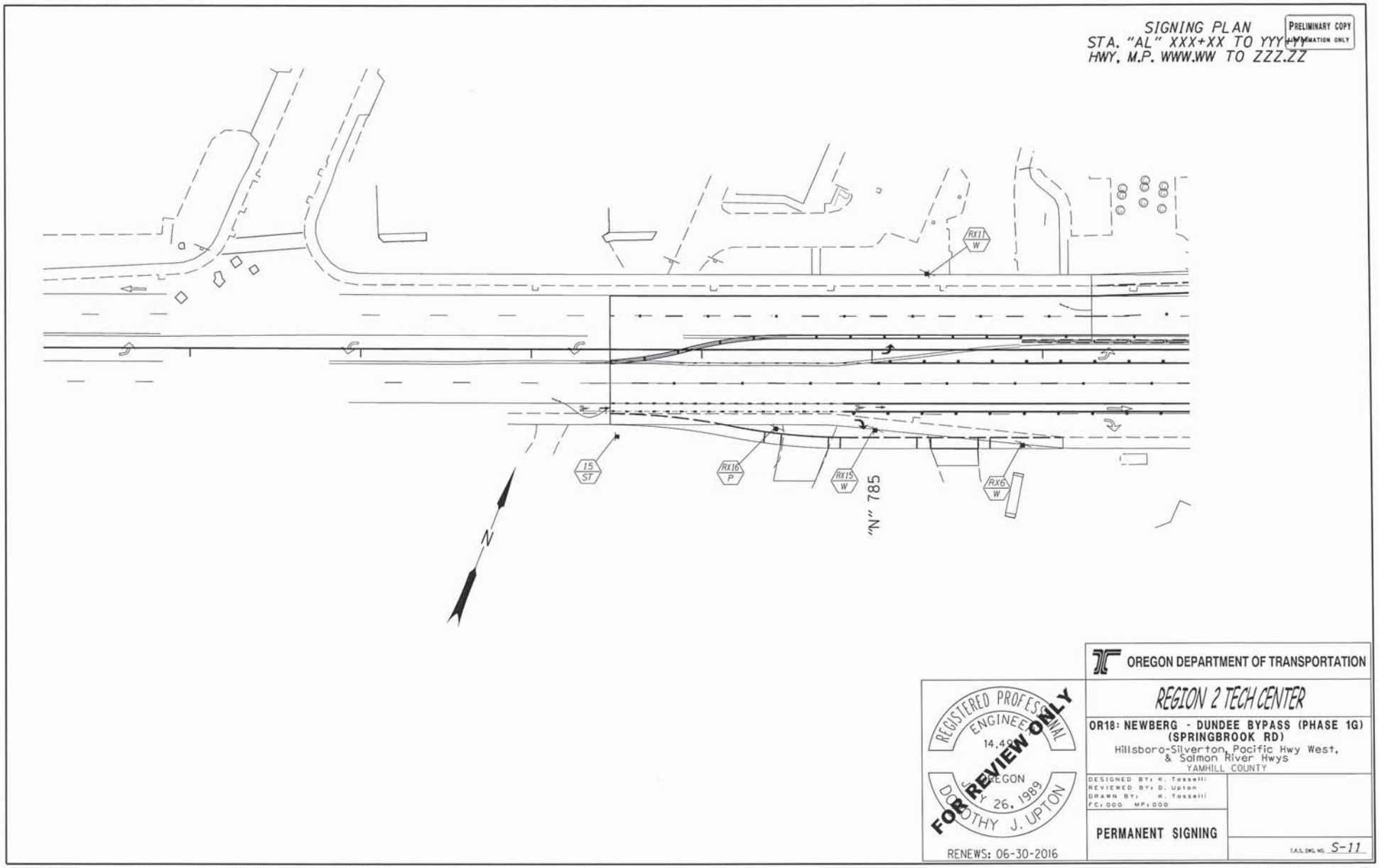
Rotation: 0° Scale: 1"=50'


SIGNING PLAN
STA. "AL" XXX+XX TO YYY+YY
HWY. M.P. WWW.WW TO ZZZ.ZZ
PRELIMINARY COPY
INFORMATION ONLY
RX17 W
15 ST
RX16 P
RX15 W
RX6 W
"N" 785
N
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG - DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
Hillsboro-Silverton, Pacific Hwy West,
& Salmon River Hwys
YAMHILL COUNTY
DESIGNED BY: K. Tosselli
REVIEWED BY: D. Upton
DRAWN BY: K. Tosselli
FC: 000 MP: 000
PERMANENT SIGNING
T.R.S. DWG. NO. S-11
REGISTERED PROFESSIONAL ENGINEER
14,489
OREGON
JULY 26, 1989
DOROTHY J. UPTON
FOR REVIEW ONLY
RENEWS: 06-30-2016
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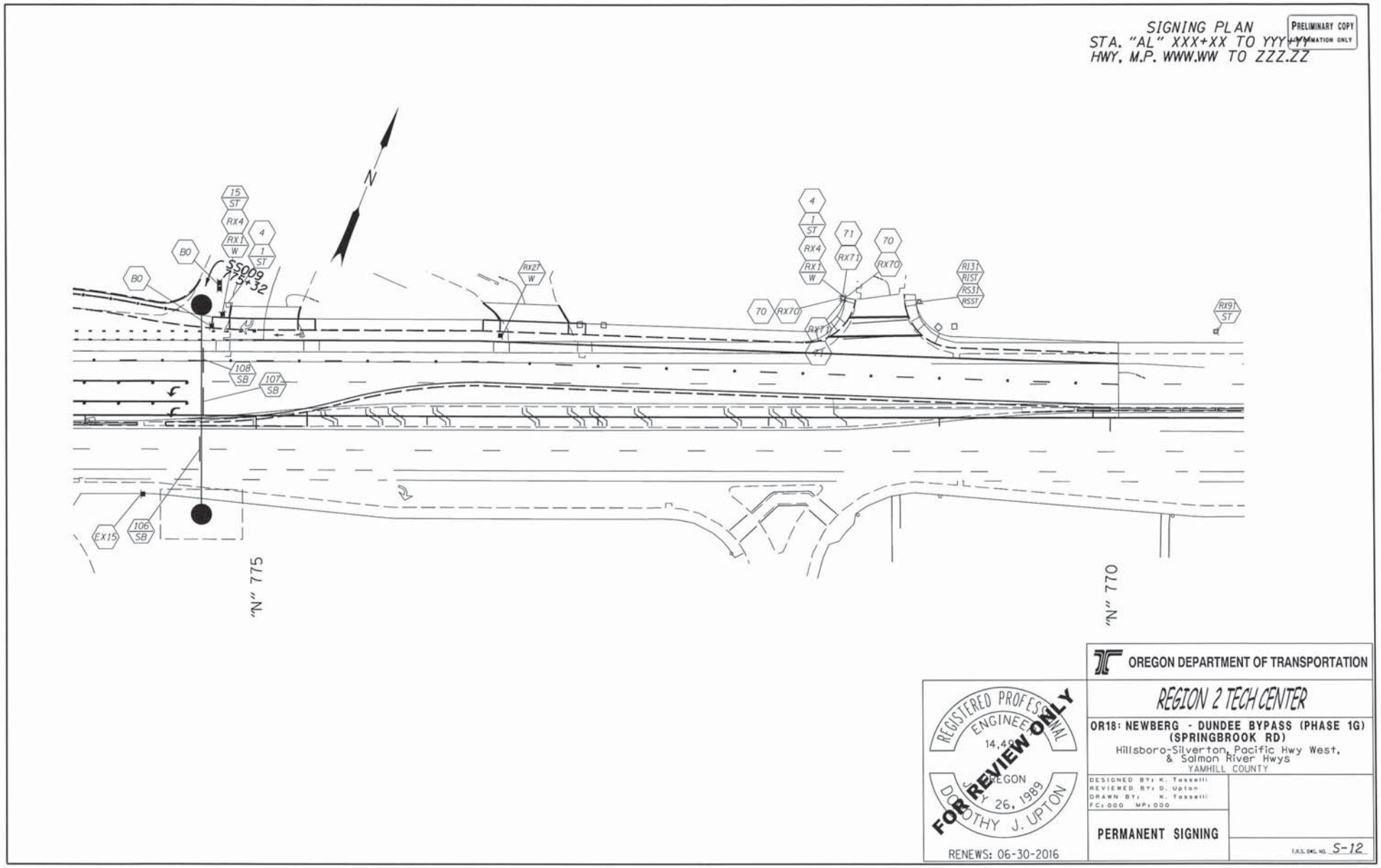
SIGNING PLAN
STA. "AL" XXX+XX TO YYY+YY
HWY. M.P. WWW.WW TO ZZZ.ZZ
PRELIMINARY COPY
FOR INFORMATION ONLY
N
15 ST
RX4
RX1 W
4 1 ST
B0
B0
SS09 775+32
RX27 W
4 1 ST
RX4
RX1 W
71
RX71
70
RX70
70
RX70
RI31
RIST
RS31
RSST
RX9 ST
108 SB
107 SB
EX15
106 SB
"N" 775
"N" 770
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG - DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
Hillsboro-Silverton, Pacific Hwy West,
& Salmon River Hwys
YAMHILL COUNTY
REGISTERED PROFESSIONAL ENGINEER
14,48
OREGON
JULY 26, 1989
DOROTHY J. UPTON
FOR REVIEW ONLY
RENEWS: 06-30-2016
DESIGNED BY: K. Tossell
REVIEWED BY: D. Upton
DRAWN BY: K. Tossell
FC: 000 MP: 000
PERMANENT SIGNING
I.R.S. DWG. NO. S-12
F:\ODOT_DATA\Projects\2014\17099_NDB\1G\SIGNS\16901F_G.snl :: Default 12/11/2014 2:32:34 PM hwye2'q
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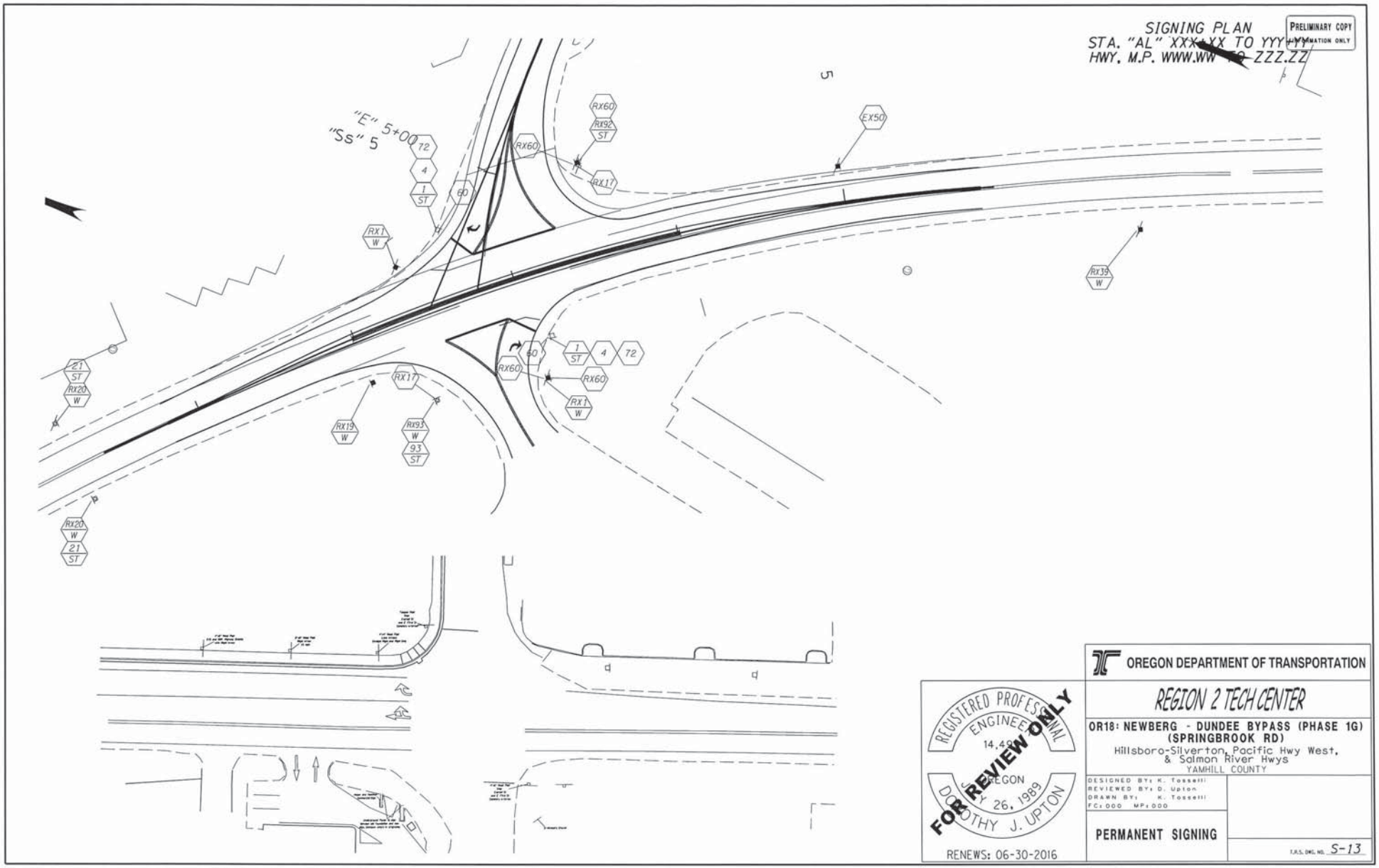
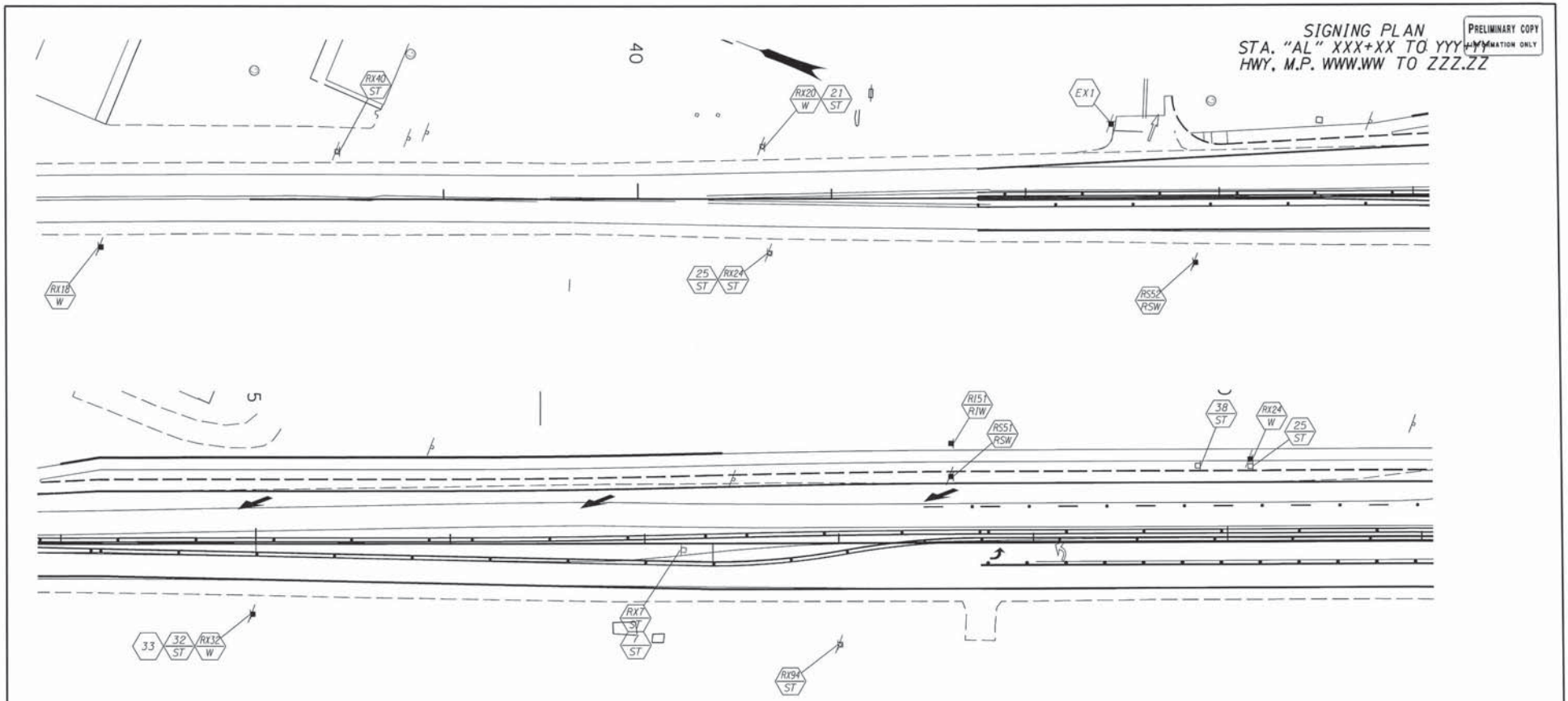

SIGNING PLAN
STA. "AL" XXX+XX TO YYY+YY
HWY. M.P. WWW.WW TO ZZZ.ZZ
PRELIMINARY COPY
INFORMATION ONLY
"E" 5+00
"Ss" 5
RX60
RX92
ST
RX17
EX50
RX1
W
RX39
W
RX19
W
RX93
W
93
ST
RX20
W
21
ST
60
1
ST
4
72
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG - DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
Hillsboro-Silverton, Pacific Hwy West,
& Salmon River Hwys
YAMHILL COUNTY
DESIGNED BY: K. Tossell
REVIEWED BY: D. Upton
DRAWN BY: K. Tossell
FC: 000 MP: 000
PERMANENT SIGNING
T.A.S. DWG. NO. S-13
REGISTERED PROFESSIONAL ENGINEER
14,48
OREGON
JULY 26, 1989
DOROTHY J. UPTON
RENEWS: 06-30-2016
FOR REVIEW ONLY
F:\ODOT_DATA\Projects\2014\17099_NDB\IG\SIGNS\16901F_G.sni :: Default 12/11/2014 2:32:35 PM hwye2lq
Rotation: 0° Scale: 1"=50'


SIGNING PLAN
STA. "AL" XXX+XX TO YYY+YY
HWY. M.P. WWW.WW TO ZZZ.ZZ
PRELIMINARY COPY FOR INFORMATION ONLY
RX40 ST
RX20 W
21 ST
EX1
RX18 W
25 ST
RX24 ST
RS52 RSW
RI51 RIW
RS51 RSW
38 ST
RX24 W
25 ST
33
32 ST
RX32 W
RX7 ST
7 ST
RX94 ST
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG - DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
Hillsboro-Silverton, Pacific Hwy West,
& Salmon River Hwys
YAMHILL COUNTY
DESIGNED BY: K. Tassell
REVIEWED BY: D. Upton
DRAWN BY: K. Tassell
FC: 000 MP: 000
PERMANENT SIGNING
T.R.S. DWG. NO. S-14
REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 26, 1989
DOROTHY J. UPTON
RENEWS: 06-30-2016
FOR REVIEW ONLY
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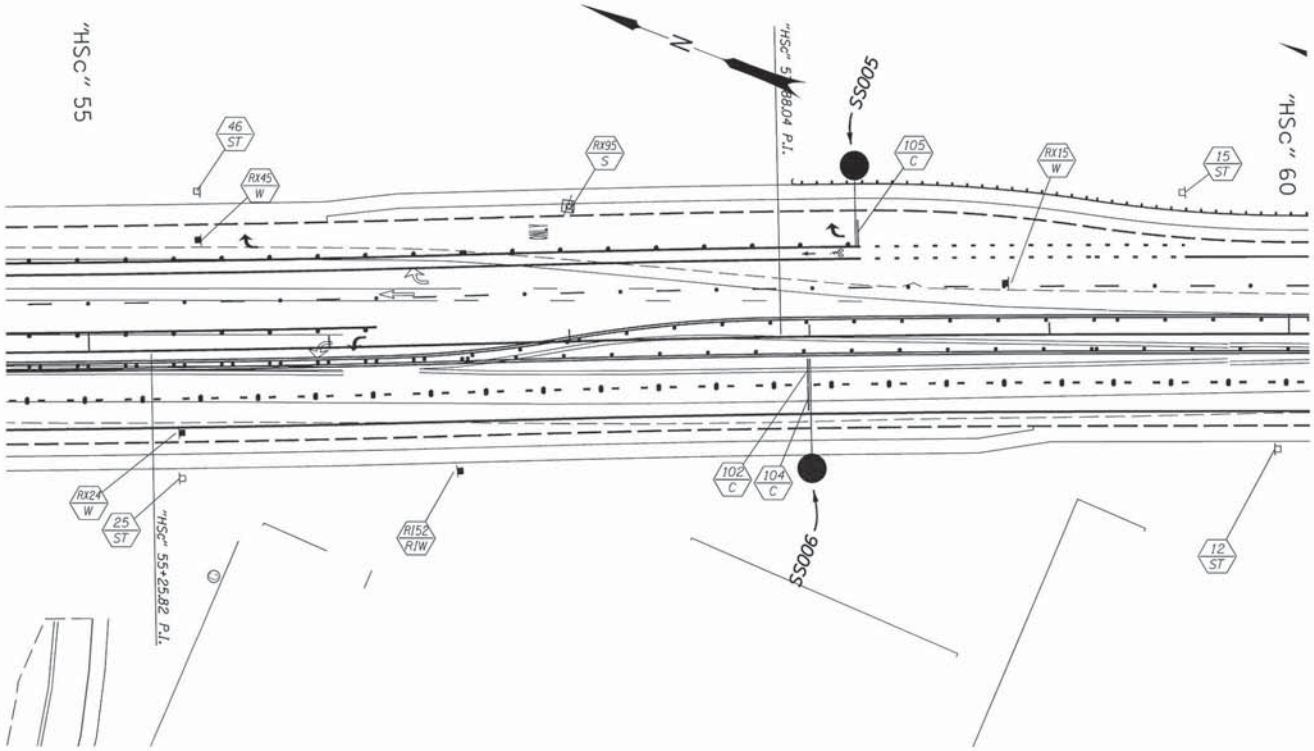

SIGNING PLAN
STA. "AL" XXX+XX TO YYY+YY
HWY. M.P. WWW.WW TO ZZZ.ZZ

PRELIMINARY COPY
INFORMATION ONLY

OREGON DEPARTMENT OF TRANSPORTATION

REGION 2 TECH CENTER

OR18: NEWBERG - DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
Hillsboro-Silverton, Pacific Hwy West,
& Salmon River Hwys
YAMHILL COUNTY

REGISTERED PROFESSIONAL ENGINEER
14,489
OREGON
JULY 26, 1989
DOROTHY J. UPTON
RENEWS: 06-30-2016

FOR REVIEW ONLY

DESIGNED BY: K. Tossell
REVIEWED BY: D. Upton
DRAWN BY: K. Tossell
FC: 000 MP: 000

PERMANENT SIGNING

T.R.S. DWG. NO. S-15

F:\ODOT_DATA\Projects\2014\17099_NDB\IG\SIGNS\16901F_G.snt :: Default 12/11/2014 2:32:36 PM nwye2lg

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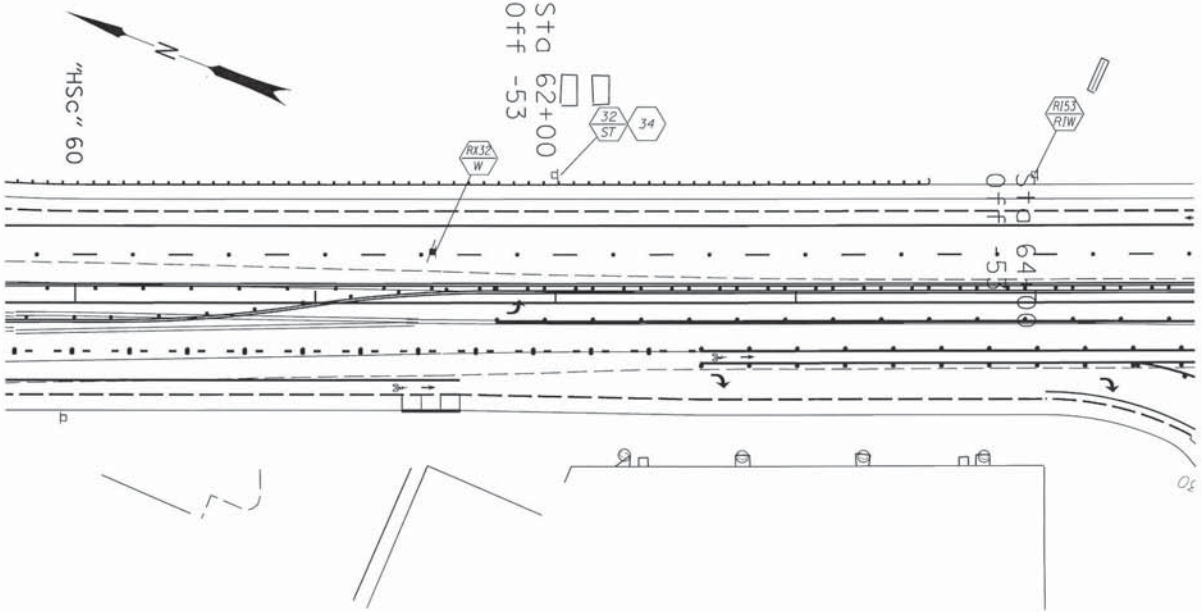
SIGNING PLAN
STA. "AL" XXX+XX TO YYY+YY
HWY. M.P. WWW.WW TO ZZZ.ZZ

PRELIMINARY COPY
FOR INFORMATION ONLY



OREGON DEPARTMENT OF TRANSPORTATION

REGION 2 TECH CENTER

OR18: NEWBERG - DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
Hillsboro-Silverton, Pacific Hwy West,
& Salmon River Hwys
YAMHILL COUNTY

DESIGNED BY: K. Tosselli
REVIEWED BY: D. Upton
DRAWN BY: K. Tosselli
FC: 000 MP: 000

PERMANENT SIGNING

I.A.S. DWG. NO. S-16

REGISTERED PROFESSIONAL ENGINEER
14,49
OREGON
JULY 26, 1989
DOROTHY J. UPTON
RENEWS: 06-30-2016

FOR REVIEW ONLY

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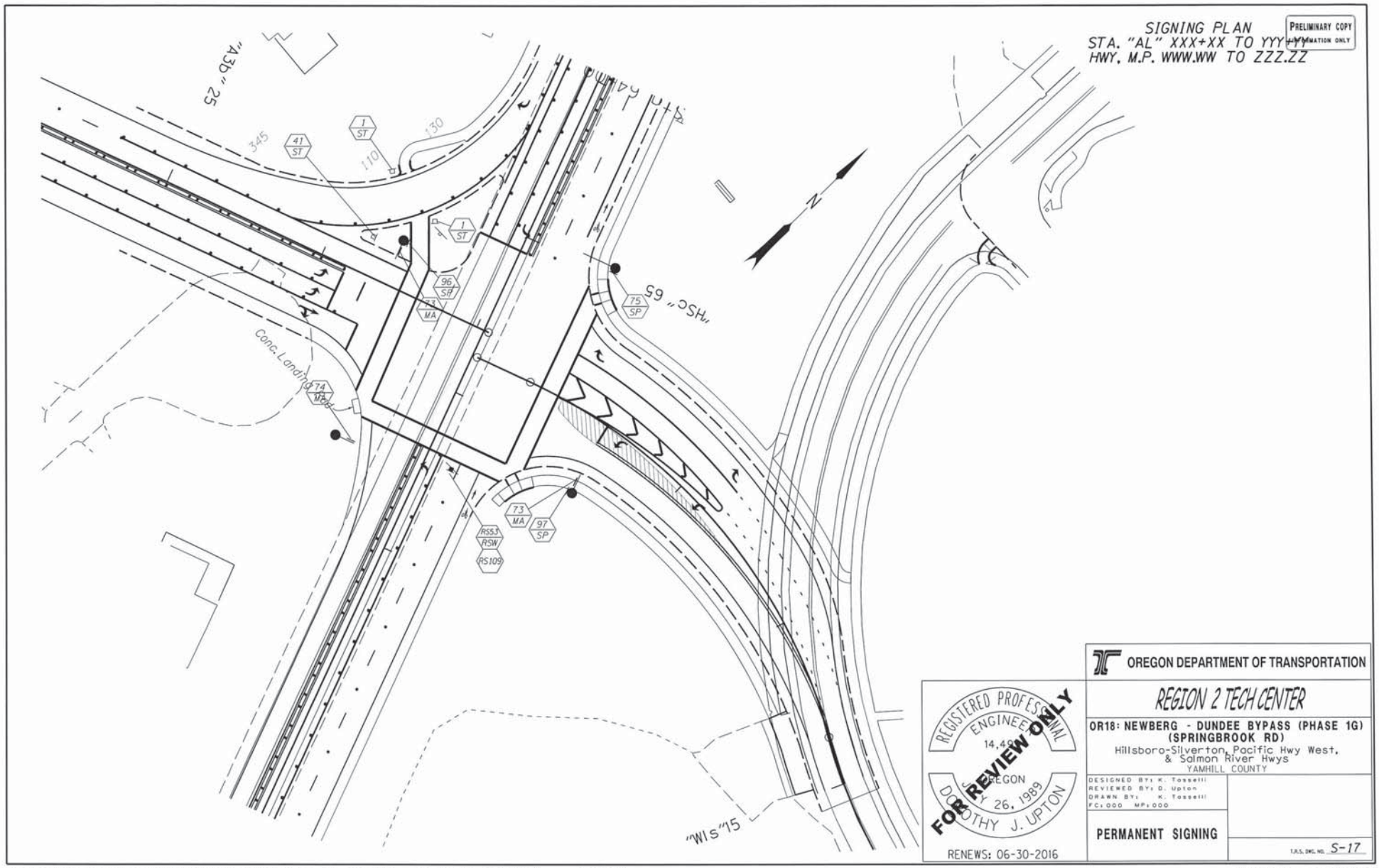
SIGNING PLAN
STA. "AL" XXX+XX TO YYY+YY
HWY. M.P. WWW.WW TO ZZZ.ZZ
PRELIMINARY COPY
FOR INFORMATION ONLY
"A3b" 25
345
41 ST
1 ST
110
130
96 SH
73 MA
74 MA
Conc. Landing
"HSC" 65
75 SP
73 MA
97 SP
RS53
RSW
RS109
"W1S" 15
N
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG - DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
Hillsboro-Silverton, Pacific Hwy West,
& Salmon River Hwys
YAMHILL COUNTY
DESIGNED BY: K. Tosselli
REVIEWED BY: D. Upton
DRAWN BY: K. Tosselli
FC: 000 MP: 000
PERMANENT SIGNING
S-17
REGISTERED PROFESSIONAL ENGINEER
14,49
OREGON
JULY 26, 1989
DOROTHY J. UPTON
RENEWS: 06-30-2016
FOR REVIEW ONLY
F:\ODOT_DATA\Projects\2014\17099_NDB\1G\SIGNS\1690IF_G.sni :: Default 12/11/2014 2:32:38 PM hwye2'q
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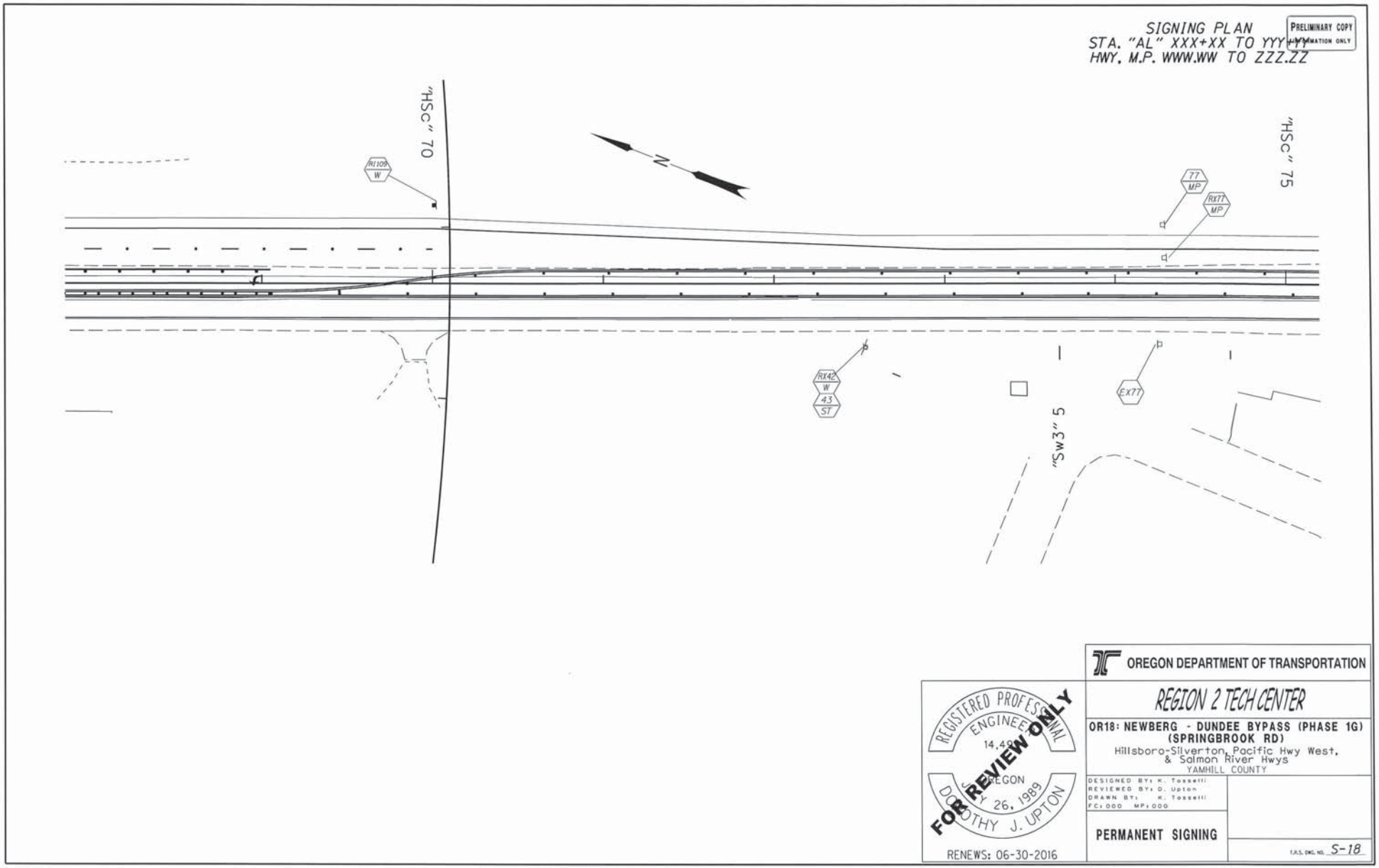
SIGNING PLAN
STA. "AL" XXX+XX TO YYY+YY
HWY. M.P. WWW.WW TO ZZZ.ZZ
PRELIMINARY COPY
INFORMATION ONLY
"HSC" 70
"HSC" 75
"Sw3" 5
N
R1109 W
77 MP
RX77 MP
RX42 W 43 ST
EX77
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG - DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
Hillsboro-Silverton, Pacific Hwy West,
& Salmon River Hwys
YAMHILL COUNTY
DESIGNED BY: K. Tosselli
REVIEWED BY: D. Upton
DRAWN BY: K. Tosselli
FC: 000 MP: 000
PERMANENT SIGNING
I.A.S. DWG. NO. S-18
REGISTERED PROFESSIONAL ENGINEER
14,49
OREGON
JULY 26, 1989
DOROTHY J. UPTON
FOR REVIEW ONLY
RENEWS: 06-30-2016
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12/11/2014 2:32:38 PM
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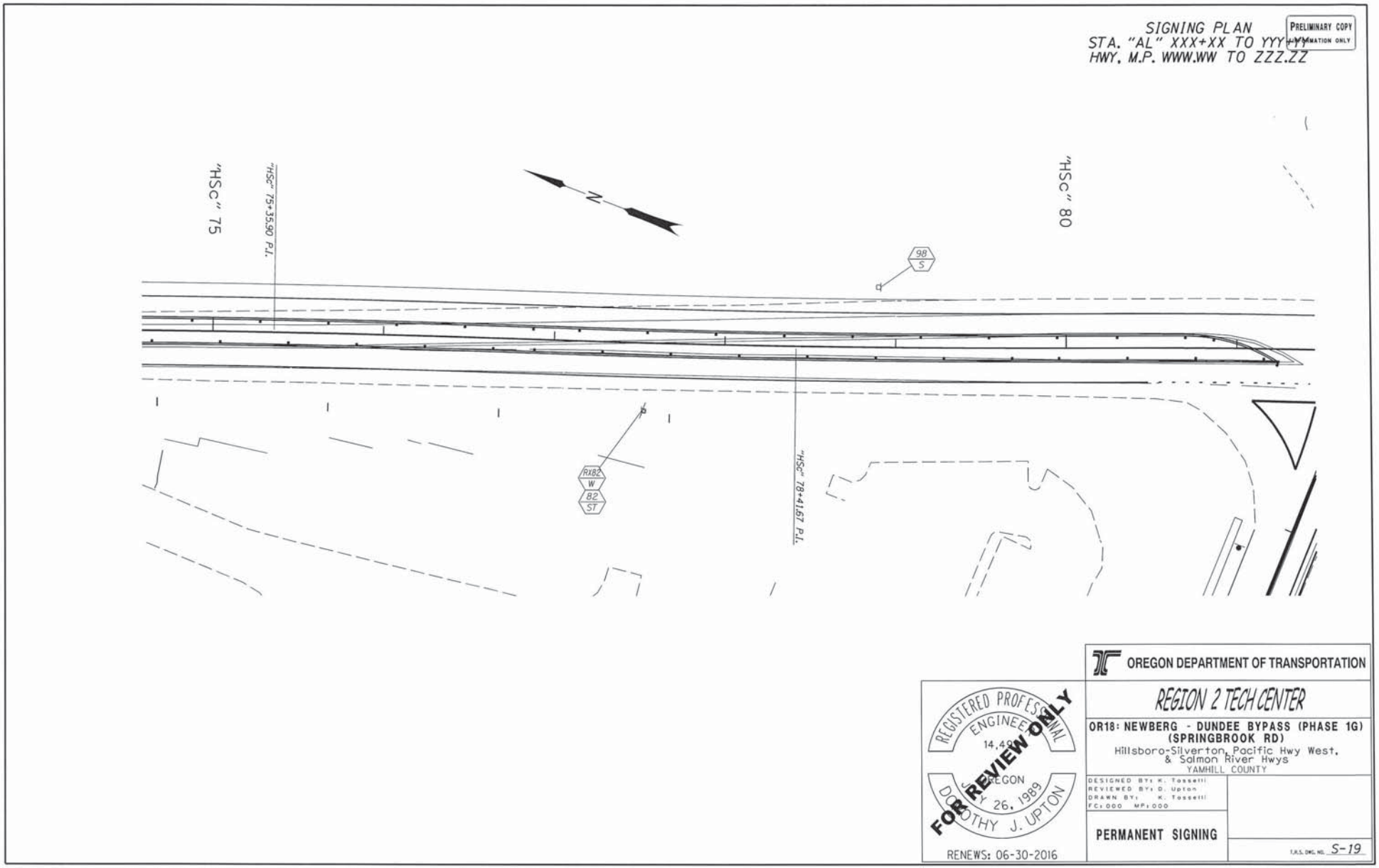
SIGNING PLAN
STA. "AL" XXX+XX TO YYY+YY
HWY. M.P. WWW.WW TO ZZZ.ZZ
PRELIMINARY COPY
INFORMATION ONLY
"HSC" 75
"HSC" 75+35.90 P.I.
"HSC" 80
N
98
S
RX82
W
82
ST
"HSC" 78+41.67 P.I.
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG - DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
Hillsboro-Silverton, Pacific Hwy West,
& Salmon River Hwys
YAMHILL COUNTY
DESIGNED BY: K. Tosselli
REVIEWED BY: D. Upton
DRAWN BY: K. Tosselli
FC: 000 MP: 000
PERMANENT SIGNING
U.S. DWG. NO. S-19
REGISTERED PROFESSIONAL ENGINEER
14,49
OREGON
JULY 26, 1989
DOROTHY J. UPTON
FOR REVIEW ONLY
RENEWS: 06-30-2016
F:\ODOT_DATA\Projects\2014\17099_NDB\1G\SIGNS\1690IF_G.sni :: Default 12/11/2014 2:32:39 PM hwye21a
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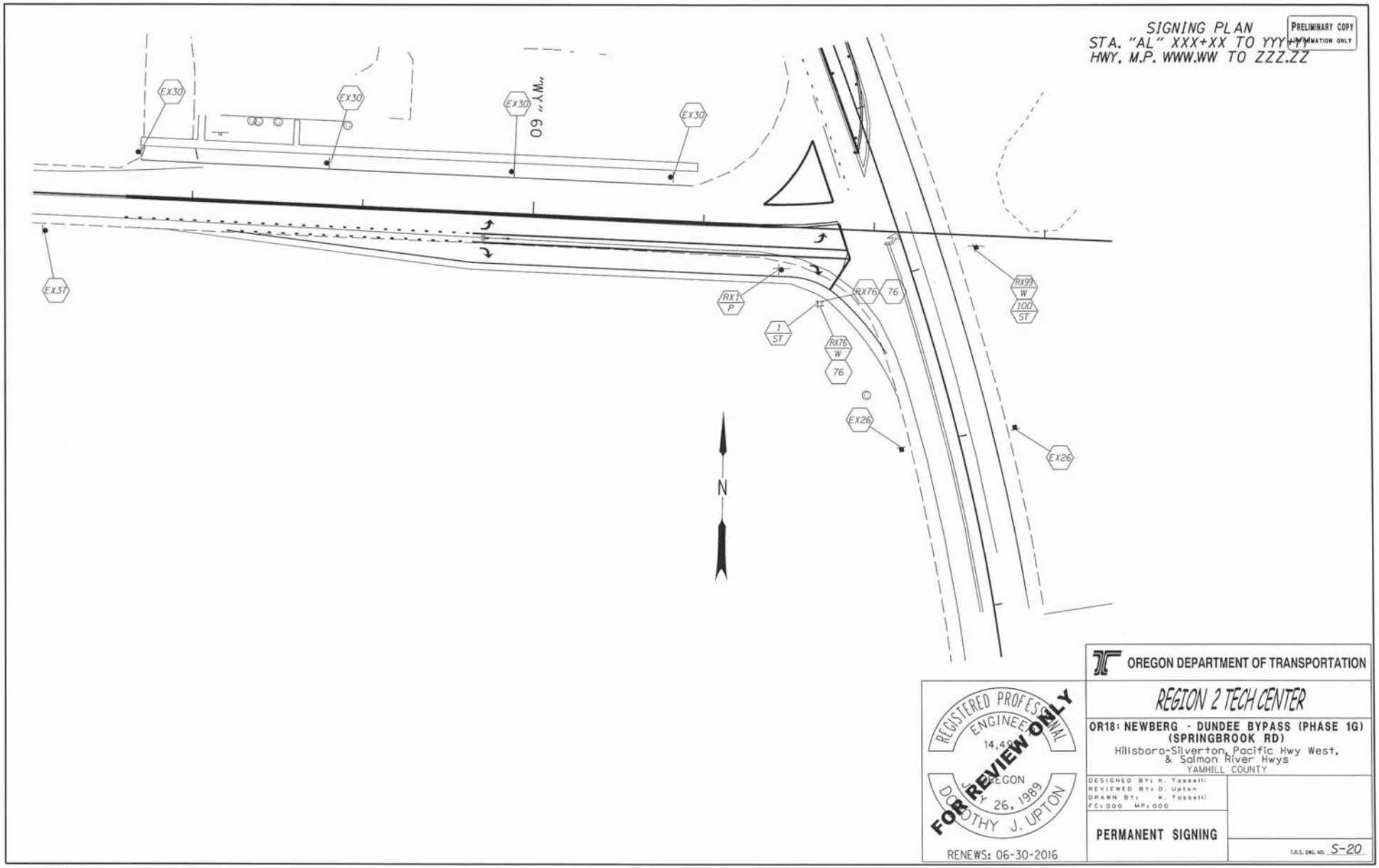
SIGNING PLAN
STA. "AL" XXX+XX TO YYY+YY
HWY. M.P. WWW.WW TO ZZZ.ZZ
PRELIMINARY COPY FOR INFORMATION ONLY
EX30
EX30
EX30
EX30
"W" 60
EX37
RX1 P
RX76
76
1 ST
RX76 W
76
RX99 W 100 ST
EX26
EX26
N
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG - DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
Hillsboro-Silverton, Pacific Hwy West, & Salmon River Hwys
YAMHILL COUNTY
DESIGNED BY: K. Tossell
REVIEWED BY: D. Upton
DRAWN BY: K. Tossell
FC: 000 MP: 000
PERMANENT SIGNING
T.R.S. DWG. NO. S-20
REGISTERED PROFESSIONAL ENGINEER
14,488
OREGON
JULY 26, 1989
DOROTHY J. UPTON
FOR REVIEW ONLY
RENEWS: 06-30-2016
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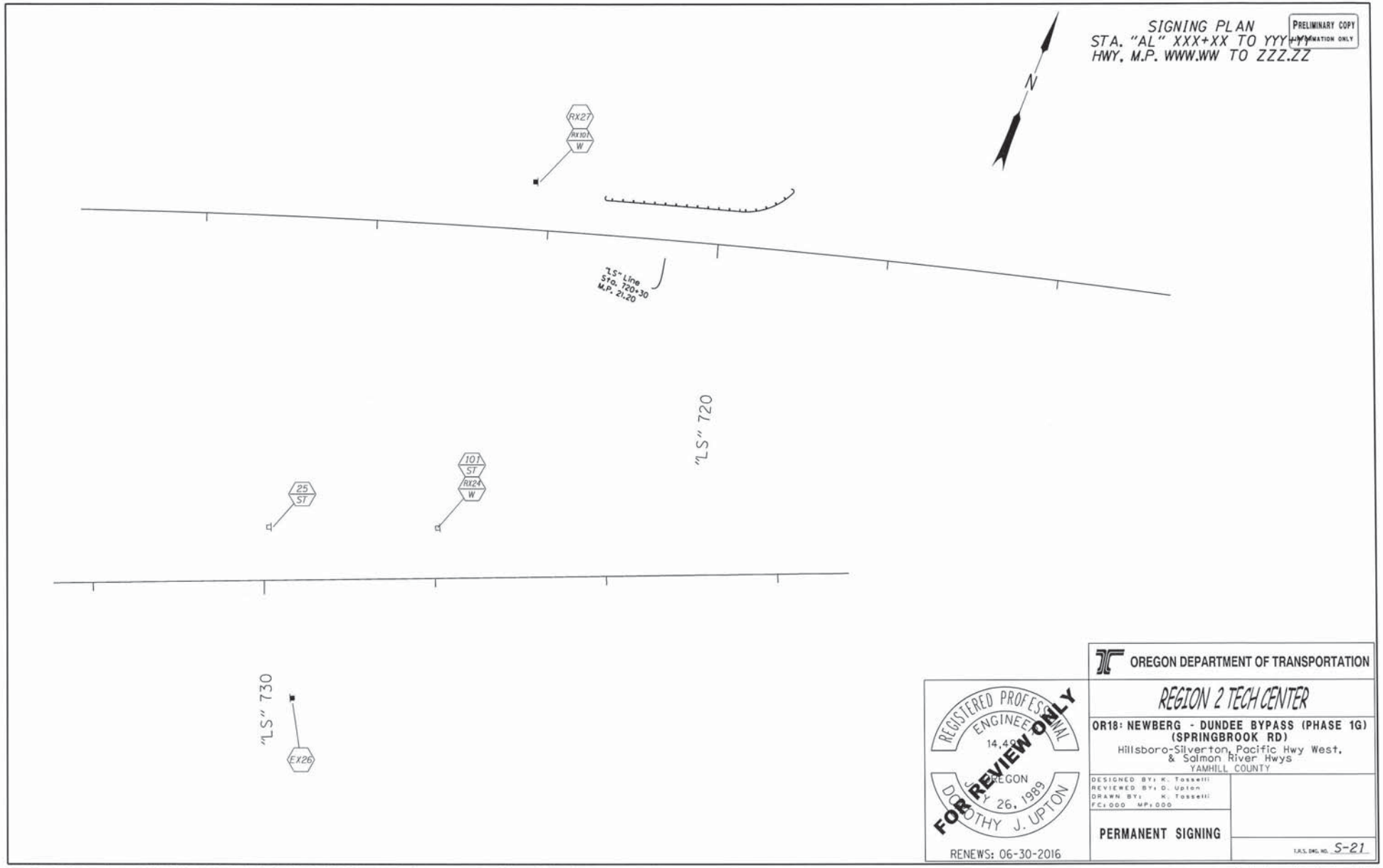
SIGNING PLAN
STA. "AL" XXX+XX TO YYY+YY
HWY. M.P. WWW.WW TO ZZZ.ZZ
PRELIMINARY COPY
INFORMATION ONLY
N
RX27
RX101
W
"LS" Line
Sta. 720+30
M.P. 21.20
"LS" 720
101
ST
RX24
W
25
ST
"LS" 730
EX26
REGISTERED PROFESSIONAL ENGINEER
14,49
OREGON
JULY 26, 1989
DOROTHY J. UPTON
FOR REVIEW ONLY
RENEWS: 06-30-2016
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG - DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
Hillsboro-Silverton, Pacific Hwy West,
& Salmon River Hwys
YAMHILL COUNTY
DESIGNED BY: K. Tossell
REVIEWED BY: D. Upton
DRAWN BY: K. Tossell
FC: 000 MP: 000
PERMANENT SIGNING
I.R.S. DWG. NO. S-21
F:\ODOT_DATA\Projects\2014\17099_NDB\16091_1G\1G\SIGNS\16901F_0.sni :: Default
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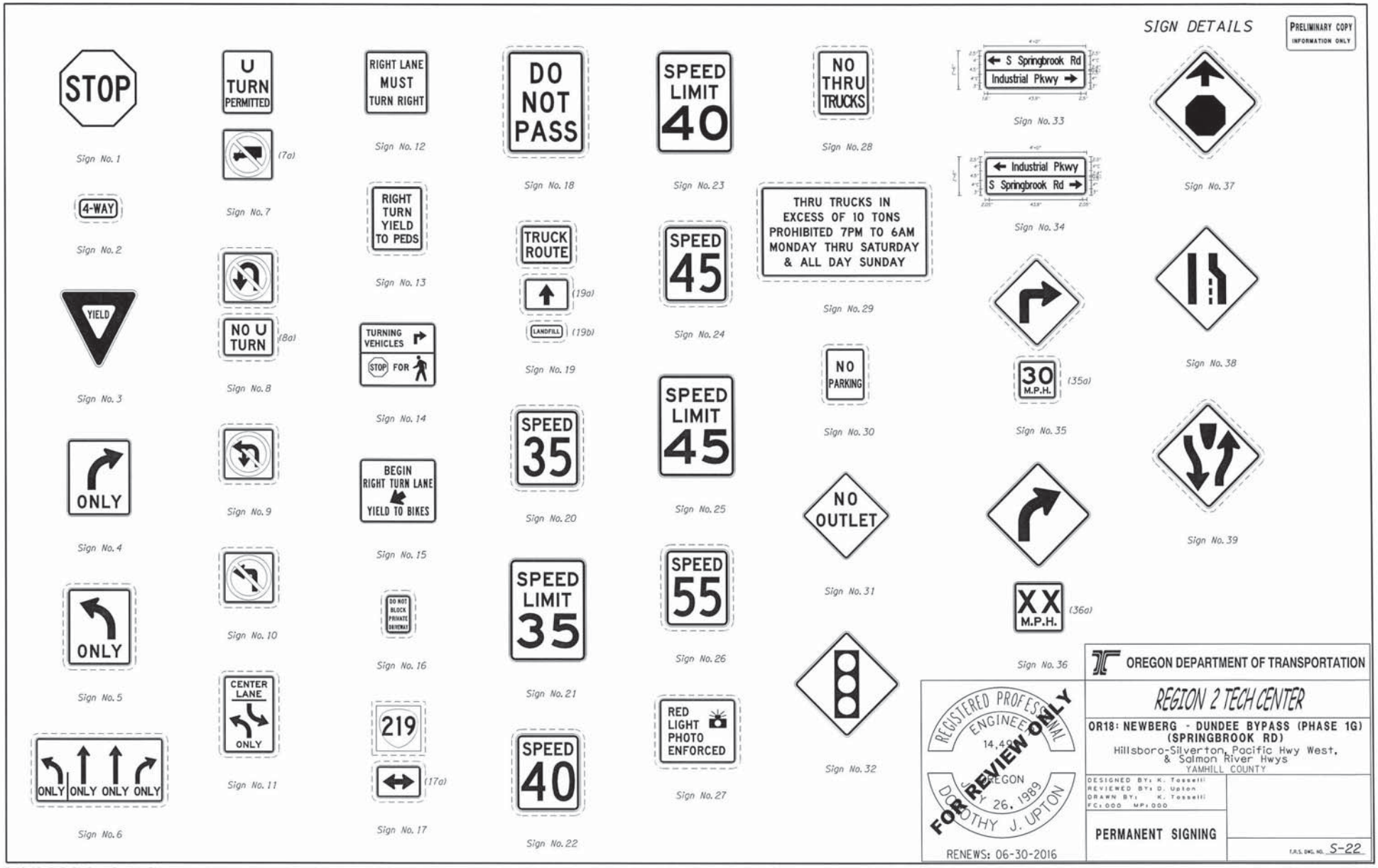
SIGN DETAILS
PRELIMINARY COPY INFORMATION ONLY
STOP
Sign No. 1
4-WAY
Sign No. 2
YIELD
Sign No. 3
ONLY
Sign No. 4
ONLY
Sign No. 5
ONLY ONLY ONLY ONLY
Sign No. 6
U TURN PERMITTED
(7a)
Sign No. 7
NO U TURN
(8a)
Sign No. 8
Sign No. 9
Sign No. 10
CENTER LANE
ONLY
Sign No. 11
RIGHT LANE MUST TURN RIGHT
Sign No. 12
RIGHT TURN YIELD TO PEDS
Sign No. 13
TURNING VEHICLES
STOP FOR
Sign No. 14
BEGIN RIGHT TURN LANE
YIELD TO BIKES
Sign No. 15
DO NOT BLOCK PRIVATE DRIVEWAY
Sign No. 16
219
(17a)
Sign No. 17
DO NOT PASS
Sign No. 18
TRUCK ROUTE
(19a)
LANDFILL
(19b)
Sign No. 19
SPEED 35
Sign No. 20
SPEED LIMIT 35
Sign No. 21
SPEED 40
Sign No. 22
SPEED LIMIT 40
Sign No. 23
SPEED 45
Sign No. 24
SPEED LIMIT 45
Sign No. 25
SPEED 55
Sign No. 26
RED LIGHT PHOTO ENFORCED
Sign No. 27
NO THRU TRUCKS
Sign No. 28
THRU TRUCKS IN EXCESS OF 10 TONS PROHIBITED 7PM TO 6AM MONDAY THRU SATURDAY & ALL DAY SUNDAY
Sign No. 29
NO PARKING
Sign No. 30
NO OUTLET
Sign No. 31
Sign No. 32
S Springbrook Rd
Industrial Pkwy
Sign No. 33
Industrial Pkwy
S Springbrook Rd
Sign No. 34
30 M.P.H.
(35a)
Sign No. 35
XX M.P.H.
(36a)
Sign No. 36
Sign No. 37
Sign No. 38
Sign No. 39
REGISTERED PROFESSIONAL ENGINEER
14,468
OREGON
JULY 26, 1989
DOROTHY J. UPTON
RENEWS: 06-30-2016
FOR REVIEW ONLY
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG - DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
Hillsboro-Silverton, Pacific Hwy West, & Salmon River Hwys
YAMHILL COUNTY
DESIGNED BY: K. Tossell
REVIEWED BY: D. Upton
DRAWN BY: K. Tossell
FC: 000 MP: 000
PERMANENT SIGNING
F.A.S. DWG. NO. S-22
THIS IS THE FILENAME LOCATION
DD-MMM-YYYY HH:MM USERNAME
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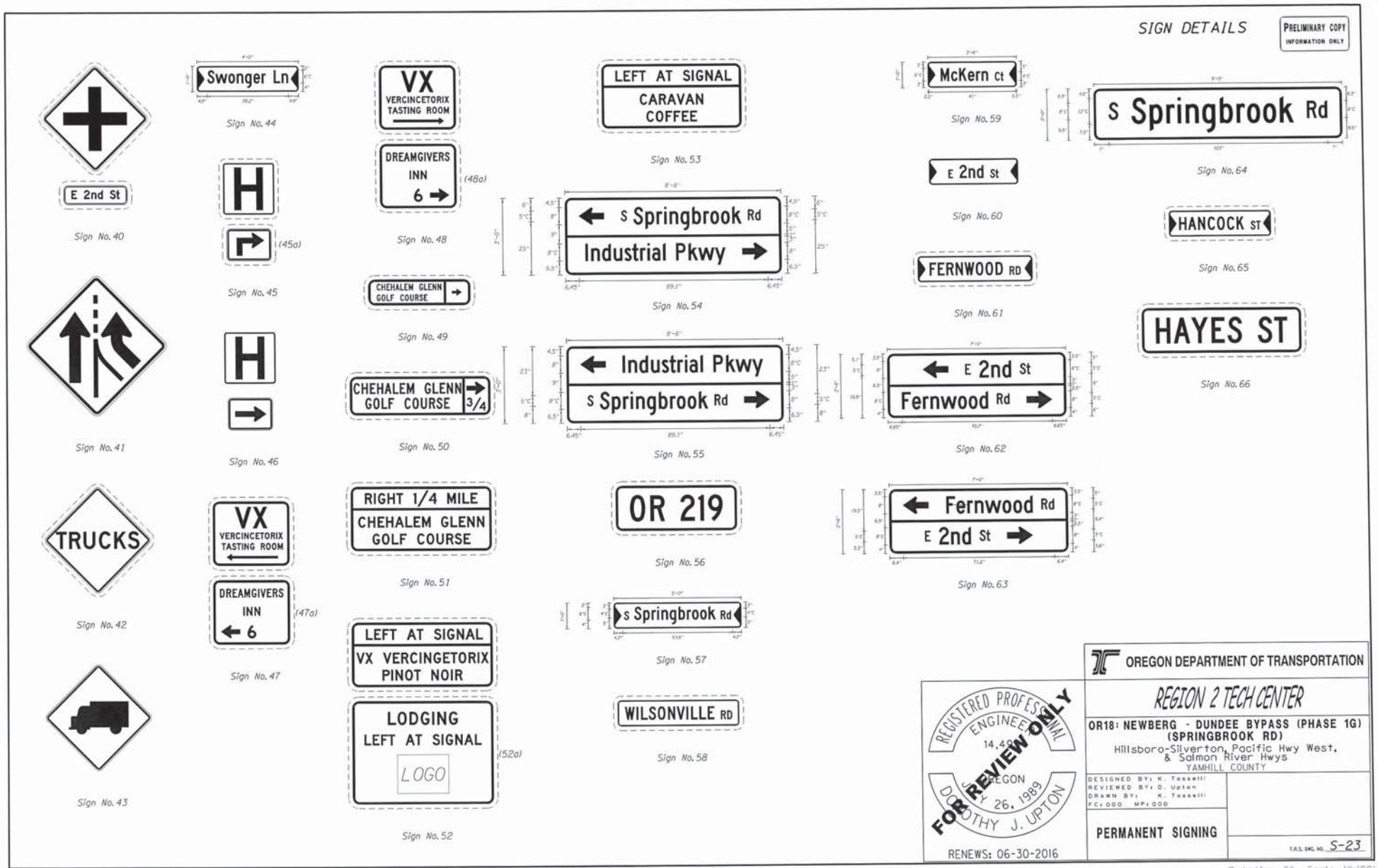
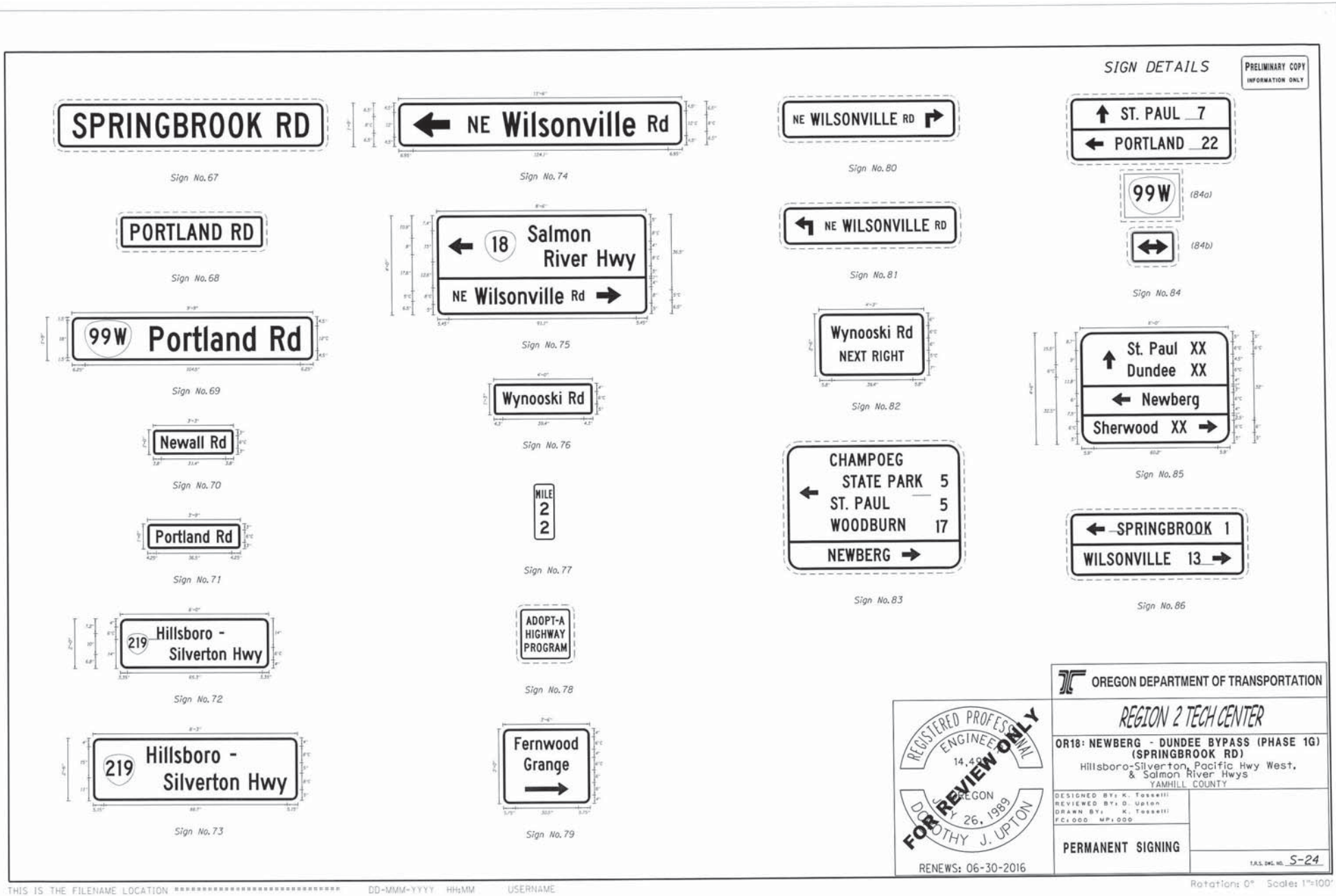

SIGN DETAILS
PRELIMINARY COPY INFORMATION ONLY
E 2nd St
Sign No. 40
Swonger Ln
Sign No. 44
VX VERCINCETORIX TASTING ROOM
DREAMGIVERS INN 6 (48a)
Sign No. 48
LEFT AT SIGNAL CARAVAN COFFEE
Sign No. 53
McKern Ct
Sign No. 59
S Springbrook Rd
Sign No. 64
(45a)
Sign No. 45
CHEHALEM GLENN GOLF COURSE
Sign No. 49
S Springbrook Rd
Industrial Pkwy
Sign No. 54
E 2nd St
Sign No. 60
HANCOCK ST
Sign No. 65
Sign No. 41
Sign No. 46
CHEHALEM GLENN GOLF COURSE 3/4
Sign No. 50
Industrial Pkwy
S Springbrook Rd
Sign No. 55
E 2nd St
Fernwood Rd
Sign No. 62
FERNWOOD RD
Sign No. 61
HAYES ST
Sign No. 66
TRUCKS
Sign No. 42
VX VERCINCETORIX TASTING ROOM
DREAMGIVERS INN 6 (47a)
Sign No. 47
RIGHT 1/4 MILE CHEHALEM GLENN GOLF COURSE
Sign No. 51
OR 219
Sign No. 56
Fernwood Rd
E 2nd St
Sign No. 63
S Springbrook Rd
Sign No. 57
Sign No. 43
LEFT AT SIGNAL VX VERCINGETORIX PINOT NOIR
LODGING LEFT AT SIGNAL LOGO (52a)
Sign No. 52
WILSONVILLE RD
Sign No. 58
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG - DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
Hillsboro-Silverton, Pacific Hwy West, & Salmon River Hwys
YAMHILL COUNTY
REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 26, 1989
DOROTHY J. UPTON
RENEWS: 06-30-2016
FOR REVIEW ONLY
DESIGNED BY: K. Tosselli
REVIEWED BY: D. Upton
DRAWN BY: K. Tosselli
FC: 000 MP: 000
PERMANENT SIGNING
T.R.S. DWG. NO. S-23
THIS IS THE FILENAME LOCATION ********** DD-MMM-YYYY HH:MM USERNAME
Rotation: 0° Scale: 1"=100'


SIGN DETAILS
PRELIMINARY COPY INFORMATION ONLY
SPRINGBROOK RD
Sign No. 67
PORTLAND RD
Sign No. 68
99W Portland Rd
Sign No. 69
Newall Rd
Sign No. 70
Portland Rd
Sign No. 71
219 Hillsboro - Silverton Hwy
Sign No. 72
219 Hillsboro - Silverton Hwy
Sign No. 73
NE Wilsonville Rd
Sign No. 74
18 Salmon River Hwy
NE Wilsonville Rd
Sign No. 75
Wynooski Rd
Sign No. 76
MILE 22
Sign No. 77
ADOPT-A HIGHWAY PROGRAM
Sign No. 78
Fernwood Grange
Sign No. 79
NE WILSONVILLE RD
Sign No. 80
NE WILSONVILLE RD
Sign No. 81
Wynooski Rd NEXT RIGHT
Sign No. 82
CHAMPOEG STATE PARK 5
ST. PAUL 5
WOODBURN 17
NEWBERG
Sign No. 83
ST. PAUL 7
PORTLAND 22
99W (84a)
(84b)
Sign No. 84
St. Paul XX
Dundee XX
Newberg
Sherwood XX
Sign No. 85
SPRINGBROOK 1
WILSONVILLE 13
Sign No. 86
OREGON DEPARTMENT OF TRANSPORTATION
REGION 2 TECH CENTER
OR18: NEWBERG - DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
Hillsboro-Silverton, Pacific Hwy West, & Salmon River Hwys
YAMHILL COUNTY
REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 26, 1989
DOROTHY J. UPTON
RENEWS: 06-30-2016
FOR REVIEW ONLY
PERMANENT SIGNING
T.R.S. DWG. NO. S-24
THIS IS THE FILENAME LOCATION ********** DD-MMM-YYYY HH:MM USERNAME
Rotation: 0° Scale: 1"=100'

SIGN DETAILS

PRELIMINARY COPY
INFORMATION ONLY

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Sign No. 91

Sign No. 95

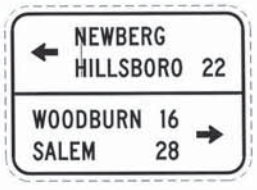
Sign No. 98

Sign No. 101

Sign No. 88

Sign No. 92

Sign No. 96



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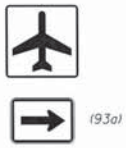

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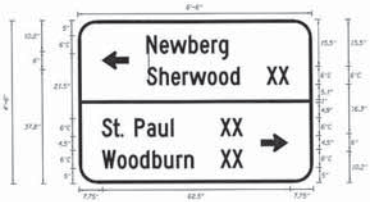

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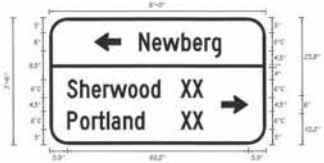


Sign No. 89

Sign No. 90

Sign No. 94

REGISTERED PROFESSIONAL ENGINEER
14,489
OREGON
JULY 26, 1989
DOROTHY J. UPTON
FOR REVIEW ONLY
RENEWS: 06-30-2016

OREGON DEPARTMENT OF TRANSPORTATION

REGION 2 TECH CENTER

OR18: NEWBERG - DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
Hillsboro-Silverton, Pacific Hwy West, & Salmon River Hwys
YAMHILL COUNTY

DESIGNED BY: K. Tosselli
REVIEWED BY: D. Upton
DRAWN BY: K. Tosselli
FC: 000 MP: 000

PERMANENT SIGNING

T.R.S. DWG. NO. S-25

THIS IS THE FILENAME LOCATION ********** DD-MMM-YYYY HH:MM USERNAME

Rotation: 0° Scale: 1"=100'

SIGN DETAILS

PRELIMINARY COPY
INFORMATION ONLY

Sign No. 102

Sign No. 104

Sign No. 106

Sign No. 103

Sign No. 105

REGISTERED PROFESSIONAL ENGINEER
14,49
OREGON
JULY 26, 1989
DOROTHY J. UPTON
RENEWS: 06-30-2016

FOR REVIEW ONLY

OREGON DEPARTMENT OF TRANSPORTATION

REGION 2 TECH CENTER

OR18: NEWBERG - DUNDEE BYPASS (PHASE 1G)
(SPRINGBROOK RD)
Hillsboro-Silverton, Pacific Hwy West,
& Salmon River Hwys
YAMHILL COUNTY

DESIGNED BY: K. Tosselli
REVIEWED BY: D. Upton
DRAWN BY: K. Tosselli
FC: 000 MP: 000

PERMANENT SIGNING

T.R.S. DWG. NO. S-26

THIS IS THE FILENAME LOCATION ********** DD-MMM-YYYY HH:MM USERNAME

Rotation: 0° Scale: 1"=100'

ORDINANCE NO. 2013-2766

AN ORDINANCE AMENDING THE TRANSPORTATION SYSTEM PLAN TO REFLECT THE PHASE 1 ALIGNMENT OF THE NEWBERG DUNDEE BYPASS

RECITALS:

1. Oregon Department of Transportation submitted an application to amend Newberg's transportation system plan (TSP) to reflect the phase 1 alignment of the Newberg Dundee Bypass project (bypass).

2. The TSP includes the full bypass alignment, which will be an 11-mile, four-lane highway around the cities of Newberg and Dundee from Highway 99W northeast of Newberg to the Highway 18 interchange south of Dundee. However, the bypass will be a phased development due to funding constraints. Phase 1 of the bypass will include construction of one lane of the bypass in each direction between Highway 219 and Highway 99W south of Dundee, and will reestablish the intersection of Wilsonville Road and Highway 219. Phase 1 will add a traffic signal to the Wilsonville Road and Highway 219 intersection and remove the current connection between Wilsonville Road and Springbrook Road. The current north-south section of Wilsonville Road between the new Highway 219 intersection and Springbrook Road will end in a cul-de-sac at the southern end. The planning commission recommended renaming that section to McKern Court.

3. The Newberg planning commission adopted Resolution No. 2013-301 on September 12, 2013, recommending city council adopt the proposed TSP amendments as shown in Exhibit "A" and based on the findings in Exhibit "D". Exhibit "B" shows details of the new road configurations, and Exhibit "C" shows the full layout of the phase 1 bypass.

THE CITY OF NEWBERG ORDAINS AS FOLLOWS:

1. The Newberg transportation system plan is hereby amended as shown in Exhibit "A", based on the findings in Exhibit "D", and as shown on the maps in Exhibits "B" and "C". Exhibits "A", "B", "C", and "D" are hereby attached and by this reference incorporated.

2. The remaining portion of Wilsonville Road between the new cul-de-sac and Springbrook Road will be renamed to McKern Court.

- **EFFECTIVE DATE** of this ordinance is 30 days after the adoption date, which is: January 2, 2014.

ADOPTED by the City Council of the City of Newberg, Oregon, this 2nd day of December, 2013, by the following votes: **AYE: 6 NAY: 1 [HOWARD] ABSENT: 0 ABSTAIN: 0**

Norma I. Alley

Norma I. Alley, MMC, City Recorder

ATTEST by the Mayor this 5th day of December, 2013.

Bob Andrews, Mayor

TSP Text Amendment

The following text amendment should be made to section 6.2.2(6) of the Newberg Transportation System Plan (2005). Deletions are shown as ~~strikethrough~~; additions are shown as double underline:

(From page 123 of 2005 TSP.)
6. *Wilsonville Road*: ~~Wilsonville Road is to be rerouted to the north to cross the Bypass (without an interchange) and to intersect with Springbrook Street. Wilsonville Road will then extend westward from its intersection with Springbrook Street to a new signalized intersection with Ore 219 at about 8th Street. The reroute and extension of Wilsonville Road will be constructed to minor arterial street standards. The purpose of this project is to provide adequate spacing of intersections on Ore 219 from the proposed interchange with the bypass. The cost of this project is estimated at about $2.0 million, and will be funded by ODOT as a safety improvement project. The improvement will comply with spacing standards as defined in the NDTIP bypass project. Moreover, this project will be full considered and potentially modified under the context of the NDTIP Bypass/Ore 219 Interchange Area Management Plan. This project is included as a Safety Project in the Statewide Transportation Improvement Program, 2002-2005, Key#09274. See Appendix "N" for a conceptual plan of this project.~~ Wilsonville Road is to be extended to the west to connect to Oregon 219. A cul-de-sac will be placed on Wilsonville Road between the new extension to Oregon 219 and Springbrook Road. The rerouting and extension of Wilsonville Road will be constructed to minor arterial street standards. The purpose of this project is to provide access to Phase 1 of the Bypass at acceptable levels of service and improve safety. The improvement will comply with ODOT spacing standards for a District Highway. The future Phase 2 of the Bypass will disconnect the new intersection of Wilsonville Road and Oregon 219. During Phase 2 construction, Wilsonville Road will be rerouted further south to a new intersection with Oregon 219.

Exhibit "A"
To Ordinance No. 2013-2766

Revised Figure 6-1

Excerpt from Figure 6-1, Functional Classification Plan, Newberg TSP (2005)

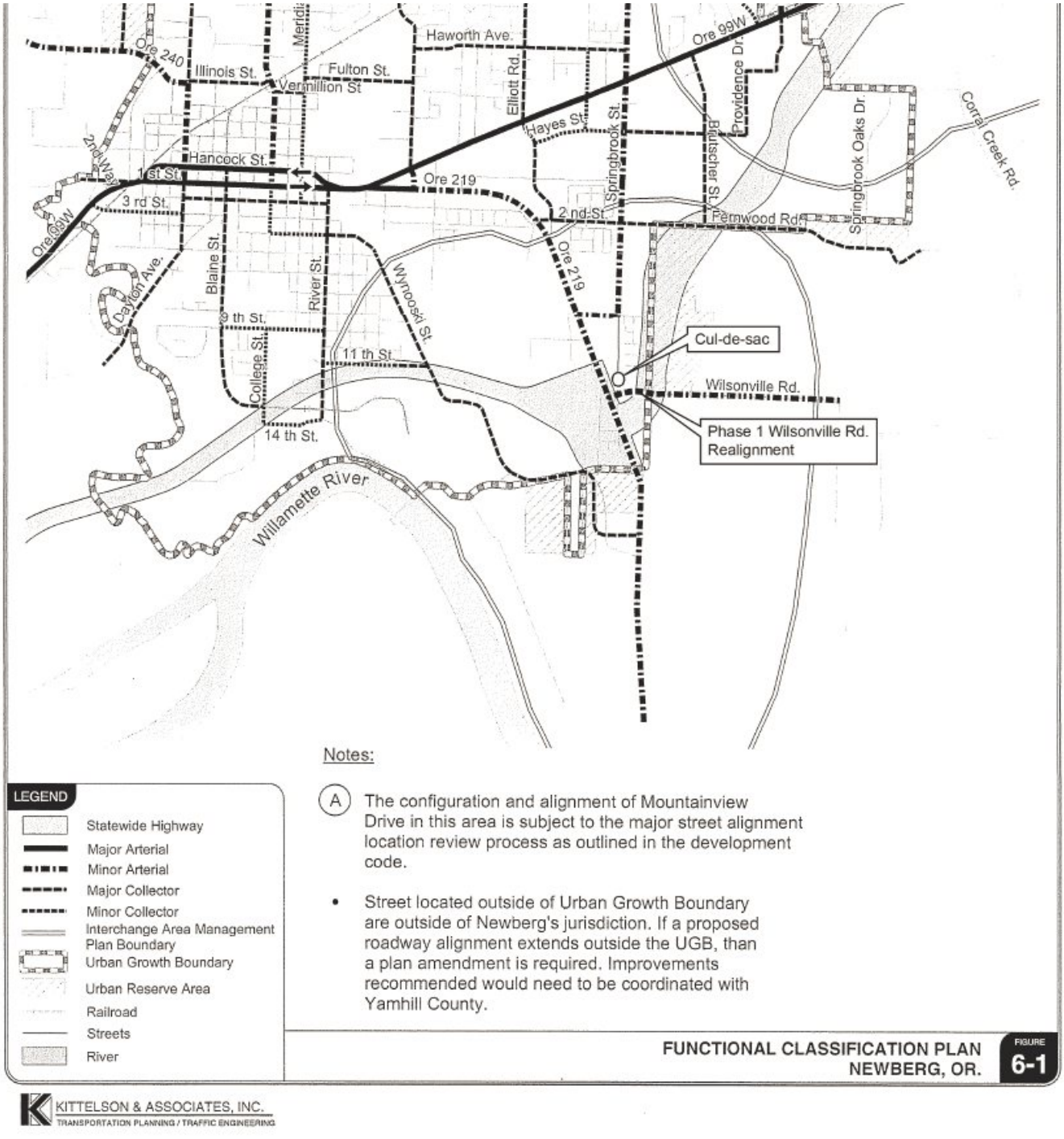
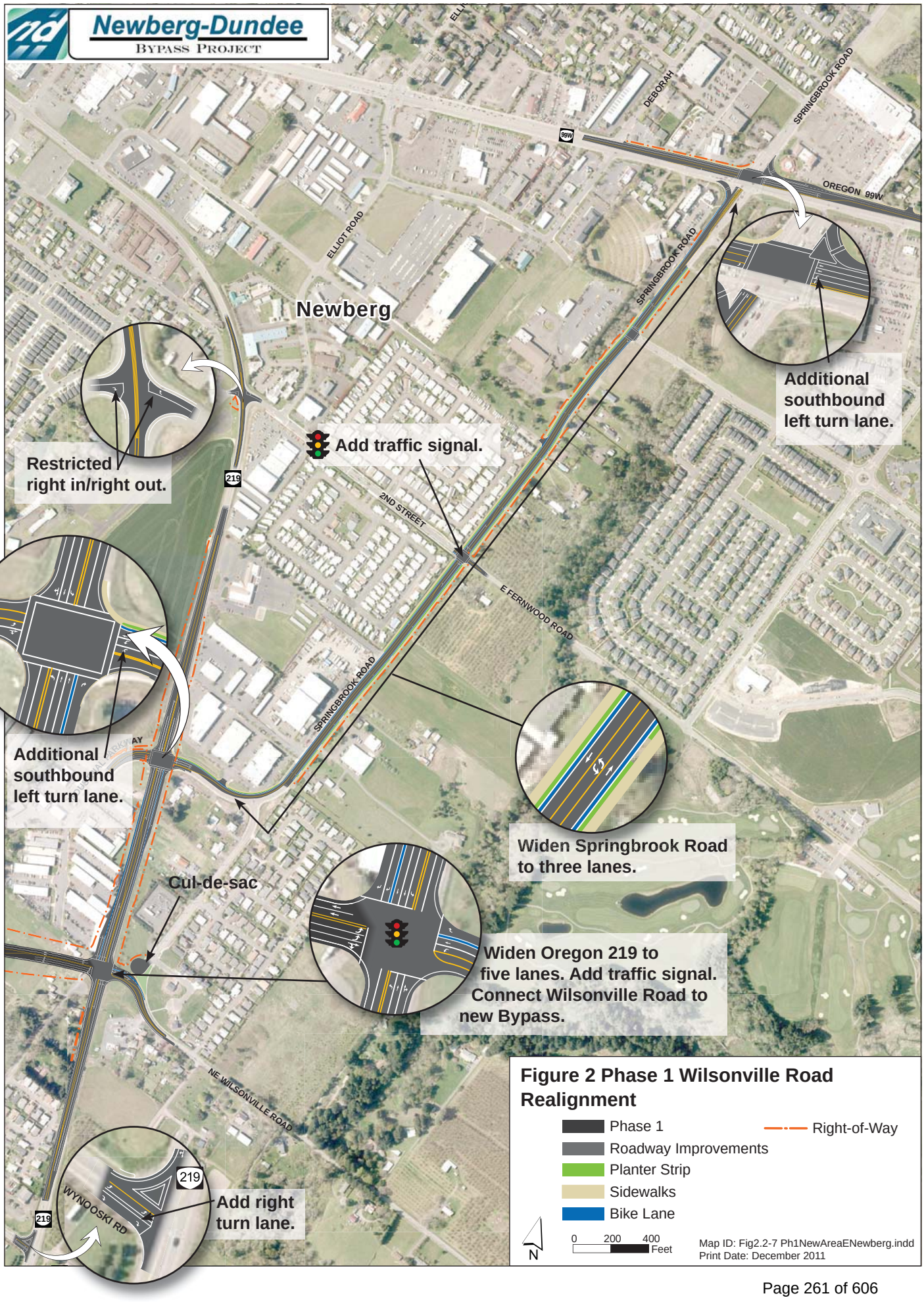
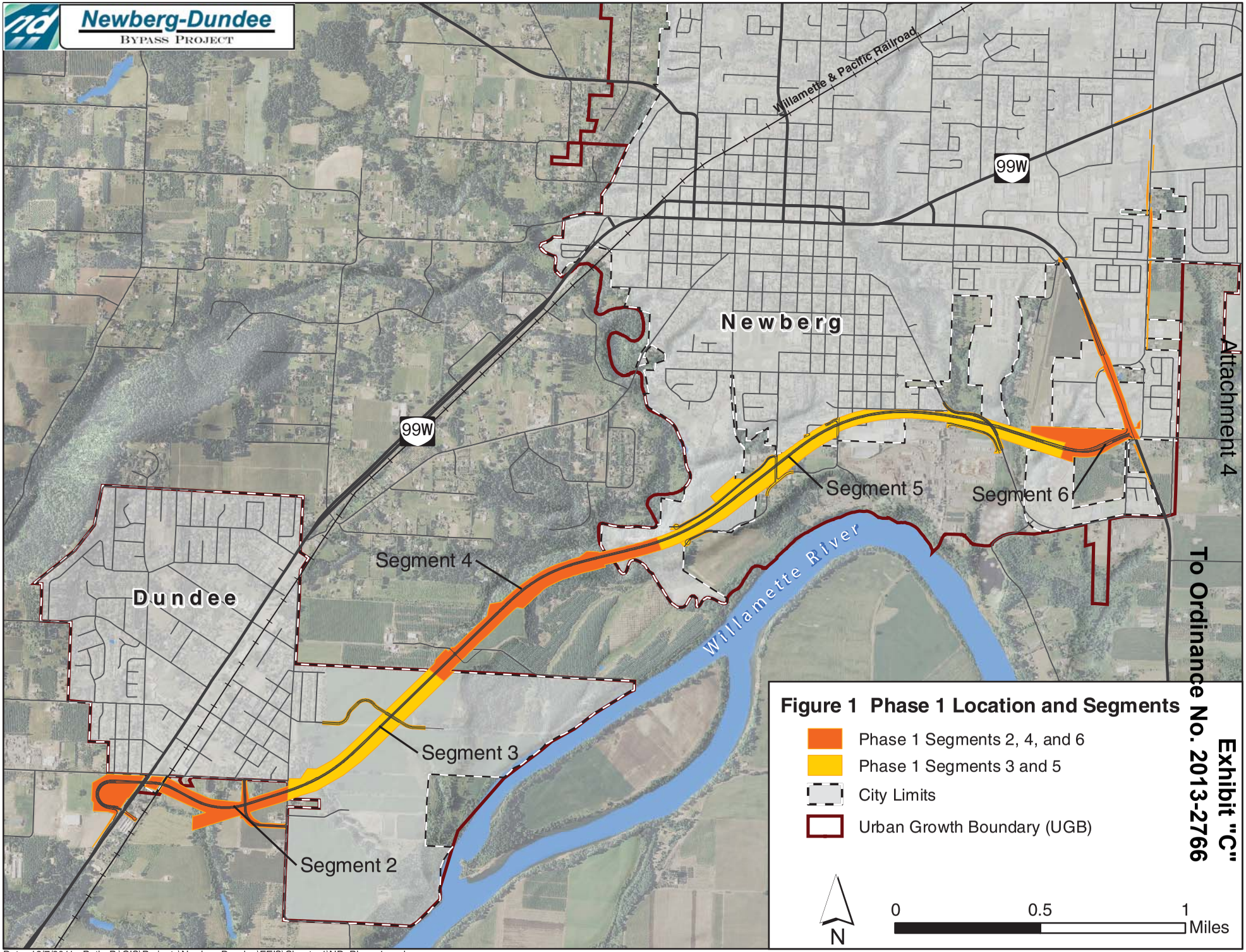


Exhibit "B"
To Ordinance No. 2013-2766





Date: 12/7/2011 Path: P:\GIS\Projects\NewbergDundee\FEIS\Chapter1\ND_Phase1.mxd

Findings

Transportation System Plan (TSP) amendments must be consistent with the Newberg Comprehensive Plan and the applicable statewide planning goals.

Newberg Comprehensive Plan – applicable goals and policies

A. Citizen Involvement

GOAL: To maintain a Citizen Involvement Program that offers citizens the opportunity for involvement in all phases of the planning process.

Section A, Citizen Involvement, notes that the city will continue to implement an ongoing citizen involvement program that provides residents opportunity to be involved in all phases of the planning process. For the Wilsonville Road realignment, the city will provide public notice to affected property owners, opportunities for testimony at public hearings, and opportunities for appeal of local decisions.

B. Land Use Planning

GOAL: To maintain an ongoing land use planning program to implement statewide and local goals. The program shall be consistent with natural and cultural resources and needs.

The proposed TSP amendments are consistent with the land use planning goal because they will help implement Phase 1 of the Bypass which is an approved project in the Newberg TSP and Comprehensive Plan.

H. The Economy

GOAL: To develop a diverse and stable economic base.
Policy 1.o. The City shall collaborate with other public and private entities and project developers to construct and maintain the best surface transportation infrastructure possible (e.g. roads, airpark, railroad).

The Phase 1 Bypass Project, including the Wilsonville Road realignment, will improve mobility and accessibility in general, and freight movement in particular, throughout the Newberg Dundee urban area, thus resulting in substantially reduced congestion and hours of delay when compared to a No Build Alternative. This supports the goal of developing a diverse and stable economic base.

K. Transportation

Policy1.f. The City shall coordinate with Yamhill County and the State on the development of the Newberg Dundee Bypass.

The city is directly coordinating with ODOT and Yamhill County on the development of the Bypass. The TSP currently contains the full Bypass alignment, which will be an 11-mile, four-lane highway around the

cities of Newberg and Dundee from Highway 99W northeast of Newberg to the Highway 18 interchange south of Dundee. However, funding constraints preclude full construction of the Bypass at this time, and the Bypass will be a phased development. The proposed TSP amendments are necessary to implement Phase 1 of the Bypass.

M. Energy

GOAL: To conserve energy through efficient land use patterns and energy-related policies and ordinances.

The Bypass project, including Phase 1 and the Wilsonville Road realignment, is intended to improve statewide and regional mobility through the area and to make existing Highway 99W more accessible for local and regional traffic. The project will help relieve much of the substantial traffic congestion that currently exists along Highway 99W. Facilitating the smooth flow of traffic at acceptable levels of service also helps conserve fuel by avoiding the wasteful burning of fuel at intersections already above capacity or expected to exceed capacity during the planning period.

Oregon Statewide Planning Goals – applicable goals

Goal 1 (Citizen Involvement)
Goal 1 requires the opportunity for citizens to be involved in all phases of the planning process. Generally, Goal 1 is satisfied when a local government follows the public involvement procedures set out in its acknowledged comprehensive plan and land use regulations.
The City of Newberg Comprehensive Plan requires the city maintain a Citizen Involvement Program that offers citizens the opportunity for involvement in all phases of the planning process. Compliance with these regulations results in compliance with Goal 1.

Goal 2 (Land Use Planning), Part I
Goal 2, Part I requires that actions related to land use be consistent with acknowledged comprehensive plans of cities and counties. It is specifically noted that the City of Newberg updated the Comprehensive Plan to include the Newberg Dundee Bypass.

Goal 2, Part I also requires coordination with affected governments and agencies, evaluation of alternatives, and an adequate factual base. In developing the Wilsonville Road realignment, ODOT engaged in coordination efforts with planners, officials, and other representatives of Newberg. The amendment also is consistent with the Phase 1 Bypass as authorized by the Oregon Legislature and approved by Yamhill County.

Goal 5 (Open Spaces, Scenic and Historic Areas, and Natural Resources)
Goal 5 requires local governments to adopt programs to protect natural resources and conserve scenic, historic, and open space resources for present and future generations as provided in the Oregon Department of Land Conservation and Development's Goal 5 administrative rule, OAR 660, Division 23. Under OAR 660-023-0250(3)(b), local governments are not required to apply Goal 5 in post-acknowledgment plan amendment proceedings unless the amendment affects a Goal 5 resource to allow new uses that could be conflicting uses with a particular significant Goal 5 resource site. The Wilsonville

Road realignment does not impact any resource sites inventoried and designated as significant under Goal 5. Therefore, Goal 5 does not apply.

Goal 6 (Air, Water and Land Resources Quality)
Goal 6 addresses the quality of air, water, and land resources. In the context of a comprehensive plan amendment, a local government complies with Goal 6 by explaining why it is reasonable to expect that the proposed uses authorized by the plan amendment will be able to satisfy applicable federal and state environmental standards, including air and water quality standards. Because the Wilsonville Road realignment is part of Phase 1, which provides the first step in implementing the Bypass project, and because the Bypass project is an approved project in the City of Newberg's acknowledged TSP and Comprehensive Plan, the Wilsonville Road realignment is consistent with the City's TSP and Comprehensive Plan findings of compliance with Goal 6.

By substantially relieving congestion in the region, the Bypass project will improve air quality. This 2013 amendment will help substantially relieve congestion in the region by facilitating implementation of Phase 1. Like the Bypass project in its entirety, the Wilsonville Road realignment will impact water resources by adding a small amount of impervious surface to the watershed area. Where areas are paved, water cannot penetrate the soils, so it rushes over the surface. This can increase erosion, increase the movement of fine sediments, and increase pollutant loads in watercourses. However, these impacts can adequately be mitigated through the use of effective land-based stormwater treatment systems that include measures to preserve and restore mature vegetation and maximize infiltration. The use of construction techniques that include temporary and permanent best management practices (BMPs) for erosion and sediment control and spill control and prevention also can achieve compliance with clean water standards. OHP 5A.1 directs ODOT to implement BMPs. These BMPs will apply to development of JTA Phase 1. Mitigation strategies have been identified and agreed to in the Newberg Dundee Tier 2 Final EIS.

Stormwater is also subject to statewide permits that are issued to ODOT. For construction activities, ODOT will comply with the terms and conditions of its statewide National Pollution Discharge Elimination System (NPDES) permit: 1200-CA. ODOT will also comply with the terms and conditions of its statewide MS4 permit for ongoing maintenance and operation of the highway. To comply with the terms of the permits, ODOT follows BMPs set out in the *Routine Road Maintenance Water Quality and Habitat Guide*, or Blue Book, which details the standard maintenance activities and describes how to perform them in the most environmentally sensitive way. The Blue Book, first published in 1999, is the basis for Endangered Species Act compliance with the National Marine Fisheries Service under the Clean Water Act's 4(d) exemption for maintenance activities. Goal 6 is met.

Goal 8 (Recreational Needs)
Goal 8 provides for local governments to meet the recreational needs of the citizens of Oregon. The Bypass project, including the Wilsonville Road realignment, will further Goal 8's objectives by improving access to recreational destination areas such as the Oregon coast, Yamhill County wineries, and the Spirit Mountain Casino. The proposed road realignment will not impact existing park or recreational lands.

Goal 9 (Economic Development)
Goal 9 requires local governments to adopt comprehensive plans and policies that "contribute to a stable and healthy economy in all regions of the state." The City of Newberg's Comprehensive Plan has been acknowledged to comply with Goal 9. The Bypass project, including the Wilsonville Road realignment to

implement Phase 1, will improve mobility and accessibility generally, and freight movement in particular, throughout the Newberg Dundee urban area, thus resulting in substantially reduced congestion and hours of delay when compared to a No Build Alternative.

Goal 10 (Housing)
Goal 10 applies inside urban growth boundaries. While the Wilsonville Road realignment is within land zoned as medium-density residential, there are no impacts to housing, because the road will be placed on land that was previously roadway. Wilsonville Road will be reconnected to Highway 219 in its previous location. Therefore, this action is consistent with Goal 10.

Goal 12 (Transportation)
Goal 12 requires local governments to "provide and encourage a safe, convenient, and economic transportation system." Goal 12 is implemented through the Transportation Planning Rule (TPR), OAR 660, Division 12. Because the Newberg Dundee Bypass Project is an approved project in the City of Newberg's acknowledged TSP, and the Wilsonville Road realignment is necessary to implement Phase 1 of the project, it is consistent with Goal 12 and with the TPR planning and coordination requirements. The Wilsonville Road realignment will improve connectivity between the Bypass, Highway 219 and Wilsonville Road and avoid violating roadway performance standards on Springbrook Road by severing the connection between the two roads. The new intersection of Wilsonville Road and Highway 219 will operate within ODOT's performance standards.

Goal 13 (Energy Conservation)
Goal 13 directs cities and counties to manage and control land and uses developed on the land to maximize the conservation of all forms of energy, based on sound economic principles. The Bypass project, including JTA Phase 1 and the Wilsonville Road realignment, is intended to improve statewide and regional mobility through the area and to make existing Highway 99W more accessible for local and regional traffic. The project will help relieve much of the substantial traffic congestion that already exists along Highway 99W and that will only deteriorate further in its absence. Providing safe and convenient travel through an area and facilitating the efficient movement of people, goods, and services in that area serves the growth needs and objectives of the region and the state, and follows sound economic principles. Facilitating the smooth flow of traffic at acceptable levels of service also helps conserve fuel by avoiding the wasteful burning of fuel at intersections already above capacity or expected to exceed capacity during the planning period.

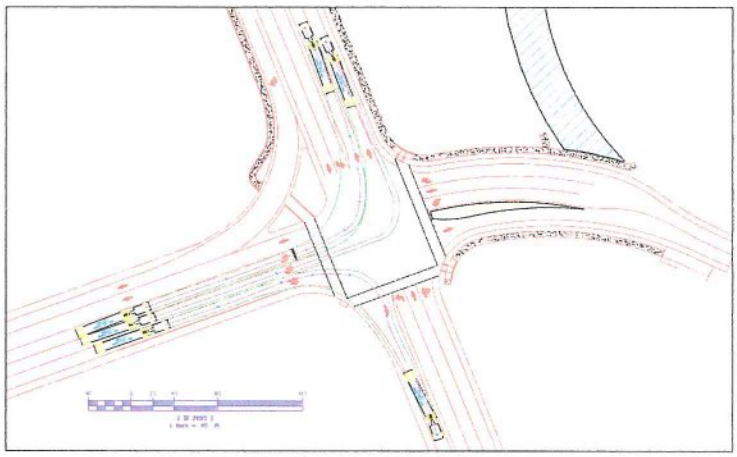
SUBMISSION PACKAGE (Part 1) to
NEWBERG CITY COUNCIL & NEWBERG CITY PLANNING COMMISSION

From Bypass Impact Coalition – Ladd Hill Neighborhood Association (LHNA)

Sections:

ODOT Option 1 Current 'Thru-Thru' Design

Hwy 219



Wilsonville Rd. Realigned

N

Bypass Eastern Terminus

ODOT 'No-Thru' Design re TSP Amendment

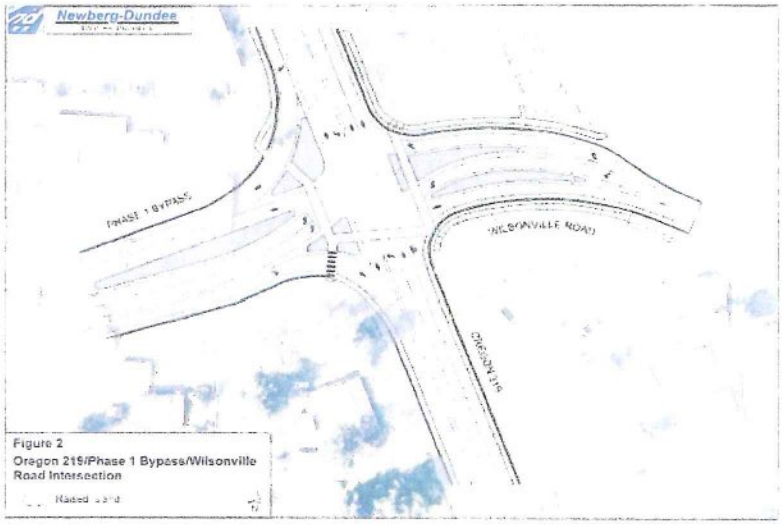


Figure 2
Oregon 219/Phase 1 Bypass/Wilsonville Road Intersection

1.01

SUBMISSION PACKAGE (Part 1*) to
NEWBERG CITY COUNCIL & NEWBERG CITY PLANNING COMMISSION
From Bypass Impact Coalition – Ladd Hill Neighborhood Association (LHNA)

OVERVIEW

This Submission Package is a compilation of many years of data, analysis, testimony, letters, photos, etc. assembled by the Bypass Impact Coalition – Ladd Hill Neighborhood Association (LHNA). It is intended to provide the Newberg City Council, Newberg City Planning Commission, and others with a comprehensive look at the issues surrounding the intersection of the Phase 1 Newberg Dundee Bypass/OR Hwy219/Wilsonville Rd.

We recognize that SE Newberg will be greatly impacted by the current Phase 1 design. Unfortunately, this cannot be corrected until we collectively push for funding and rapid completion of the entire Bypass, which we all would welcome. By not finishing the Bypass, all parties have realized that the Newberg & Dundee 99W traffic has simply been shifted to Springbrook Rd.

All of the analysis we've conducted and reviewed points to the 'no-through' option as having minimal impact on local streets: 2-to-4% over the expected traffic to and from the Bypass, which translates to less than 1 additional vehicle per two minutes during peak hour. Conversely, the current 'through-through' option has the potential to flood Wilsonville Rd., the City of Wilsonville and the I-5 Exit 283 interchange with significant increases in traffic from commuters and those going between I-5, I-205 and McMinnville or points beyond. To quote Paul Mather, ODOT's Highway Division Administrator: *"ODOT never intended Wilsonville Rd. to become an outlet for the Bypass".* He said this to the House Transportation & Economic Development Committee Chair & Vice-Chair and LHNA Sept 30, 2015.

The Bypass Impact Coalition – Clackamas & Yamhill Counties, the City of Wilsonville, the West Linn-Wilsonville School District, Legislative Representatives, etc., along with several of the most impacted residential communities – have all been expressing their public safety concerns to ODOT and the FHWA for years. It is time to do the right thing and support ODOT's 'no-through' design option in the proposed TSP Amendment now under consideration.

* There is additional data and analysis that will be submitted in Part 2 early Dec 2015 along with a DVD containing all files.

Submissions to Newberg City Planning Commission and City Council (2015-11-20v10) – Part I					
Category	***#***	***Description***	***Date***	***Author/Source***	***File Name or URL***
Overview	**1.00**				
Submission Package Overview	1.01	Short Introduction to this Submission Package	15-Nov-15	Stan Halle Bypass Impact Committee Chair (LHNA)	LHNA SubmissionPkgOverview 2015-11-19v2.docx
Table of Contents	1.02	11 Sections of Analysis, Data, Letters, eMail, Minutes, Reports, Testimony, Pictures, Video, etc.	15-Nov-15	Compilation from Multiple Sources	NCC,NCPC Submissions2015-11-15v6.xlsx
Timeline Part 1	1.03	May 2002 thru Jan 2015: References to key newsletters, documents, meetings, etc.	17-Jan-15	Compilation from Multiple Sources	Bypass Timeline Summary 20150117v6Part1.doc
Timeline Part 2	1.04	Jan 2015 thru Present: References to key newsletters, documents, meetings, etc.	15-Nov-15	Compilation from Multiple Sources	Bypass Timeline Summary 20151114v3Part2.docx
Analysis	**2.00**				
	2.01	Wilsonville Rd. Analyzed Traffic Counts	1-Jul-13	William Ciz, Parametrix	07-01-2013 Memo from William Ciz.pdf
	2.02	eMails re Parametrix & Kittleson recognition of modeling & analysis inadequacies; compiled over ~18 months	12-Nov-13	Julia Kuhn, Kittleson; Brent Ahrend, Mackenzie Engineering	eMailChain re Parametrix-Kittleson re WilsonvilleRdImpactAnalysis 2013-11-13.pdf
	2.03	Newberg Bypass Review: Wilsonville Rd. Impacts	14-Nov-13	Brent Ahrend, Mackenzie Engineering	MacKenzie Report 20131114.pdf
	2.04	Wilsonville Rd. Impacts: Options for 2016 & 2035; 5 Intersections	23-Jun-14	Brent Ahrend, Mackenzie Engineering	55103-Figures 2014-06-14.pdf
	2.05	Letter to LHNA: Newberg Dundee Phase 1 Bypass - Wilsonville Road Alignment Summary of Modeling Review and Potential Effect	15-Dec-14	Brent Ahrend, Mackenzie Engineering	LTR-Ladd Hill Neighborhood Association-Summary of Modeling Review and Potential Effect-141215.pdf
	2.06	Summary of Modeling Review & Potential Effects (to LHNA)	15-Jan-15	Brent Ahrend, Mackenzie Engineering	LTR-Ladd Hill Neighborhood Association-Summary of Modeling Review and Potential Effect-20150116Final
	2.07	Signalized Intersection Capacity Analysis of Hwy 219/Bypass/Wilsonville Rd. – Peak Hour Base vs. No-through Design for both 2016 & 2035	16-Feb-15	Brent Ahrend, Mackenzie Engineering	2016 (Base) - Report.pdf; 2016 (No Throughs) - Report.pdf; 2035 (Base) - Report.pdf; 2035 (Base) - Report.pdf; 2035 (No Throughs)- Report.pdf
	2.08	Summary Analysis Letter to City of Newberg	21-Apr-15	Brent Ahrend, Mackenzie Engineering	LTR-City of Newberg-Wilsonville Road at Highway 219-150421.pdf
	2.09	eMails re ODOT Model Inadequicies	9-May-15	Christina McDaniel-Wilson, ODOT; Brent Ahrend, Mackenzie Engineering	eMail Chain re ODOT Model Inadequicies 2015-05-09.pdf
	2.10	Newberg-Dundee Bypass: Wilsonville Rd. at Hwy 219 (7pg Summary of 154 report; rest is on DVD)	21-May-15	Brent Ahrend, Mackenzie Engineering	LTR-City of Newberg-Wilsonville Road Alignment Analysis-150522.pdf
Data	**3.00**				

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1.25

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	3.01	Driveway Count on Wilsonville Rd. from Kinsman Rd. to Springbrook Rd.	5-Nov-14	Physical count made by Sharon & Stan Halle	Wilsonville Rd DrivewayCounts 20141105.pdf
	3.02	19 Years Crash Data	16-Jan-15	Clackamas & Yamhill Counties	WilsonvilleRd Crashes 1995-2013 v2.xlsx
	3.03	Traffic Counts (Both Counties) 1999-2011	16-Jan-15	Clackamas & Yamhill Counties	Traffic Counts Yamhill and Clackamas.pdf
	3.04	Accident Reports (Clackamas County)	20-Jan-15	Clackamas County Sheriff's Department	CC Wilsonville Rd. 10yrAccidents2015-01-20.pdf
	3.05	Wilsonville Road Motor Vehicle Collisions: Incidents per Year	25-Feb-15	Tualitin Valley Fire & Rescue	TVFR Report 2015-02-25 Pg 63.pdf
Bypass Coalition Letters & eMail, Replies	**4.00**				
	4.01	Clackamas Conty Commission Chair Letter to ODOT/Garrett & FHWA/Ditzler	4-Feb-15	John Ludlow, Chair	CC Ltr to ODOT reBypass 20150204.pdf
	4.02	Newberg-Dundee Bypass – Impact on Wilsonville Rd.	6-Mar-15	Yamhill County All 3 Commissioners	Newberg-Dundee Bypass 030615 YC.pdf
	4.03	City of Wilsonville Letter to ODOT/Garrett & FHWA/Ditzler	11-Mar-15	Tim Knapp, Mayor	03-11-2015 Newberg-Dundee BypassImpacts on Wilsonville Road_1.PDF
	4.04	West Linn-WilsonvilleSchool District Letter to ODOT/Garrett & FHWA/Ditzler	1-Apr-15	Tim Woodley, Dir Operations	Dundee Bypass at Wilsonville Rd WLWSchDst 2015-04-01.pdf
	4.05	Clackamas Conty Commission Chair Letter to ODOT/Garrett & FHWA/Ditzler	6-Apr-15	John Ludlow, Chair	JL Dundee ltr 20150406.pdf
	4.06	Newberg-Dundee Bypass – Impact on Wilsonville Rd.	7-Jul-15	John Ludlow, Chair	Newberg-Dundee.ltr.07.07.15.pdf
	4.07	Newberg-Dundee Bypass – Impact on Wilsonville Rd.	16-Jul-15	Yamhill County 2 of 3 Commissioners	Newberg-Dundee Bypass 071615 YC.pdf
	4.08	Letter to ODOT from City of Wilsonville supporting the 'no-through' design that ODOT is working on	20-Jul-15	Tim Knapp, Mayor	07-20-2015 Mayor Letter to ODOT.pdf
	4.09	Letter to ODOT from Clackamas County requesting analysis of traffic impact, safety & operational issues and a Road Safety Audit of the Wilsonville Rd. corridor	14-Oct-15	John Ludlow, Chair on behalf of the Board of Commissioners	CC to Garrett.ltr.Newberg 10.14.15.pdf
	4.10	eMail from 2 of 3 Yamhill County Commissioners to ODOT indicating public safety goal conflict with County Comprehensive Plan/TSP	16-Oct-15	Mary Starrett & Stan Primozich, Commissioners	YamhillCtyEmailToODOT 2015-10-16.pdf
	4.11	Letter to ODOT from Clackamas County indicating that ODOT's 10/20/15 letter did not address need to mitigate Wilsonville Rd. issues	5-Nov-15	John Ludlow, Chair on behalf of the Board of Commissioners	CC to ODOT11.05.15.Potter.ltr.pdf

1.02
3 of 5

	4.12	eMail from Clackamas County to ODOT indicating public safety goal conflict with County Comprehensive Plan/TSP	18-Nov-15	John Ludlow, Chair on behalf of the Board of Commissioners	ClackamasCtyEmailToODOT 2015-11-18.pdf
LHNA Letters & eMail	**5.00**				
	5.01	Letter to ODOT Director Garrett & FHWA Division Admin. Phillip Ditzler Presenting the NEPA Violation Info & Requesting to Fix the Wilsonville Rd. Safety Problem	17-Jan-15	Officers of the LHNA	ODOT-FHWA LetterFromLHNA 2015-01-17v8SIGNED.pdf
	5.02	Additional References (eMail chains)	17-Jan-15	Officers of the LHNA	References for ODOT-FHWY Ltr 20150116v3FINAL.pdf
	5.03	Letter to ODOT & FHWA Praising the Work-to-Date, Identifying a Recent Derailing & Wanting to get the Process Back on Track	21-Apr-15	Officers of the LHNA	ODOT-FHWA LetterFromLHNA 2015-04-21v4.pdf
	5.04	Letter to Newberg Mayor from LHNA: Newberg-Dundee Bypass – UPDATE and need for a resolution soon	17-Jun-15	Co-Presidents and Chair Bypass Impact Committee (LHNA)	Newberg LetterFromLHNA 2015-06-17v4.pdf
	5.05	Letter to Newberg City Planning Commission from LHNA: Newberg-Dundee Bypass – Testimony to the Newberg City Planning Commission (NCPC)	13-Aug-15	Co-Presidents and Chair Bypass Impact Committee (LHNA)	NewbergPlngComm LetterFromLHNA 2015-08-15v7.pdf
	5.06	Affidavit re ODOT Open House in Newberg June 12, 2013, specifically a conversation with Tim Potter, ODOT Area 3 Manager	18-Nov-15	Cole Prestus, LHNA Co-President respresenting Yamhill County	Presthus Declaration 20151118.pdf
Testimony & Public Comments	**6.00**				
	6.01	Sample of the many Comments from LHNA members to ODOT on the Tier One DEIS raising concerns about the Impact of the Bypass on Wilsonville Rd.	2-Dec-02	Dave Leckey, Past Bypass Committee Chair (LHNA)	Newberg-Dundee Bypass Comments DaveLeckey20021202.pdf
	6.02	Sample of the many Comments from LHNA members to ODOT on the Tier One DEIS raising concerns about the Impact of the Bypass on Wilsonville Rd.	2-Dec-02	Cheryl MaCaffrey	Nbg Dundee bypassComments CherylMcCaffrey 20021216.pdf
	6.03	Comments on Transportation System Plan Amendment for Phase 1 Bypass	14-Nov-13	John Freeman, LHNA Co-President	Newberg TSP MtgCommentsJohn Freeman 20131114.pdf
	6.04	Feedback for ODOT on Draft TSP Amendment	24-Aug-15	Bypass Impact Committee (LHNA)	ODOT-FHWA-LHNA-CC TSP Feedback 2015-08-24v3.pdf
	6.05	House Transportation & Economic Development Committee (HTED)	30-Sep-15	Bypass Impact Committee (LHNA)	BypassDiscussionPoints 2105-09-29v9.pdf

	6.06	LHNA Rebuttal to Gary Bliss, NCPC Chair & Verbatim Transcript21 April NCC Public Comments submitted as written testimony at the Newberg City Planning Commission Meeting	8-Oct-15	Brent Ahrend, Mackenzie Engineering	NCPC 8Oct2015 BrentAhrendCommentsAndRebuttalToGary Bliss v6.pdf
ODOT & FHWA Letters, eMail, Minutes	**7.00**				
	7.01	ODOT/Garrett Reply to LHNA's 17 Jan Letter	27-Jan-15	Matt Garrett, Director	01-27-15 Presthus & Halle, Ladd Hill-Wilsonville Rd.pdf
	7.02	FHWA/Ditzler Reply to LHNA's 17 Jan Letter	29-Jan-15	Philip Ditzler, Oregon Division Admninistrator	15-01-29 Resp to LHNA re Newberg Dundee Wilsonville Rd.pdf
	7.03	ODOT Responses to Concerns of Local Gov't Officials & Citizens re Travel Impacts of Phase 1 Bypass	9-Jul-15	Compilation of Various emlals & Public Responses	ODOITResponsetoLocalGovernmentandCitizenConcernReports2015-07-09.pdf
	7.04	ODOT Reply to 10/14/15 Clackamas County Letter indicating that traffic conditions on Wilsonville Rd. are not the sole responsibility of ODOT	20-Oct-15	Tim Potter, Area 3 Manager ODOT	ODOT to Comm Ludlow Response Wilsonville Rd 10-20-16.pdf
	7.05	Primarily eMail Text of Meeting Minutes	15-Nov-15	Compilation from Multiple Sources	ODOT-LHNA-NewbergMtgsMinutes Feb-Aug 2015.pdf
	7.06	Minutes from April 23 2015 meeting with ODOT Staff, Newberg Staff, Mackenzie Engineering & LHNA	28-Apr-15	Brent Ahrend, Mackenzie Engineering	MeetingMinutesODOT,Newberg,MackEngr,LHNA 2015-04-23.pdf
How to Handle ODOT's TSP Amendment	**8.00**				
	8.01	Type of Decision on ODOT's Newberg Dundee Bypass Transportation System Type IV Application	8-Oct-15	Crag Law Cnter, Ralph Bloemers, Staff Attorney	Crag E-letter to City of Newberg 2015-10-08.pdf
	8.02	Type of Decision for ODOT Type IV Application for a Comprehensive Plan Amendment	26-Oct-15	Jessica Pelz, Assoc Planner	SKMBT_C65015102811310.pdf
Relevant Photos	**9.00**				
	9.01	Pickup Truck Flipped Over Speeding Around a Tight Corner	17-Sep-15	Concerned Citizen	OverturnedPickup 2015-09-17.jpg
	9.02	Large Farm Equipment Straddles Both Lanes Driving 10-15mph	19-Sep-15	Concerned Citizen	FarmEquipment 2015-08-27a.jpg
	9.03	Tandem Truck Unable to Stay in Lane	19-Sep-15	Concerned Citizen	DoubleTruck 2015-08-14a.jpg
	9.04	Tandem Truck Going Around a Bicyclist	19-Sep-15	Concerned Citizen	DoubleDumpTruck 2015-08-14b.jpg
	9.05	Daily School Buses With Traffic Backed Up	19-Sep-15	Concerned Citizen	SchoolBus 2015-09-19.jpg
	9.06	School Bus Dangerous Turn onto Wilsonville Rd. from Ladd Hill Rd.	8-Mar-15	Concerned Citizen	Bus-Ladd-Hill-1024x571.jpg
	9.07	Twice weekly WM Trash Truck Stopping at Every Driveway: Backed Up Cars	8-Mar-15	Concerned Citizen	Trash-Pickup-Congestion-2015-03-15.jpg
	9.08	WM Trash Pickup: Illegal Passing	8-Mar-15	Concerned Citizen	Trash-Pickup-Passing-2015-03-15.jpg

Attachment 5

1.02
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1.02
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	9.09	Accident: Wilsonville Rd. & Ladd Hill Rd.	1-Nov-15	Concerned Citizen	CarBoatTrailerAccident2015-11-01d.JPG
	9.10	Accident: Wilsonville Rd. & Ladd Hill Rd.	1-Nov-15	Concerned Citizen	CarBoatTrailerAccident2015-11-01f.JPG
	9.11	Semi-Truck straddling Wilsonville & Grahams Ferry	14-Nov-13	Concerned Citizen	Semi on Wilsonville Rd 20131114
	9.12	Jackknifed Semi blocking Wilsonville Rd.	17-Jan-15	Concerned Citizen	16 Jan 2015 - Semi blocking Wilsonvill Rd.jpg
Media Coverage	**10.00**				
	10.01	"Some Fear Bypass Will Heap Traffic Onto Wilsonville Road", plus Blog Comments	27-Nov-13	Portland Tribune, Wilsonville Spokesman & Newberg Graphic, Josh Kulla	PortlandTribune 2013-11-27"Some fear bypass will heap traffic onto Wilsonville Rd".docx
	10.02	"Bypass Route May Undergo Revision"	5-Aug-15	Newberg Graphic, Colin Staub	NewbergGraphic 2015-08-05.docx
	10.03	"Laad Hill, Wilsonville Look For Highway Bypass Amendment"	12-Aug-15	Wilsonville Spokesman, Andrew Kilstrom	WilsonvilleSpokesmanBypass 2015-08-12.docx
	10.04	"Bypass Intersection Draws Ire of Neighborhood Association"	2-Sep-15	Newberg Graphic, Colin Staub	NewbergGraphic 2015-09-02.docx
	10.05	"In Our Opinion: Keep Bypass Intersection Alignment Where it is"	23-Sep-15	Newberg Graphic, Editorial Staff	NewbergGraphicIn Our Opinion 2015-09-23.docx
	10.06	"Fractious Hearings Spur City Council Training"	15-Oct-15	Newberg Graphic, Colin Staub	NewbergGraphicQuasi-JudicialArticle 2015-10-15.docx
	10.07	"Bypass Corridor Left Unprotected in Newberg"	23-Oct-15	McMinnville News Register, Don Iler, News Editor	McMinnvilleNewsRegister Bypass 2015-10-23.pdf
	10.08	"City, LHNA Debate Bypass Decision Type; Transportation – Intersection will continue to be treated legislatively, City says"	4-Nov-15	Newberg Register, Colin Staub	NewbergGraphicQuasi-JudicialVsLegislative2015-11-04.docx
Wilsonville Rd. Video & Intersection Maps	**11.00**				
	11.01	Newberg TSP Amendment Dec 2013 Exhibit B: Inset gave the City unprecedented power over the intersection geometry	5-Dec-13	ODOT Proposal; Newberg Enacted	Newberg TSP Amendment Dec2013.pdf
	11.02	ODOT Option 1: Current Thru-Thru Design; aka Option 1'	15-Jun-15	ODOT Bid Package for Contract 1G	ODOT Thru-Thru Option 1 2015-06-15.tiff
	11.03	ODOT 'No-Thru' Design (ruled viable by Bob Pappe, ODOT State Highway & Traffic Engr)	2-Sep-15	ODOT Proposed 2nd TSP Amendment	Newberg TSP Final Text Sept2015.pdf
	11.04	"Newberg-Dundee Bypass Impacts Wilsonville Road" On-Line Video URL	21-Oct-15	Clackamas County	<https://www.youtube.com/watch?v=MHEh9JSkhPU&feature=youtu.be>

1.03
1 of 3

Timeline for Newberg-Dundee Bypass – LHNA Perspective
17 Jan 2015 v6 Part 1 covering May 2002 thru Jan 2015
(Highlights including references to key newsletters, documents, meetings, etc.)

May 29, 2002: Letter to Suzanne Roberts, Cogan-Owens-Cogan from Ladd Hill CPO. Comments on the initial work on the EIS by Cogan-Owens-Cogan. LHCPO (predecessor to the LHNA) expressed concern for impacts to Wilsonville Rd traffic, access, and safety requesting conversation and to be involved in aspects of the proposal and analysis. Cc: sent to Clackamas County CPO Liaison with a request to send a copy to Clackamas County Transportation and Planning.

June 10 2002: Public Meeting at Edwards Elementary School, Newberg, one of the earliest meetings where ODOT presented the Bypass to the public.

June 19, 2002: LHCPO meeting reported on Bypass.

Nov-Dec 2002: Letters and comments on the Location (Tier 1) Draft Environmental Impact Statement (LDEIS) for the Newberg-Dundee Transportation Improvement Project. Numbers were assigned by ODOT to keep track of these letters: Kathryn Whittaker (#180), Annette and Jonathan Cooley (#52), Peter and Sharon Sabin (#53), Ladd Hill Neighborhood Association signed by Dave Leckey (#54), Sheila McMahon (#153), Cheryl McCaffrey (#86), William Smart (#38), Paul McMahon (#1).

Autumn 2003: Newberg-Dundee Bypass Transportation Improvement Project Update Newsletter (Fact Sheet No. 10) – public outreach re: design discussions.

Spring 2004: Newberg-Dundee Bypass Transportation Improvement Project Update newsletter. (Fact Sheet No. 11) – announces and describes upcoming workshops. Seeks land use approval from Yamhill Co.

April 13, 2004: Context Sensitive Workshop Round 1

June 1, 2004: Context Sensitive Workshop Round 2

Post August 2005: Information flier – Newberg- Dundee Tier 2 Purpose and Need Statement. Describes alignment of the bypass; states the need. 2002 data used for travel time estimates between East Newberg on OR 99 and Dayton. Tier 2 will address, among other things, designing the interchanges to address local circulation and planning issues in Intergovernmental Agreements between ODOT and Yamhill Co, and the City of Newberg among other entities.

October 11, 2005: Open House and general scoping meeting serving as scoping opportunity for the public and agencies to provide input. Lists agencies invited (does not include Wilsonville or Clackamas County. Does include City of McMinnville. Marion County accepted invitation to participate.

December 5, 2005: Community Workshop

March 2006: Newsletter on progress. Announces May 23, 2006 Bypass Open House and Design Workshop and June 2006 Stakeholder Working Group meetings.

March and April 2006: ODOT open public meetings discussing interchange connections

May 2006: Newsletter discusses March-April public meetings to help develop Interchange Area Management Plans

May 23, 2006: Memorandum on Bypass Coordination Plan reports on October 11, 2005 Open House; Bypass Open House and Design Workshop to assist Design Draft EIS.

Circa 2006-2007: Approximate time Wilsonville Rd. which connected to OR219 was changed to Springbrook Rd.

September 2010: Newsletter, selection of Tier 2 Preferred Alternative. Describes partial cloverleaf at OR 219; alignment of Wilsonville Rd. and Wynooksi Rd. to connect to OR 219 at a signal. (Segment 6). OR legislature approves funding.

February 2011: Newsletter, Awaiting Yamhill County Goal Exception approval. Announced that funding insufficient to construct entire project. Breaks it into Phase 1 & 2.

September 2011: Newsletter Seeks community input for Phase 1. Cities and County adopt land use amendments. Includes re-routing of Wilsonville and Wynooksi Rds. Map shows the rerouting as new to Phase 1. See **www.NewbergDundee.org** for these local plan and ordinance amendments.

March 2012 Newsletter: Tier 2 EIS to be published. Announces that in the Spring of 2012, ODOT will prepare request to amend City of Newberg TSP for the direct connection of Wilsonville Rd. to OR 219. Map shows connection of Bypass directly opposite the original Wilsonville Rd. intersection and does not show the Wynooski-Wilsonville Rd.re-routing.

June 2012: Newsletter, first mention of Phase 1 as opposed to the whole project to OR 99W. Tier 2 FEIS and ROD signed by FHWA (FEIS Federal Register April 27, 2012; ROD June 5, 2012) online at **www.NewbergDundee.org**. ODOT will request Newberg to amend its TSP (Transportation System Plan) for the reconnection of Wilsonville Rd to OR219. Public hearing by county and city expected summer-fall 2012. Connection of Wilsonville Rd. directly to Bypass is clearly stated and mapped. Map of "Construction (Phase 1)" shows signal at OR 219 at the former terminus of Wilsonville Rd. Contract #3 (of 4) starting in 2nd Quarter 2014 mentions reconnecting Wilsonville Rd.

June 2013: Newsletter from ODOT; Funding ($262 million) available for Phase 1

June 12, 2013: ODOT open house in Newberg; McCaffrey letter provided to ODOT. ODOT official admits to LHNA officer that ODOT did not consider the impacts on Wilsonville Road. This was the first time that the LHNA learned that the impacts on Wilsonville Road were not addressed. This was entirely new information to LHNA and the statement was contrary to statements ODOT had made previously to the public regarding the extent and scope of its consideration of Wilsonville Road.

June 19, 2013: ODOT attends meeting with LHNA; Officials continue to state that there would be **no impact** on Wilsonville Rd. with the direct connection to the eastern end of the Bypass Phase 1 but do not present any data or modeling to confirm this claim.

Sept 18, 2013: ODOT attends 2nd meeting with LHNA; said they rechecked their Model and that there would be a minimal traffic count increase over the next couple of decades and, therefore, no impact on Wilsonville Rd.

Nov 4, 2013: Newberg City Council meeting to have the first discussion of the proposed TSP amendment to allow for the redirection of Wilsonville Rd to OR219 directly across from the eastern end of the Bypass Phase 1 terminus. John Freeman & Stan Halle (as LHNA Co-Presidents) testified about the potential impact on Wilsonville Rd. and the need for ODOT to consider other options – including keeping the road where it is (at Springbrook), rerouting it to Wynooski Rd. (as is ODOTs plan for Phase 4). ODOT argued again that their model did not show any impact.

Dec 2, 2013: Second Newberg City Council meeting finish discussion and vote on the proposed TSP amendment. The Council reopened public testimony (unusual) and again asked ODOT why they couldn't accept one of the reasonable alternatives for Wilsonville Rd. ODOT said that it would cost $4.5m and delay the whole Bypass project at least 18 months – claims that were completely unsubstantiated. They did indicate a willingness to put up signs and do traffic counts after the Bypass is opened – actions inadequate to address the LHNA concerns. In the end, all but one Council member caved into ODOTs cost & delay threat and passed the TSP amendment.

Spring 2014: LHNA engaged Mackenzie Engineering to look more closely at ODOTs claim of no impact (via modeling and analysis). Our traffic engineer found that the model was entirely inadequate – did not and could not analyze any configuration for Wilsonville Rd. This was confirmed with ODOT model experts.

Summer 2014-Present: LHNA makes efforts to better understand the holes in ODOTs (and its engineering contractors) analysis, document what new information, the substantial impact and uncertainty on Wilsonville Rd.

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Timeline for Newberg-Dundee Bypass – LHNA Perspective
14 Nov 2015 v6 Part 2 covering Jan 2015 thru Nov 2015
(Highlights including references to key newsletters, documents, meetings, etc.)

Jan 19, 2015: Letter dated 17 Jan 2015 from LHNA emailed (as an attachment) and by certified mail to Matt Garrett, ODOT Director and Phillip Ditzler, FHWA Administrator, Oregon Division, entitled: "Newberg-Dundee Bypass – Impact on Wilsonville Road". This letter indicated LHNA's support for the Bypass Project, however with serious concerns re the substantial increase in Wilsonville Rd. traffic volume with ODOT's planned intersection configuration. We provided detailed information that documented the NEPA violation that could result in a court ordered need for a Supplemental EIS due the lack of adequate modeling and analysis of said impact. Attachments included:

1. Timeline of Interactions with ODOT, et al.
2. Two sample Letters of the nine filed in 2002-2005 (part of FEIS Tier 2)
3. Accident Reports from Yamhill & Clackamas Counties, Traffic Counts & Speeds
4. Wilsonville Rd. Driveway and Signed Side Road Counts
5. Additional References, including:
    a. URL for the 27 Nov 2013 articles in the Newberg Graphic, Wilsonville Spokesman & Portland Tribune
    b. URLs for Traffic Counts & Accidents on Wilsonville Rd. (Clackamas County)
    c. Relevant sample of emails, statements by public officials, etc.
6. Mackenzie Engineering Report dated 14 November 2013
7. Mackenzie Engineering Letter dated 16 January 2015

Jan 27, 2015: Letter from ODOT Director Matt Garrett in reply to our Jan 17, 2015 letter, committing to looking into the matter and assigning Sonny Chickering, Region 2 Manager to work with the community.

Jan 29, 2015: Letter from FHWA Division Administrator Phillip Ditzler in reply to our Jan 17, 2015 letter, acknowledging and committing to addressing our concerns.

Jan 29, 2015: Attended the Yamhill County Parkway Committee (YCPC) to present the very real and substantial concerns we have for public safety along Wilsonville Rd.

Feb 3, 2015: First face-to-face meeting between ODOT, LHNA and Mackenzie Engineering. ODOT explains why several options we raised won't work based on their criteria: *(see Meeting Minutes – separate document)*

1. To stay on schedule
2. To stay within budget
3. To stay within the existing footprint right-of-way
4. To not require additional environmental permitting

These options included: (a) leaving Wilsonville Rd. where it is today; (b) uncoupling Wilsonville Rd. from the Bypass (as planned for Phase IV) by completing the Adolph Rd./Wynooski Rd. connection; etc. ODOT presented a new design called no-thru eastbound, which LHNA & Mackenzie suggested modifying into a no-thru intersection in both directions. ODOT agreed to run this through their internal design process, etc.

Feb 12, 2015: Second face-to-face meeting between ODOT, LHNA and Mackenzie Engineering, re further discussion re the technical feasibility of the no-thru design. *(see Meeting Minutes – separate document)*

Mar 4, 2015: Third face-to-face meeting between ODOT, LHNA and Mackenzie Engineering, covering what steps (internally for approval and externally for review) would be necessary for this design to be implemented. *(see Meeting Minutes – separate document)*

Mar 13, 2015: Internal ODOT meeting with their State Roadway & Traffic Engineer, Bob Pappe. Staff presented Project history, current design, LHNA concerns, and the iterative intersection design discussions that have been occurring for the past couple of months. ODOT's approval process list was also shared. After considerable discussion, the State Roadway and Traffic Engineer indicated he agreed the concept of modifying the intersection design to preclude through movements to/from the Bypass and Wilsonville Rd. is viable, subject to further refinement of the lane channelization islands.

Apr 14, 2015: LHNA briefing of the PTSA (Parent, Teacher, Staff Assoc.) at the Wood Middle School in Wilsonville. PTSA members raised great concerns about the 1,500 students who travel or walk on Wilsonville Rd. twice each school day.

Apr 16, 2015: Attended the Yamhill County Parkway Committee (YCPC). ODOT Staff presented the thru-thru design (aka Option 1) implying that it was ODOT's preferred design. The ODOT/LHNA jointly developed no-thru design, already approved by ODOT's State Roadway and Traffic Engineer, was presented as LHNA's design. Nor did the Staff explain that the 'no-thru' design met all of ODT's criteria. They went further stating that either design would work referring to the modeling and analysis Bypass FEIS (June 2012). Yet this modeling and analysis had already been shown (and admitted verbally and in writing by Staff & ODOT consultants) as lacking and inadequate. Mayor Andrews expressed concerns about impact on local streets. He suggested we all meet with Newberg Staff to discuss these.

Apr 23, 2015: Meeting with Newberg Staff, ODOT Staff, Mackenzie Engineering and LHNA at Mayor Bob Andrews request. Reviewed the whole situation. Newberg Staff asked Mackenzie Engineering to analyze & compare several alternative configurations, which we agreed to do. ODOT confirmed that their design intent was not to put additional traffic on Wilsonville Rd. *(see minutes in a separate document)*

May 15, 2015: Meeting with ODOT Director & Staff in Salem. The discussion included LHNA analysis and conclusions re 2-4% impact of no-thru on local Newberg streets, ODOT idea of a partial-through option with commitment to monitor and mitigate. Mackenzie Engineering provided detailed analysis showing that the no-thru design was still, by far, the best design option. *(see minutes in a separate document)*

July 1, 2015: Meeting with ODOT Staff, Mackenzie Engineering & LHNA in Salem. Discussion centered on ODOT recognizing that it had inadvertently given Newberg unprecedented veto power over the specific geometry of the Bypass/219/Wilsonville Rd. intersection in the TSP Amendment approved by Newberg City Council Dec 2013 (via a small inset in Exhibit B). Mackenzie Engineering showed ODOT Staff that there was a design difference re one vs. two

southbound lanes on 219 at the Springbrook Rd. intersection. ODOT Staff indicated that a 2nd TSP Amendment would be called for. *(see minutes in a separate document)*

July 2, 2015: Meeting with Newberg Staff, Mackenzie Engineering & LHNA to discuss the results of the Mackenzie Engineering's extensive analysis of the concerns & alternatives raised by Newberg in April.

July 13, 2015: Newberg Transportation Safety Commission meeting. Presented the history and issues re the significant impact the Bypass would have on Wilsonville Rd. if the 'thru-thru' design were built. Explained that the ODOT/Mackenzie Engineering/LHNA jointly developed 'no-thru' design (approved by ODOT's State Highway & Traffic Engineer) would have minimal impact on local streets in Newberg. This was quantified as increasing traffic by no more that 2-4% over what the Bypass modeling already showed, equating to approximately one more car per two minutes during peak hour. In stark contrast, the flow of commuters and coastal traffic that would use Wilsonville Rd. given the choice, was substantial and adversely impacts public safety.

July 16, 2015: Yamhill County Parkway Committee (YCPC) meeting in Dundee. Attended and provided an update (verbally & in writing). Commended Newberg Mayor for raising concerns about local roads. Provided conclusions from the 154 page analysis/report prepared by Mackenzie Engineering.

Aug 12, 2015: Front page article in the *Wilsonville Spokesman* entitled *"Laad Hill [sic], Wilsonville look for highway bypass amendment".* <http://portlandtribune.com/wsp/134-news/269094-143633-ladd-hill-wilsonville-look-for-highway-bypass-amendment>

Aug 13, 2015: Meeting of the Newberg City Planning Commission. Provided a similar update as we did at the YCPC on July 16, 2015.

Aug 17, 2015: Meeting of the Newberg City Council. LHNA attended and provided verbal testimony during the public comment period.

Aug 17, 2015: Meeting of the Wilsonville City Council. LHNA attended and provided verbal and written testimony during the public comment period to update the Council on the history, concerns and next steps re the Bypass impact on the whole Wilsonville Rd. corridor.

Aug 20, 2015: Yamhill County Parkway Committee (YCPC) meeting in Dundee. Attended to monitor ongoing discussion of the Bypass.

Aug 24, 2015: Meeting with ODOT Director & Staff, FHWA Division Admin. & Staff, Clackamas County Transportation Engineering, and LHNA *(see minutes in a separate document)*. Highlights:

a. ODOT will change to the 'no-thru' design after the TSP has been approved. This would be through a Contract Change Order to the construction contract itself utilizing existing construction bid line items – much simpler and less costly than adding new work items to the Contract.
b. ODOT has already changed the bid package so that the build-sequence on this *fourth & final* part of Phase 1 (called Contract 1G) puts the Wilsonville Rd. intersection last. That way, no work or purchase of unneeded materials, signage, etc. would be made prior to the changeover to the 'no-thru' design.

Sept 2, 2015: The *Newberg Graphic* publishes a front-page article entitled: "*Bypass Intersection draws ire: Wilsonville Road configuration received support from outside parties, but city has the final say on the issue.*" <http://cni.pmgnews.com/nbg/142-news/271287-146862-bypass-intersection-draws-ire-of-neighborhood-association> The most telling quote in the article was from Mayor Bob Andrews: *"It's no longer a matter of practical engineering, it becomes a political issue. And sometimes politics and reason are not necessarily compatible."*

Sept 2, 2015: ODOT officially submits a proposed TSP Amendment to the City of Newberg which contains two parts: (a) a lane configuration change from the *Tier II Final EIS* signed by the FHWA June 2012; and (b) a change in the Bypass/OR219/Wilsonville Rd. intersection to a 'no-through' design.

Sept 17, 2015: Yamhill County Parkway Committee (YCPC) meeting in Dundee. Attended to monitor ongoing discussion of the Bypass.

Sept 21, 2015: Newberg City Council meets to (among other City business) vote on a resolution that simple 'initiates' the Newberg City Planning Commission (NCPC) to review, analyze & provide recommendations re ODOT's proposed TSP Amendment back to the City Council. The meeting was attended by 40+ angry neighbors who had been given misinformation that painted LHNA, Wilsonville and Clackamas County as the 'enemy' of Newberg. Approx. seven spoke denouncing the Amendment and urged the City Council to reject even studying it or giving it proper review. To add fuel to the fire, Gary Bliss, Newberg City Planning Commission Chair also spoke against the resolution, identifying himself as Chair, but speaking as a private citizen. *Note: a more detailed write-up of this meeting and a verbatim transcript of his comments are attached, along with a URL to the hour-plus audio recording.* The resolution to initiate the process narrowly passed 4-3-0 (the Mayor broke the tie). All but one of the Councilors who voted either yes or no on the resolution clearly indicated that they would REJECT any TSP Amendment that continued the no-through design.

Sept 21, 2015: A second resolution was passed 6-1-0 that 'initiated' the NCPC to review, analyze & provide recommendations back to the City Council regarding a complete Update to the City's TSP. This update covers the entire TSP and has been underway for several years.

Sept 23, 2015: *Newberg Graphic* published an "In Our Opinion" Editorial entitled; *"Keep Bypass intersection alignment where it is."* <http://portlandtribune.com/nbg/143-opinion/273994-149864-in-our-opinion-keep-bypass-intersection-alignment-where-it-is>; and *"Bypass amendment headed to planning commission"*. <http://www.pamplinmedia.com/nbg/142-news/273952-149817-bypass-amendment-headed-to-planning-commission>

Sept 25, 2015: Local elected representatives from Wilsonville and Newberg attended the *League of Oregon Cities* meeting. We understand that the Wilsonville delegation (Mayor Knapp, Councilor Lehan, Scott Starr, etc.) indicated to Newberg Mayor Andrews that Newberg cannot simply push its traffic congestion problem down Wilsonville Rd. and into Wilsonville. They then asked a member of *Oregon Solutions/Regional Solutions* to intervene and help address this multi-jurisdictional dispute.

Sept 28, 2015: State Rep. John Davis, Vice-Chair HTED, John Ludlow, Clackamas County

Commission Chair, and Scott Starr, Wilsonville City Council President held a town hall in Wilsonville. The potential public safety impact of the Bypass was summarized by Scott Starr: *"This is a major issue that could crater I-5 Exit 283".*

Sept 30, 2015: Another *Newberg Graphic* article, entitled: *"Transportation System Plan talks begin",* explains this a bit more, as well as how the two resolutions relate. <http://www.newspaperdaily.net/newspaper/usa/oregon.newberg.newberggraphic.php>

Sept 30, 2015: Several members of the LHNA attended the HTED informational meeting in the Capital Building, Salem to listen to an update on Oregon's Major Construction Projects, presented by Paul Mather, ODOT's Highway Division Administrator. We submitted a 3-1/2 page summary of the multi-jurisdictional issue, relevant history to the HTED. Copies were given to all Committee members and to Paul Mather, by Rep. John Davis. Immediately following the meeting, LHNA met with Rep. McKeown, Chair, Rep. John Davis, Vice-Chair, and Paul Mather. Mather was unaware and very surprised that Planning Commission Chair Bliss had spoken out, especially given that he considered the TSP Amendment to be a 'Quasi-Judicial' matter. We indicated that ODOT needed to rebut the misinformation that Commission Chair Bliss and Newberg Councilors were saying about the design and about ODOT, and that ODOT needed to do a better job defending their own amendment. He finished by saying, that *"ODOT never intended Wilsonville Rd. to be an outlet for the Bypass!"* This is very significant, since it makes the withdrawal of the ODOT's current thru-thru design imperative.

Oct 5, 2015: Newberg City Council Meeting. City Attorney Stone gave a presentation on quasi-judicial proceedings.

Oct 8, 2015: Crag Law Center attorney, Ralph Bloemers, council to LHNA, submitted a letter to Newberg that presented the legal arguments as to why ODOT's proposed TSP Amendment (submitted 9/2/15) should be a quasi-judicial, not a legislative, matter. *Note: the City rejected Crag Center's legal position and said that the TSP Amendment would be treated as Legislative (letter dated Oct. 26, 2015 signed by Jessica Pelz, Associate Planner).*

Oct 8, 2015: Newberg City Planning Commission (NCPC) attended by Mackenzie Engineering and LHNA. Brent Ahrend started to speak during 'public comments', but was stopped by Doug Rux, City Staff citing the quasi-judicial letter submitted earlier that day. Instead Brent provided written testimony that included: (a) a verbatim transcript of Gary Bliss', NCPC Chair, testimony before the City Council Sept 21, 2015; and (b) a rebuttal of key points made that are viewed as incorrect.

Oct 15, 2015: Yamhill County Parkway Committee (YCPC) meeting in Dundee. Attended to monitor ongoing discussion of the Bypass. Updated the YCPC on our understanding of the schedule slippage by ODOT due to Newberg's request for more analysis of alternatives re the Bypass/219/Wilsonville Rd. intersection. Bid package would now likely be issued in mid-late Jan 2016 (vs. Dec 7 2015) but would not materially affect the contract award and construction schedule.

Oct 19, 2015: Newberg City Council meeting. No discussion of the Bypass or TSP Amendment.

Nov 12, 2015: Newberg City Planning Commission. No discussion of the Bypass or TSP Amendment.

Nov 16, 2015: Newberg City Council meeting. No discussion of the Bypass or TSP Amendment.

Nov 19, 2015: Yamhill County Parkway Committee meeting. Discussion re: (a) progress in Washington D.C. establishing a higher priority for Phase 2 Bypass funding; (b) land development in the potential right-of-way area for Phase 2.

2.01
1 of 7

Newberg-Dundee
BYPASS PROJECT

MEMORANDUM

Date:	July 1, 2013
To:	Kelly Amador
From:	William Ciz
Subject:	Wilsonville Road Traffic Counts
cc:	
Project Number:	274-2395-058
Project Name:	Newberg Dundee Bypass Project

Here is a quick summary of 2011 Traffic Counts, 2016 Traffic Projections (No Build and Build), and 2035 Traffic Projections (No Build and Build) on Wilsonville Road east of Oregon 219, Clackamas and Yamhill County functional classification for Wilsonville Road, a review of Phase 1 E Signing Plans and responses to COP comments. Also attached are the Figures from the Traffic Analysis Reports with the counts and projections referenced in case you would like to forward them.

2011 Peak Hour Traffic Counts (See 2011 Traffic Count pdf, Intersection #21) at the Wilsonville Road/Springbrook Road Intersection were 205 vehicles traveled westbound (70 turned right and 135 turned left onto Springbrook Road). 140 vehicles traveled eastbound (70 turned right and 70 turned left from Springbrook Road onto Wilsonville Road).

2016 No Build Peak Hour Traffic Projections (See Figure 2A, Intersection #21) at the Wilsonville Road/Springbrook Road Intersection were 230 vehicles traveled westbound (80 turned right and 150 turned left onto Springbrook Road). 170 vehicles traveled eastbound (85 turned right and 85 turned left from Springbrook Road onto Wilsonville Road).

2016 Build Peak Hour Traffic Projection (See Figure 7, Intersection #5) at the new Oregon 219/Wilsonville Road Intersection are 230 vehicles will travel westbound (165 will turn right onto Oregon 219 , 25 will enter the Phase 1 Bypass and 40 will turn left onto Oregon 219). 170 vehicles will travel eastbound (15 will turn right form Oregon 219, 25 will enter from the Phase 1 Bypass and 130 will turn left from Oregon 219).

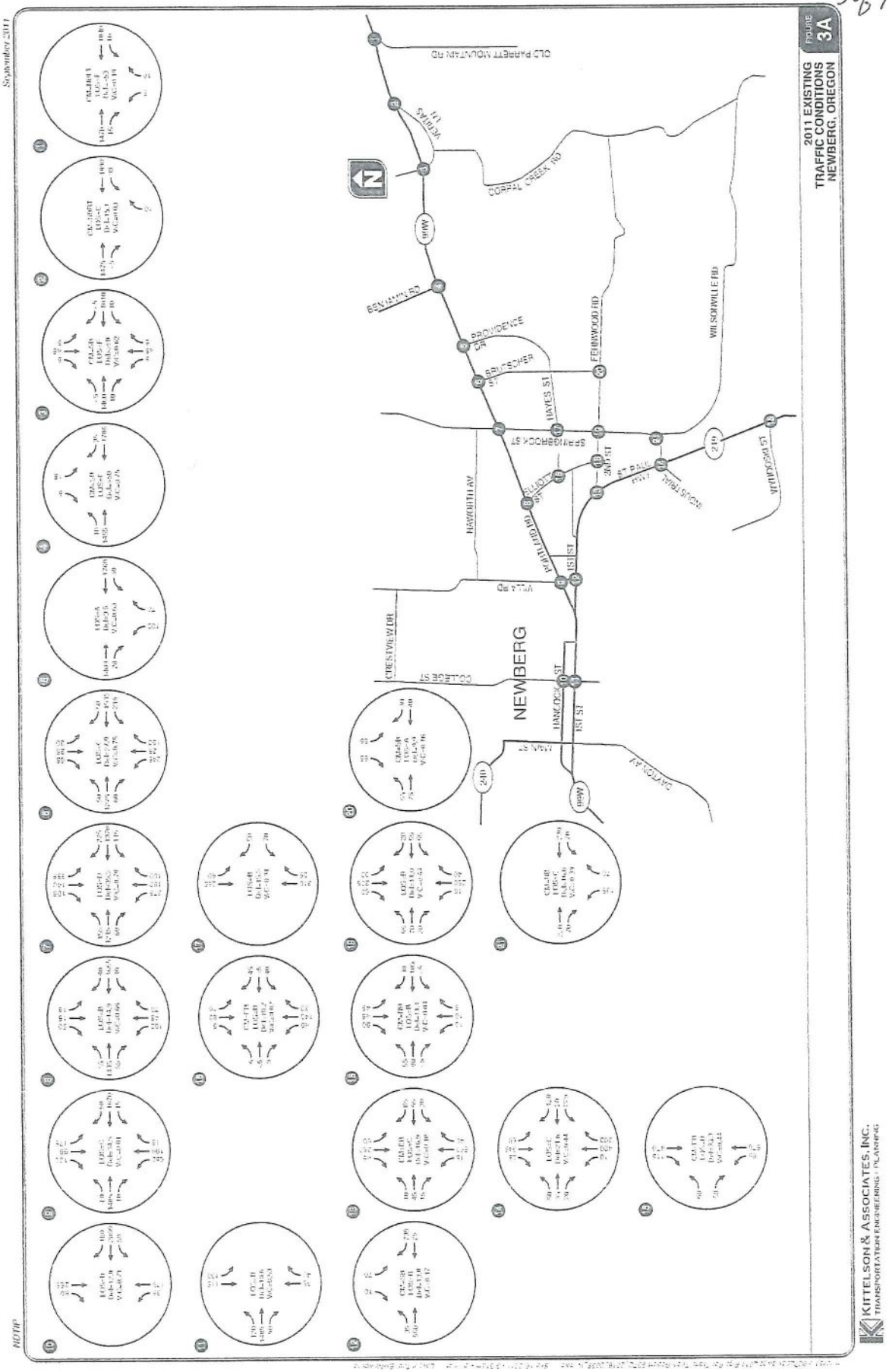
2035 No Build Peak Hour Traffic Projections (See Figure 4A, Intersection #21) at the Wilsonville Road/Springbrook Road Intersection were 310 vehicles traveled westbound (115 turned right and 195 turned left onto Springbrook Road). 280 vehicles traveled eastbound (140 turned right and 140 turned left from Springbrook Road onto Wilsonville Road).

2035 Peak Hour Traffic Projection (See Figure 8, Intersection #5) at the new Oregon 219/Wilsonville Road Intersection are 315 vehicles will travel westbound (230 will turn right onto Oregon 219 , 35 will entered the Phase 1 Bypass and 50 will turned left onto Oregon 219). 330 vehicles will travel eastbound (25 will turn right from Oregon 219, 40 will enter from the Phase 1 Bypass and 265 will turn left from Oregon 219).

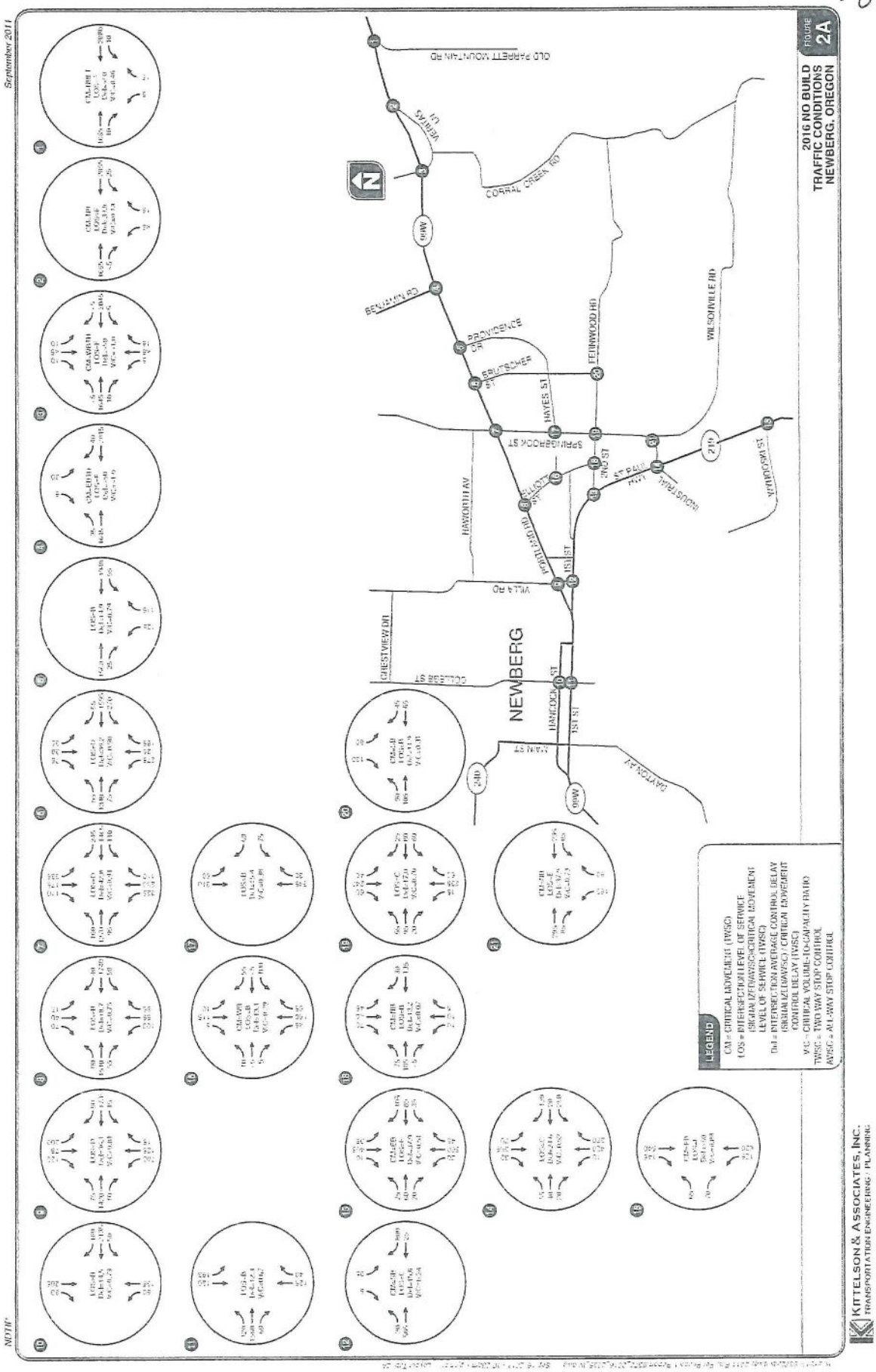
Wilsonville Road is classified as a Major Collector by Yamhill County and as a Major Arterial in Clackamas County.

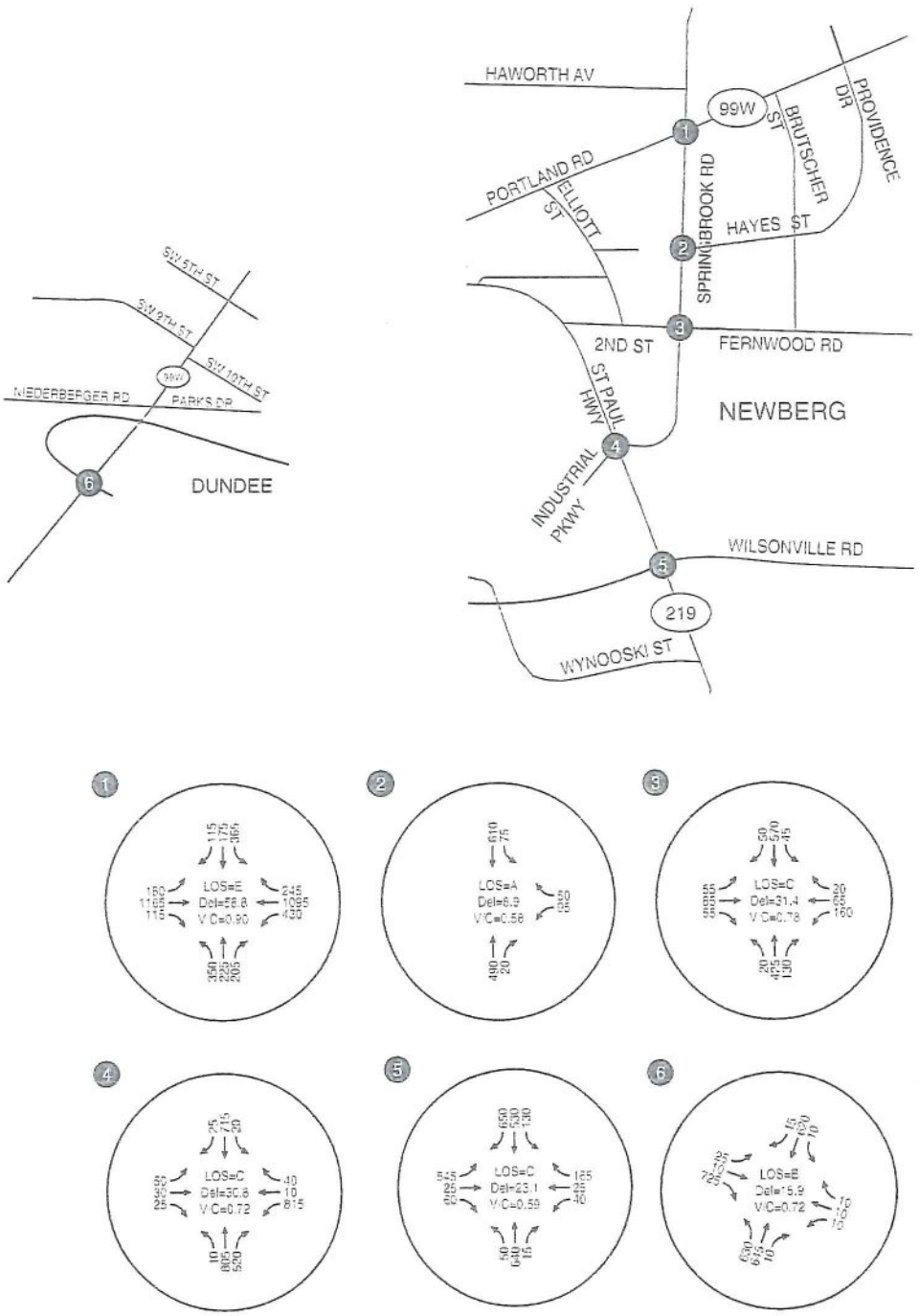
I also review the current signing plans for Phase 1E. There are no signs at the Oregon 219/Phase 1 Bypass/Wilsonville Road Intersection directing traffic to use Wilsonville Road.

2.01 3 of 7


2011 EXISTING
TRAFFIC CONDITIONS
NEWBERG, OREGON
FIGURE 3A
September 2011
NEWBERG
OLD PARRETT MOUNTAIN RD
VERMEIL
CORNELL ROAD
BENJAMIN RD
PROVIDENCE DR
BRUTSCHER ST
HAYES ST
FERNWOOD RD
WILSONVILLE RD
SPRINGBROOK ST
ELLIOTT RD
ST PAUL HWY
ROSS TRAIL
HANCOCK ST
1ST ST
MAIN ST
VILLA RD
COLLEGE ST
CHEHALEM DR
HWY 99W
HWY 240
HWY 219
KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING · PLANNING

2.01 407


NEWBERG
OLD PARRETT MOUNTAIN RD
CORRAL CREEK RD
BENJAMIN RD
PROVIDENCE DR
BRUTSCHER ST
HAYES ST
SPRINGBROOK ST
FERNWOOD RD
WILSONVILLE RD
HAWORTH AV
PORTLAND RD
VILLA RD
CHESTVIEW DR
COLLEGE ST
HANCOCK ST
1ST ST
2ND ST
ST PAUL HWY
MAIN ST
DAYTON AV
99W
240
219
LEGEND
CM = CRITICAL MOVEMENT (TWSC)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED/AWSC/CRITICAL MOVEMENT LEVEL OF SERVICE (TWSC))
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED/AWSC) / CRITICAL MOVEMENT CONTROL DELAY (TWSC)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO
TWSC = TWO WAY STOP CONTROL
AWSC = ALL-WAY STOP CONTROL
2016 NO BUILD
TRAFFIC CONDITIONS
NEWBERG, OREGON
FIGURE 2A
KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING / PLANNING
September 2011



LEGEND

LOS = INTERSECTION LEVEL OF SERVICE

Del = INTERSECTION AVERAGE CONTROL DELAY

V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

YEAR 2016 PHASE 1 SCENARIO
DESIGN HOUR TRAFFIC CONDITIONS
NEWBERG, OREGON

FIGURE 7

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION PLANNING · TRAFFIC ENGINEERING

H:\proj\file\9372 - Newberg-Dundee Bypass\2012 July Analysis TS\dwg\9372_Fig_2012_July.dwg Jul 25, 2012 - 11:39am - dargues Layout Tab: 01

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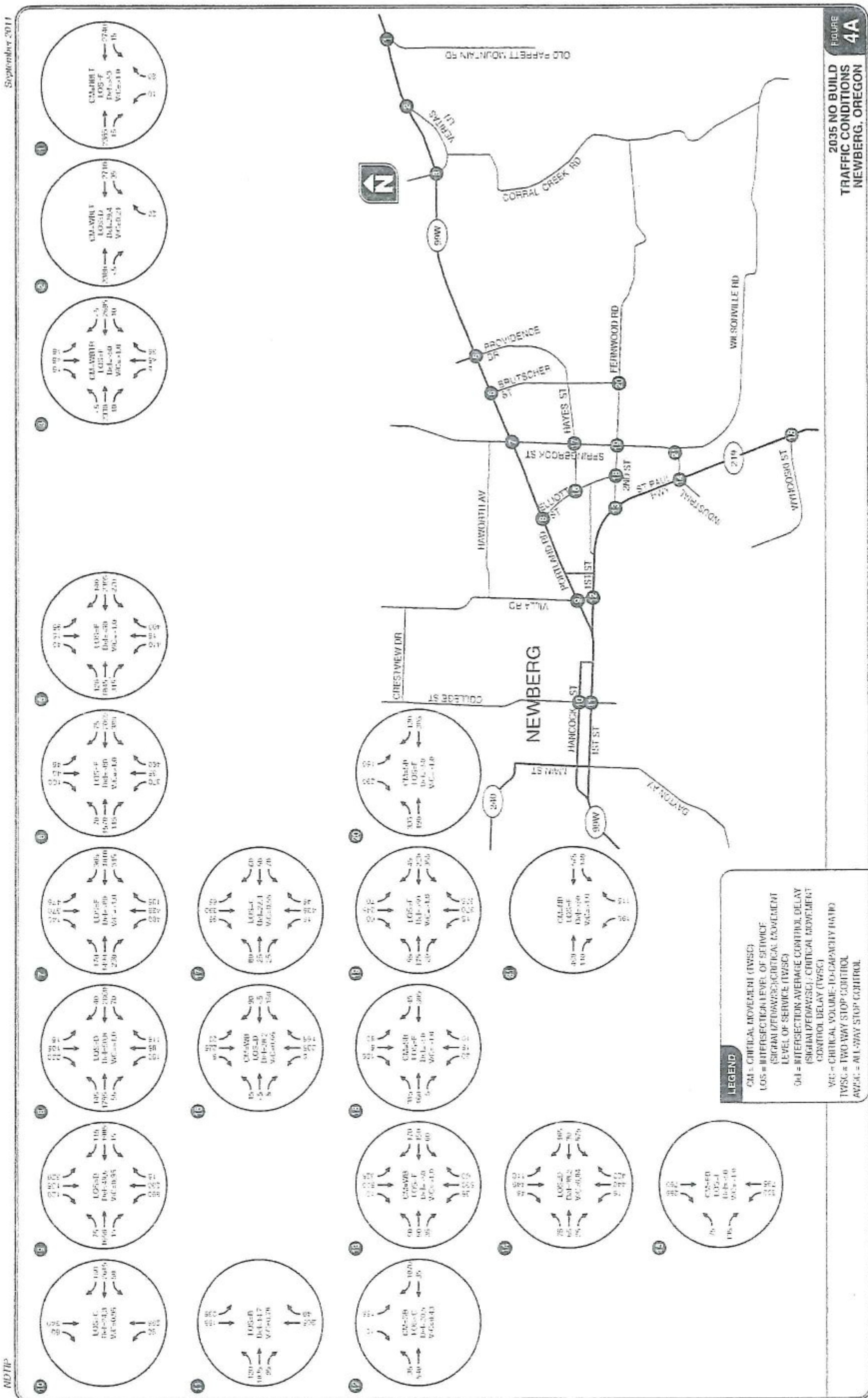
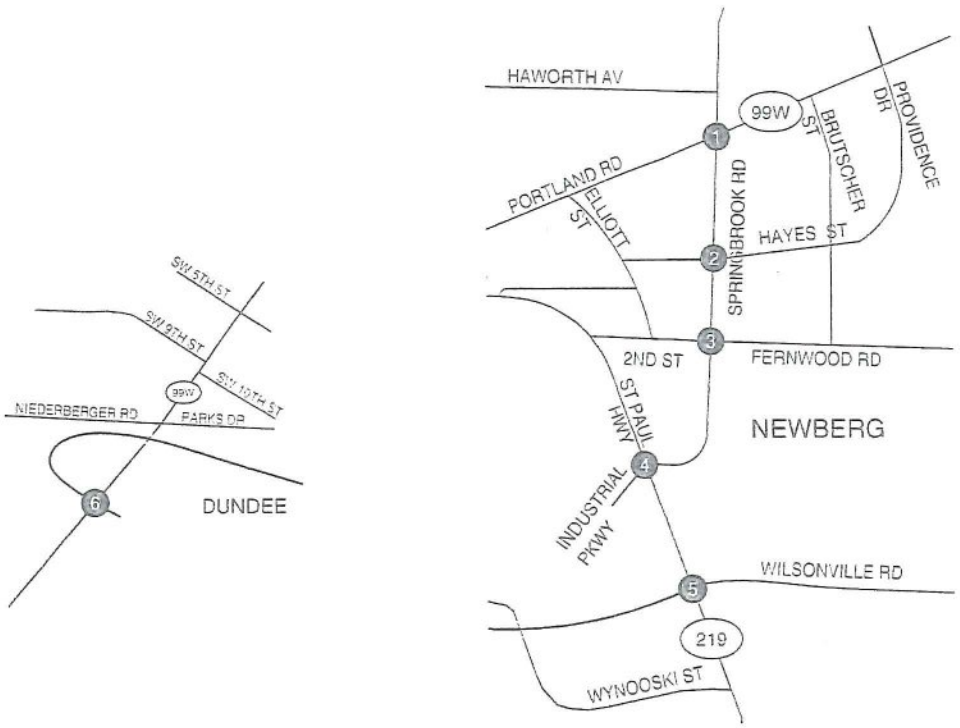
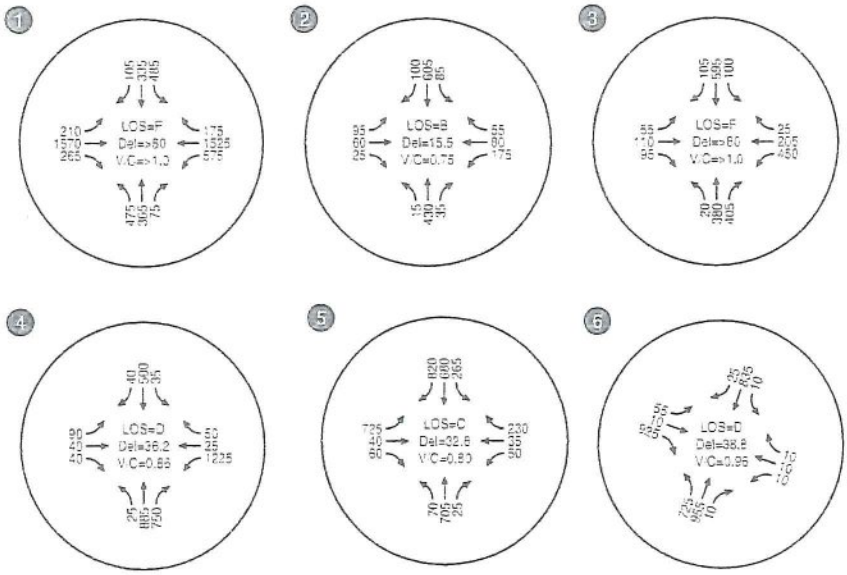


September 2011
FIGURE 4A
2035 NO BUILD
TRAFFIC CONDITIONS
NEWBERG, OREGON
OLD PARRETT MOUNTAIN RD
CORRAL CREEK RD
99W
PROVIDENCE DR
FERNWOOD RD
WILSONVILLE RD
HAYES ST
SPRINGBROOK ST
HAWORTH AV
PORTLAND RD
VILLA RD
CRESTVIEW DR
COLLEGE ST
NEWBERG
HANCOCK ST
1ST ST
MAIN ST
DAYTON AV
240
219
LEGEND
KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING / PLANNING

2.01
7 of 7





LEGEND

LOS = INTERSECTION LEVEL OF SERVICE

Del = INTERSECTION AVERAGE CONTROL DELAY

V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

YEAR 2035 PHASE 1 SCENARIO
DESIGN HOUR TRAFFIC CONDITIONS
NEWBERG, OREGON

FIGURE 8

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION PLANNING · TRAFFIC ENGINEERING

H:\proj\k\9372 - Newberg-Dundee Bypass\2012 July Analysis TST\dwg\9372_Fig_2012_July.dwg Jul 25, 2012 - 11:39am - dnguea Layout Tab: 02

eMail Chain: Kittleson/Parametrix Re Wilsonville Rd Impact Analysis 2.02 1004

On Nov 13, 13, at 4:20 PST, Julia Kuhn <jkuhn@kittelson.com> wrote:
This can only be addressed by the statewide model, that we don't have access to, only tpau. A change this insignificant will unlikely change the results in this model.

Julia Kuhn

On Nov 13, 2013, at 3:28 PM, "Brent Ahrend" <BAhrend@mcknze.com> wrote:

Julia,

We are not concerned about the trips already on Wilsonville Road, and agree they would not change with the direct connection. The question is if the more attractive connection would cause trips to change their routing from other roadways (McKay Road, Hwy 99W, etc…). I believe the model must be run with this connection in order to answer the question of potential changes in trips using Wilsonville Road.

Brent

From: Julia Kuhn [mailto:jkuhn@kittelson.com] **Sent:** Wednesday, November 13, 2013 3:01 PM **To:** Brent Ahrend **Cc:** wciz@parametrix.com; kelly.l.amador@odot.state.or.us; Cole Presthus **Subject:** Re: Newberg Bypass

Actually that is not the case. Providing a direct connection will not change the O-D patterns of the trips using Wilsonville Road. As I mentioned this morning a select link on Wilsonville shows an extremely low number of vehicles with an OD pair that can be served by the bypass so a direct connection will not change things. Let me know if you have questions.

Julia Kuhn
503-701-4346

On Nov 13, 2013, at 2:45 PM, "Brent Ahrend" <BAhrend@mcknze.com> wrote:
Julia,

Based on what you just sent me, it does not appear the TPAU model included the realignment of Wilsonville Road opposite the Phase 1 bypass. We believe this scenario needs to be run in order to best estimate

the potential for an increase in traffic on Wilsonville Road.
As the neighbors have noted, providing a straight and convenient alignment as proposed is likely to increase volumes on Wilsonville Road.

Brent

From: Julia Kuhn [mailto:jkuhn@kittelson.com] **Sent:** Wednesday, November 13, 2013 12:43 PM **To:** Brent Ahrend **Cc:** wciz@parametrix.com; kelly.l.amador@odot.state.or.us; Cole Presthus **Subject:** RE: Newberg Bypass

Hi Brent-
TPAU provided the model and we output the results by hand so don't have the raw sheets. What I do have is a spreadsheet that outlines our detailed methodology and calculations with each of the following:
Existing count data, existing model volumes, future model volumes and volumes used for calculations.
You can find it in the attached spreadsheet. I trust that this meets your needs.
Julia

From: Brent Ahrend [mailto:BAhrend@mcknze.com] **Sent:** Wednesday, November 13, 2013 12:02 PM **To:** Julia Kuhn **Cc:** wciz@parametrix.com; kelly.l.amador@odot.state.or.us; Cole Presthus **Subject:** RE: Newberg Bypass

Julia,

I'm assuming TPAU provided you with pdf's of the model output that you used in developing the 2035 volumes. Did you not include those output sheets as well as your detailed capacity calculations in a technical appendix for your analysis?

I'm also assuming you are able to retrieve information from archives that are only two years old.

Without this modeling information, I can't confirm what you told me in today's meeting about traffic impacts on Wilsonville Road or verify the projections in your analysis are consistent with the modeling.

Brent

From: Julia Kuhn [mailto:jkuhn@kittelson.com] **Sent:** Wednesday, November 13, 2013 11:48 AM **To:** Brent Ahrend **Cc:** wciz@parametrix.com **Subject:** RE: Newberg Bypass

Hi Brent-
At this point, that information has been long archived. I apologize. Is there anything else I can provide?

From: Brent Ahrend [mailto:BAhrend@mcknze.com] **Sent:** Wednesday, November 13, 2013 11:36 AM **To:** Julia Kuhn **Cc:** wciz@parametrix.com **Subject:** RE: Newberg Bypass

Julia,

Thanks again for taking the time to meet with me this morning. Your memo from Sept 2011 references modeling used in the traffic projections for 2035, and you noted in the meeting a TPAU model was updated for use in this analysis. Model output information was not included in your memo. Could you provide the model output showing volumes on Wilsonville Road and the area around the Springbrook/Hwy 219 intersection for the three scenarios – no-build, phase 1 and full build of the bypass.

Thanks,

Brent

From: Julia Kuhn [mailto:jkuhn@kittelson.com] **Sent:** Tuesday, November 05, 2013 10:54 AM **To:** Brent Ahrend **Cc:** wciz@parametrix.com **Subject:** RE: Newberg Bypass

Hi Brent-
Bill Ciz (from Parametrix) and I would be happy to meet with you next week. Would it be possible to meet us at my office at 8:30 or 9 next Wednesday the 13th?
Thanks,
Julia

From: Brent Ahrend [mailto:BAhrend@mcknze.com] **Sent:** Friday, November 01, 2013 11:33 AM **To:** Julia Kuhn **Cc:** Brian Dunn **Subject:** Newberg Bypass

2.02 484

Julia,

I just spoke with Brian Dunn and he suggested I contact you for specific questions related to the Phase 1 bypass traffic projections.

Mackenzie has been asked by Fred Meyer and the Ladd Hill Neighborhood to look into the volume projections and planned intersection changes, primarily to understand what the changes will be and how they might affect operation of roadways and intersections adjacent to them.

For Fred Meyer, they want to know what changes are being made to the Hwy 99W/Springbrook intersection and how these changes and volumes may affect their driveways on the two roadways.

For the neighborhood, they are concerned the planned connection of Wilsonville Road opposite the Phase 1 bypass will encourage traffic to use Wilsonville Road instead of traveling back to Hwy 99W. I was provided volume figures showing the 2016 and 2035 build and no-build conditions (see attached). I noticed no change in volume on Wilsonville Road for 2016, but an increase in 2035 of 5 westbound and 50 eastbound vehicles.

Are you available to discuss some of these issues? I'm available most of the day on Monday.

Thanks,

Brent T. Ahrend, PE
Senior Associate | Asst Department Head – Transportation Planning

Architecture · Interiors · Engineering · Planning

P 503.224.9560 W mcknze.com C vcard RiverEast Center 1515 SE Water Ave, Suite 100 Portland OR 97214

MACKENZIE.
DESIGN DRIVEN · CLIENT FOCUSED

November 14, 2013

Ladd Hill Neighborhood Association
Attention: John Freeman and Stan Halle, Co-Presidents
c/o: Cole Presthus
7045 NE Earlwood Road
Newberg, OR 97132

Re: **Newberg Bypass Review**
Wilsonville Road Impacts
Project Number 2130551.01

Dear Mr. Freeman & Mr. Halle:

At your request, Mackenzie has reviewed the proposed ODOT Newberg-Dundee Bypass Phase 1 project for potential traffic increases on Wilsonville Road. We have reviewed available information and met with ODOT project representatives from Parametrix and Kittelson & Associates.

The Phase 1 project includes a termination of the Bypass at Hwy 219 opposite a realigned Wilsonville Road. Wilsonville Road currently intersects Springbrook Road approximately 580 feet west of Hwy 219. This Hwy 219 area of the Phase 1 project is shown in the attached diagram.

Traffic projections prepared by Kittelson & Associates and presented in their September 2011 memorandum show no change in the volume on Wilsonville Road between the 2016 no-build option and the Phase 1 project condition. The 2035 volumes show a slight increase in volumes with the Phase 1 project condition, with total volumes on Wilsonville Road increasing from 590 to 645 vehicles in the PM peak hour. These projections were based on transportation models provided by the Oregon Department of Transportation's Transportation Planning and Analysis Unit (TPAU), with final intersection volume estimates processed in accordance with accepted practice based on National Cooperative Highway Research Progrom (NCHRP) Report 255.

Through our review and discussions with project representatives, it became apparent that the modeling prepared for the project assumed the terminus of Wilsonville Road would remain at Springbrook. No modeling was prepared for the proposed terminus of Wilsonville Road opposite Phase 1 of the Bypass at Hwy 219.

While the project representatives from Kittelson & Associates do not believe volumes would increase on Wilsonville Road, that assessment is based on a review of the traffic already using the roadway. We recommend modeling be prepared with the proposed alignment to identify any rerouting of trips from other roadways (McKay Road, Hwy 99W) to Wilsonville Road with the more direct connection to both Hwy 219 and Phase 1 of the Bypass. This modeling would need to extend to the City of Wilsonville and I-5.

2.03
2 of 3

Because the modeling prepared for the Phase 1 Bypass analysis did not correctly model the proposed alignment of Wilsonville Road at Hwy 219, we cannot confirm that the volume projections provided by ODOT project representatives are reasonable.

We recommend the following.

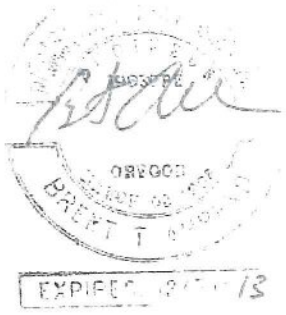
- ODOT should provide an updated model of the proposed Wilsonville Road alignment, addressing the potential reroute of trips traveling to and from I-5 and the City of Wilsonville.
- If traffic volumes on Wilsonville Road are projected to be higher based on updated modeling of the correct road configuration, additional mitigation for Wilsonville Road should be considered, which may include the following.
  - Realign Wilsonville Road to intersection Hwy 219 opposite Wynooski Road, consistent with ODOT's Full Bypass alignment recommendation.
  - Keep current Wilsonville Road alignment, with a terminus at Springbrook Road.
  - Consider aligning Springbrook opposite the Phase 1 Bypass at Hwy 219, as this would provide a more direct connection for the by-pass to Hwy 99W than the proposed alignment.
- If the proposed alignment of Wilsonville Road opposite Phase 1 of the Bypass is constructed, the following should be provided.
  - Utilize signing and striping to direct through traffic to the south or north on Hwy 219.
  - Conduct traffic counts on Wilsonville Road before and after opening of Phase 1. These counts should include more than one day and different times of the year, as the Bypass will have seasonal variations in traffic flow. If the counts with the Bypass are found to be higher, the mitigation measures above should be considered to mitigate the impacts.

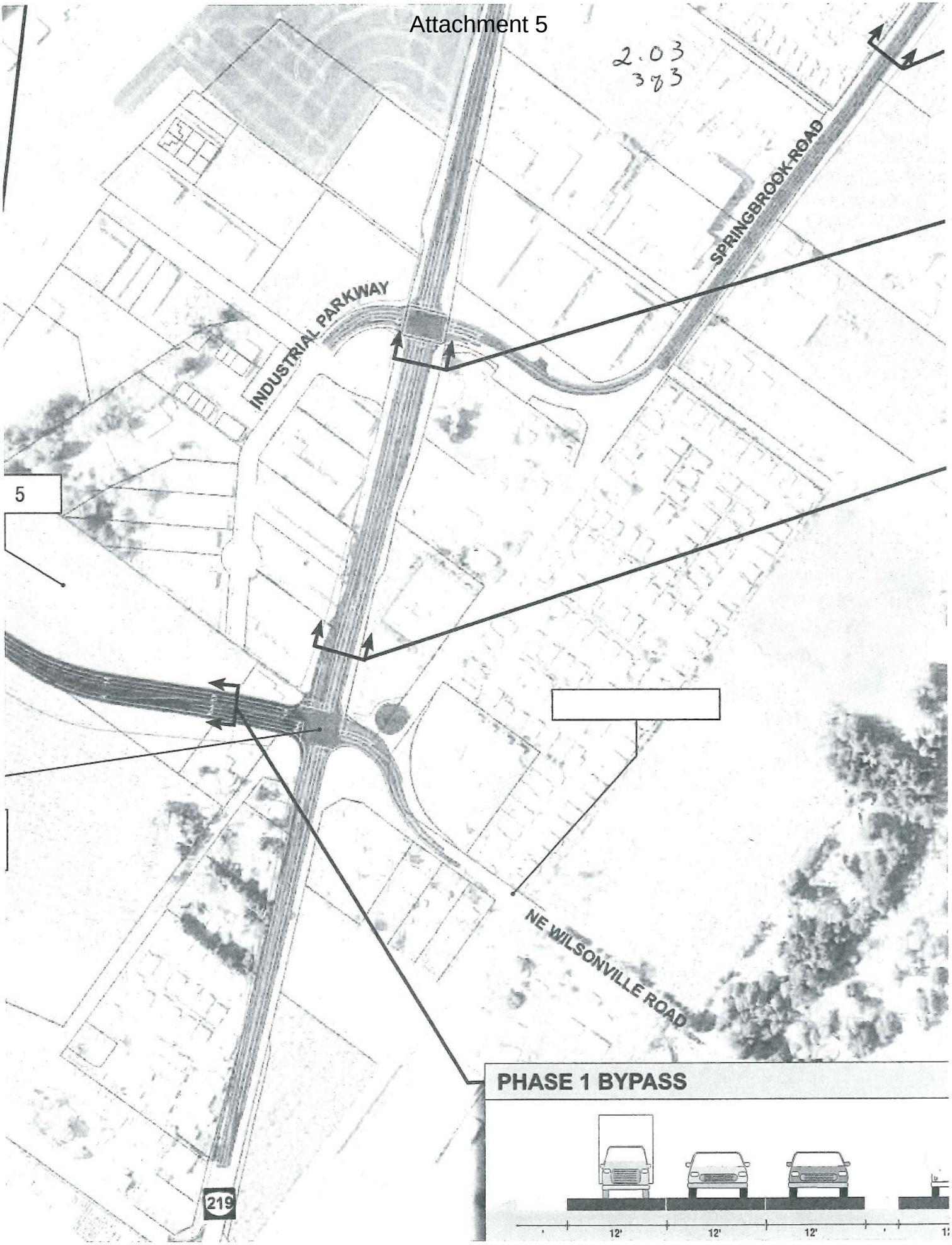
We understand the proposed Phase 1 alignment may be "temporary", but there is no funding for future phases of the Bypass. This configuration may be in place for many years or even decades, and it is important that the upcoming Phase 1 construction configuration work long term.

Sincerely,

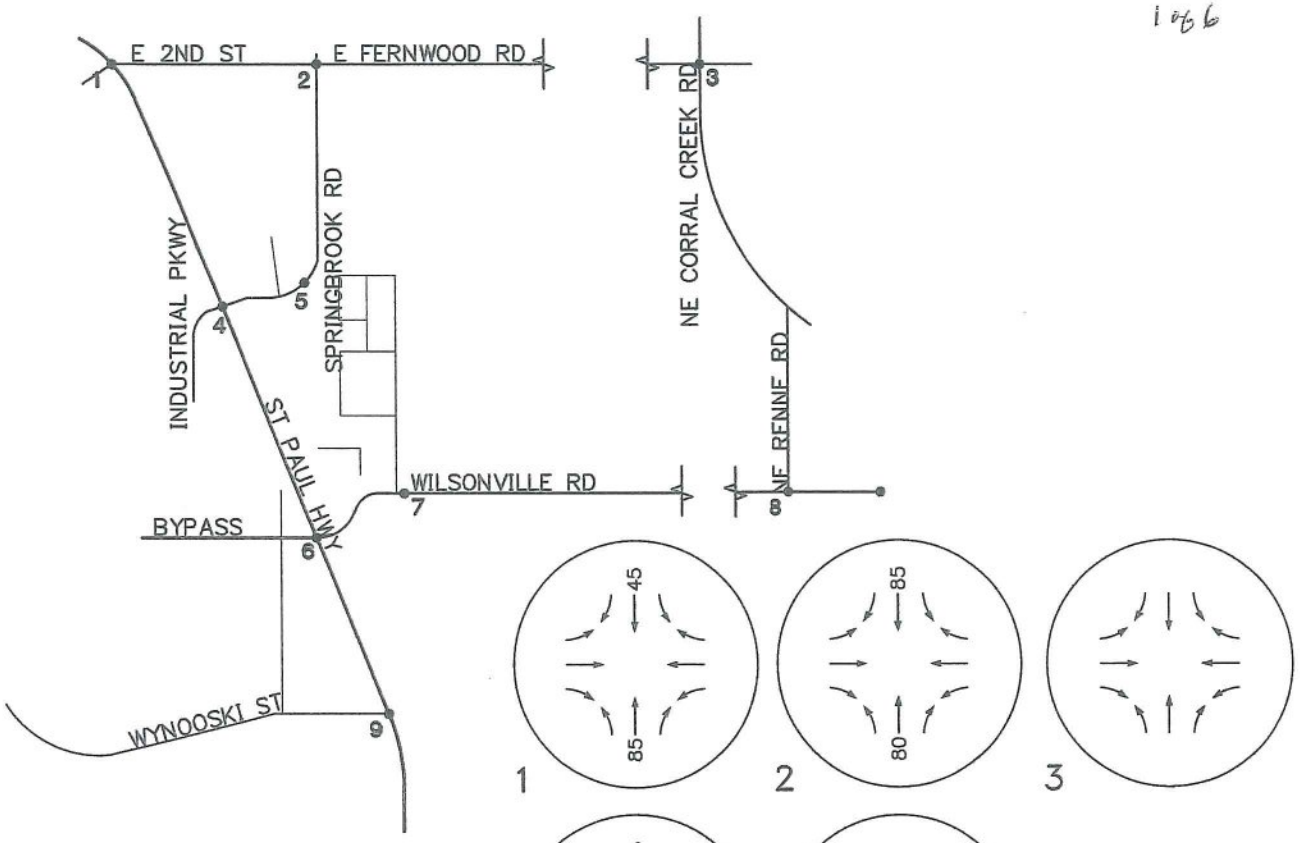
Brent Ahrend, PE
Senior Associate | Traffic Engineer

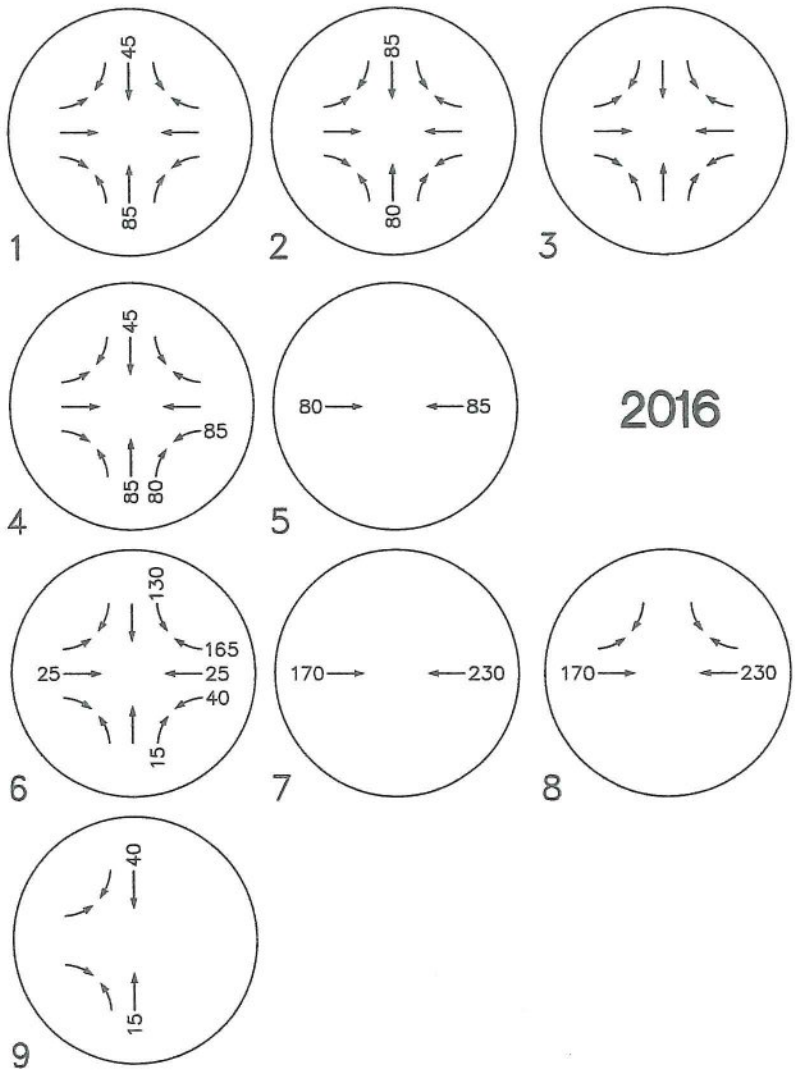
Enclosure: Phase 1 alignment at Hwy 219




2.03
3 of 3
SPRINGBROOK ROAD
INDUSTRIAL PARKWAY
5
NE WILSONVILLE ROAD
219
PHASE 1 BYPASS
12'
12'
12'

2.04
106





2016

MACKENZIE. Portland 503.224.9560 Vancouver 360.695.7879 Seattle 206.749.9993 www.mcknze.com Architecture ▫ Interiors Planning ▫ Engineering	DATE: 04.17.15 DRAWN BY: JTJ CHECKED BY: BTA JOB NO: 2130551.03	OPTION 1 PM PEAK HOUR WILSONVILLE ROAD REVIEW NEWBERG, OREGON	FIGURE 1

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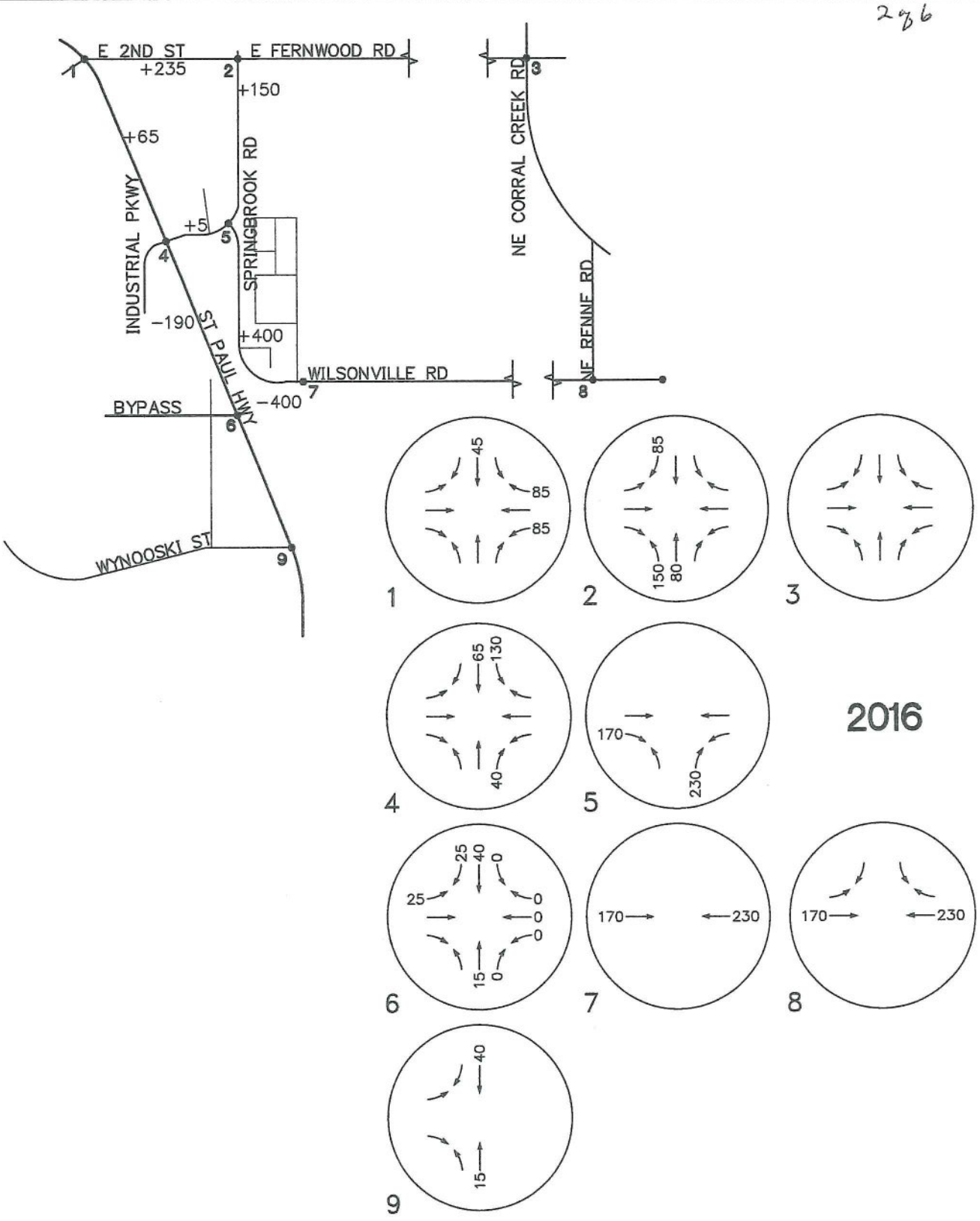
286



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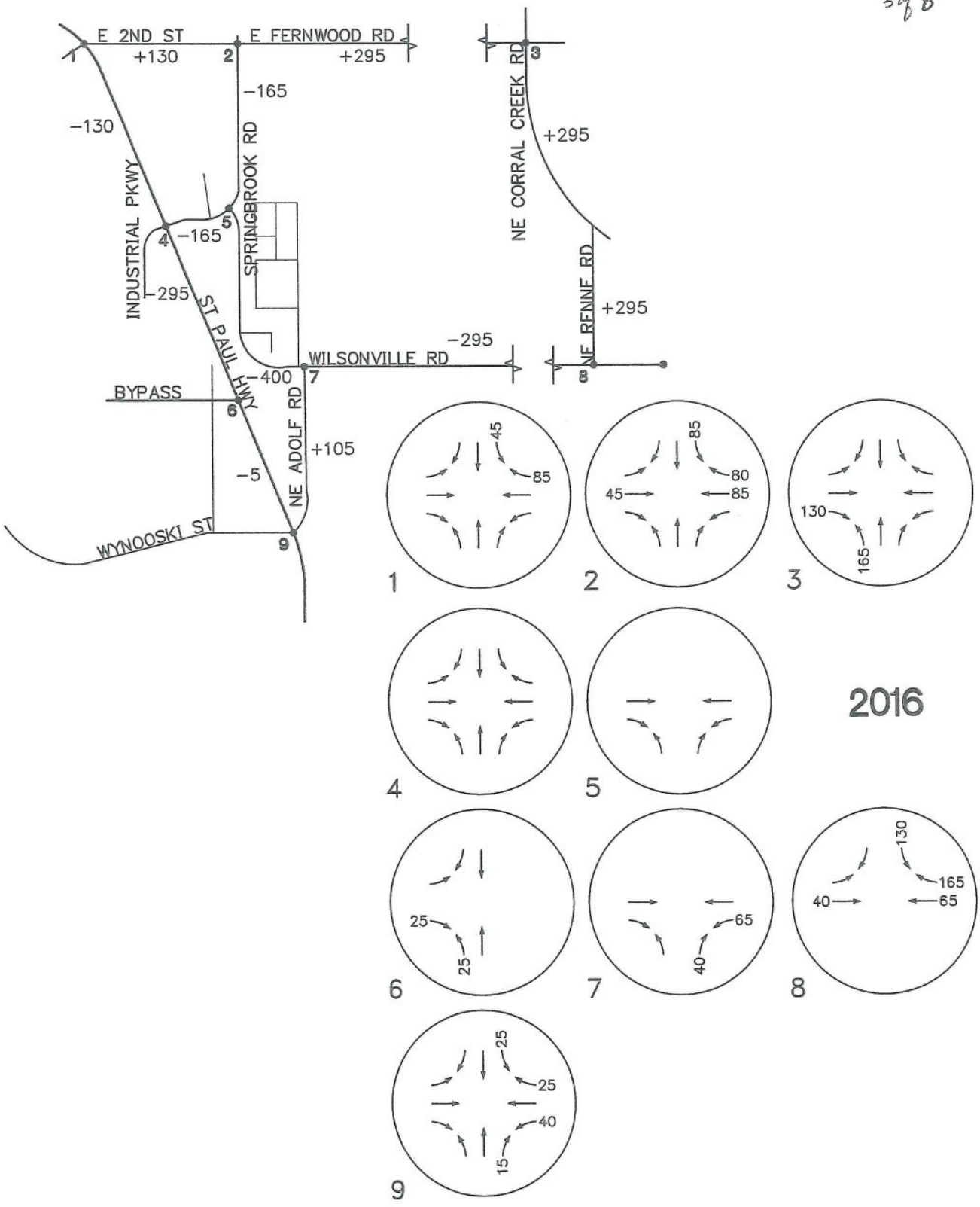
	DRAWN BY: JTJ		
	CHECKED BY: BTA		
	JOB NO: 2130551.03	WILSONVILLE ROAD REVIEW NEWBERG, OREGON	

2.04
3 of 3



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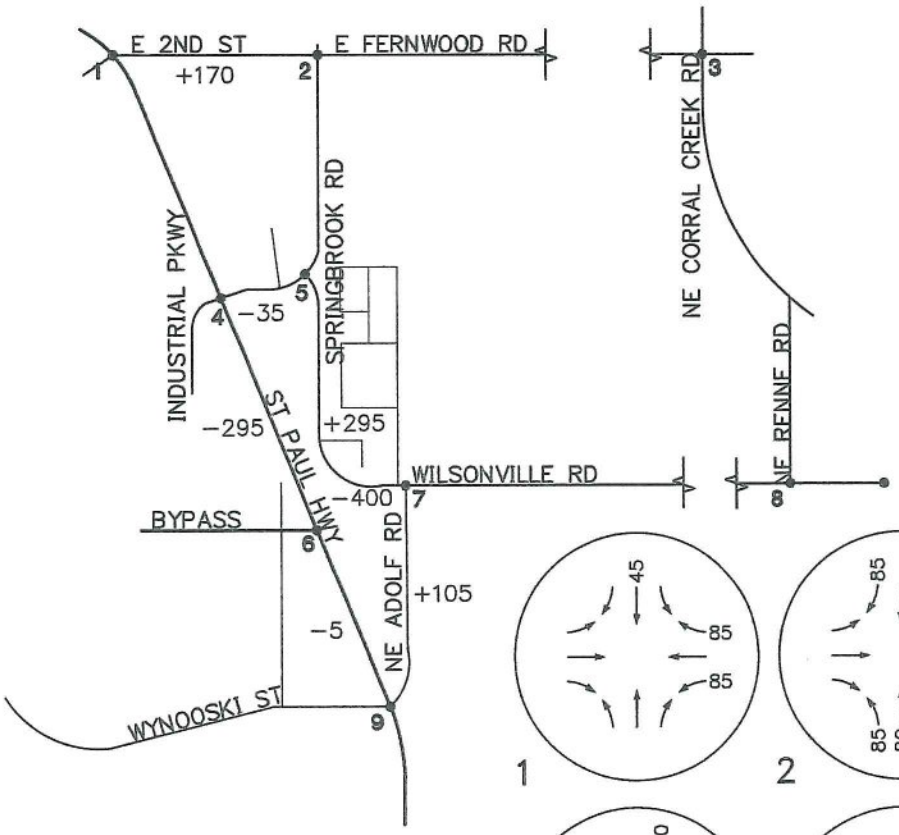
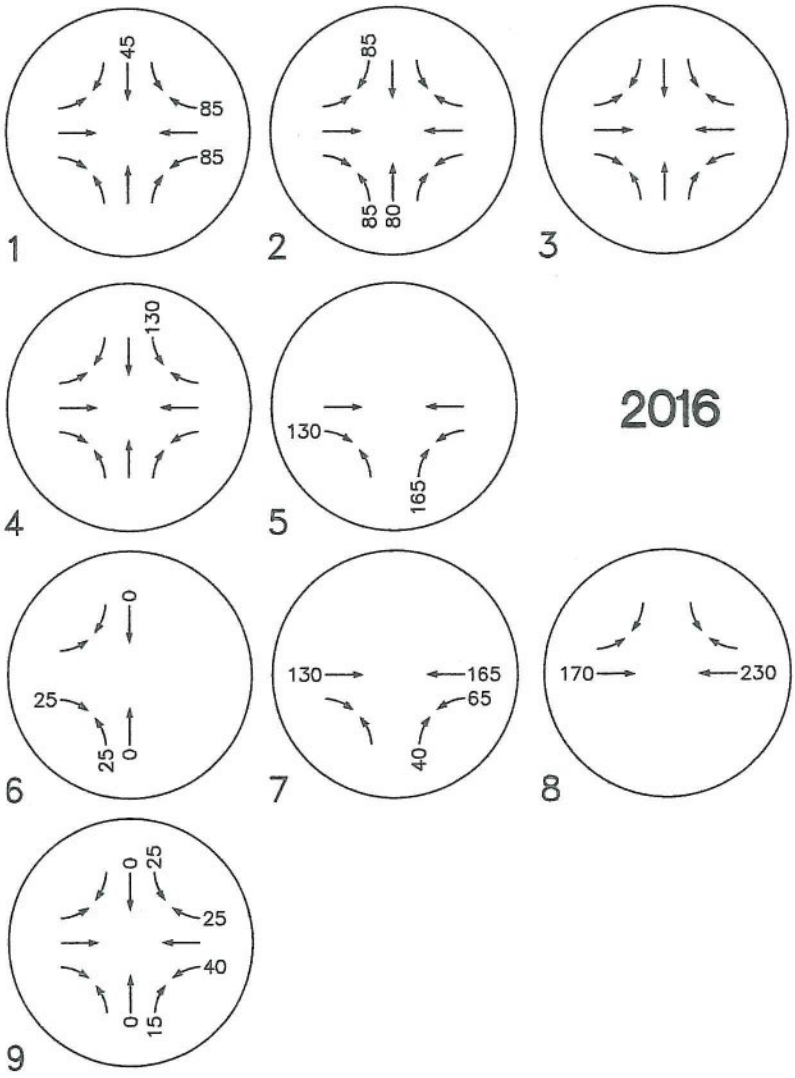
2.07
406





2016

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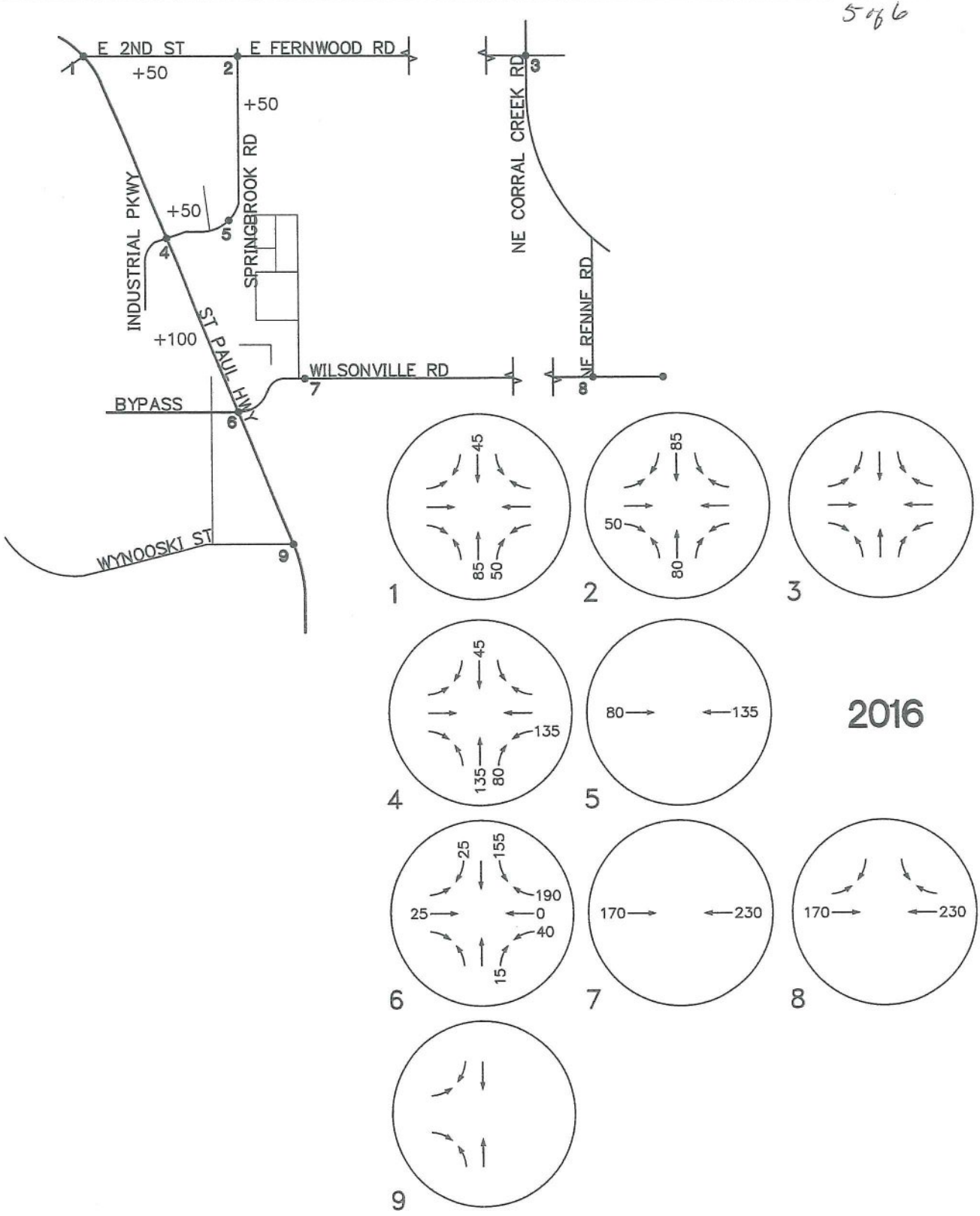
2.04
5 of 6



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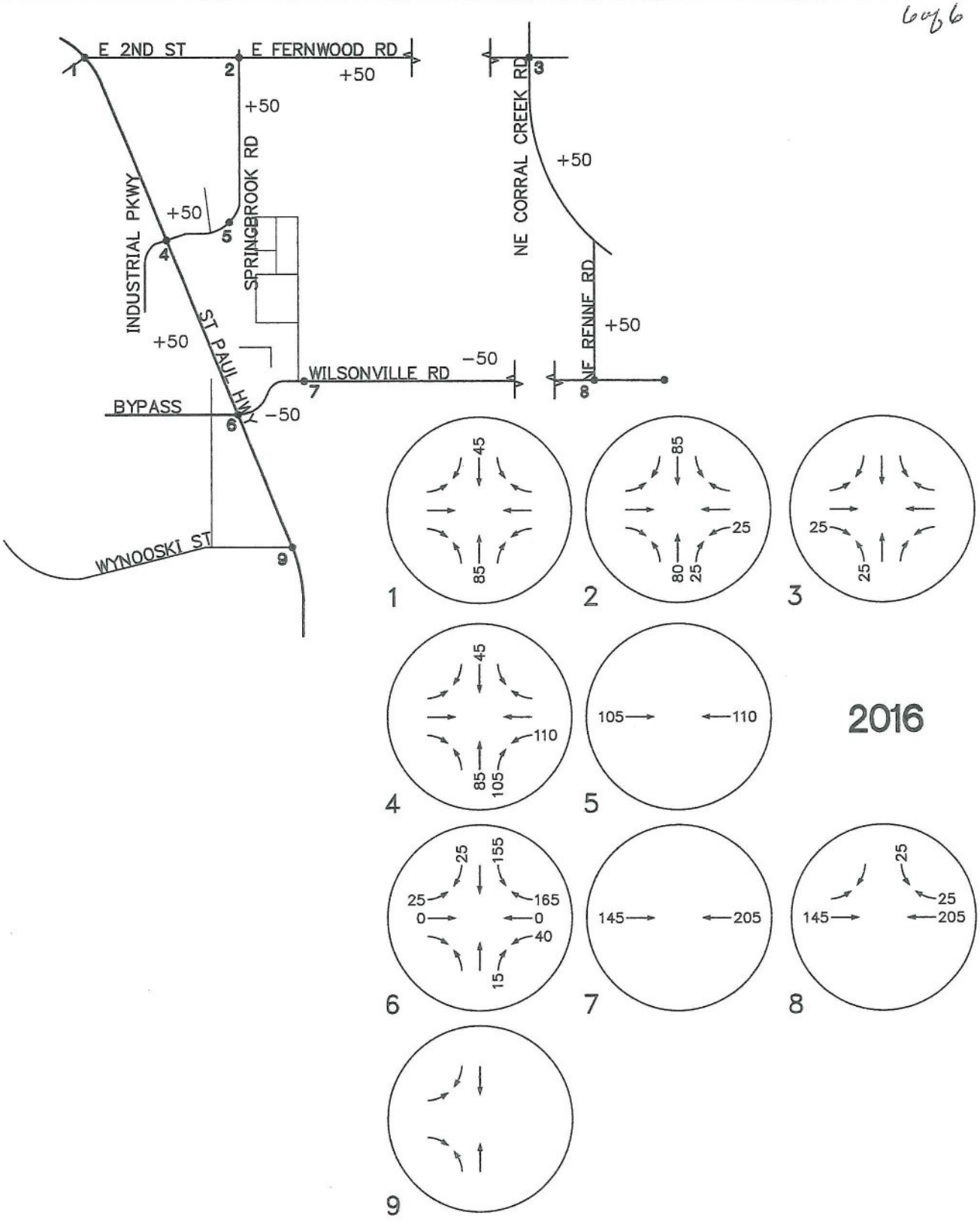
2.04
6 of 6



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2.05
1 of 3

MACKENZIE.

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December 15, 2014

Ladd Hill Neighborhood Association
Attention: Stan Halle
7045 NE Earlwood Road
Newberg, OR 97132

Re: **Newberg Dundee Phase 1 Bypass - Wilsonville Road Alignment**
Summary of Modeling Review and Potential Effect
Project Number 2130551.02

Dear Mr. Halle:

As requested by the Ladd Hill Neighborhood Association (LHNA), Mackenzie is providing a summary of our review related to the Phase 1 Newberg Dundee Bypass project, and specifically the Wilsonville Road alignment. Our review addresses the LHNA concerns about the potential for increased traffic on Wilsonville Road due to the planned alignment opposite the Phase 1 Bypass.

Initially the LHNA contacted us on September 18, 2013 to review a July 1, 2013 Memo from William Ciz with the Newberg-Dundee Bypass Project. The memo presents a quick summary of the existing and future volumes with/without the Phase 1 bypass. Upon review of the memo, we met with Mr. Ciz on November 6, 2013; and subsequently with Julia Kuhn from Kittelson & Associates on November 13, 2013 to review the traffic volumes, and learned the volumes were based on transportation models created by ODOT's Transportation and Planning Analysis Unit (TPAU). On November 14, 2013, we provided a summary of the meetings and our findings to the LHNA, noting the model was not run with an assumed alignment of Wilsonville Road opposite the Phase 1 bypass, and recommended this be done. The volume estimates for this alignment were prepared by Kittelson & Associates by just rerouting traffic volumes from models prepared with other roadway alignments.

On April 15, 2014, I was contacted by John Bridges on behalf of the LHNA. Mr. Bridges asked us to work with ODOT to obtain updated modeling that would assess the impacts of the phase 1 terminus on Wilsonville Road, and provide our analysis of the model. A scope of services proposal was provided to John Bridges on April 18, 2014.

An email was received from Christina McDaniel-Wilson, PE with ODOT's Planning Analysis Unit on April 29, 2014, offering to re-run models to reflect various Wilsonville Road alignment issues. During a follow up telephone conversation with Christina McDaniel-Wilson on May 1, 2014, to discuss the specifics of the modeling to be re-run. I discovered that the model created for the bypass project only extended to the edges of Newberg and Dundee. The "extents" of the model had fixed volumes, so no matter the road alignments within the Cities, the volume at each "extent" of the model would remain the same. These extents include Hwy 99W, Wilsonville Road, and Hwy 219, among others. In order for a model to determine if traffic would reroute with the planned phase 1 alignment, the model would need to be expanded to extend east to I-5, north to Hwy 99W and south to Ehlen Road. It is because of this limitation on

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the scope of the initial modeling that the model runs or outputs for the Phase 1 scenario would never show an increase in traffic on Wilsonville Road east of Newberg. This discovery was significant new information, and I shared it with Mr. Bridges and the LHNA shortly after I learned about it.

I then attempted to get ODOT to perform the analysis of the impacts on Wilsonville Road. In response, ODOT noted an expansion of the model would take extensive effort and cost. ODOT offered to run the model with various assumed volumes on the Wilsonville Road, extent to see if changes to the routing of traffic through Newberg and Dundee would be seen. However, the model runs provided by ODOT on May 22, 2014 still did not provide the correct alignment configuration, and also did not show any change in the general percentage of traffic using the phase 1 bypass and Wilsonville Road. In summary, ODOT was unable to determine, using the modeling it had conducted, that phase 1 of the bypass would not have a significant impact on traffic volumes and public safety on Wilsonville Road. ODOT's analysis remained inconclusive in assessing the potential for changes in traffic volumes on Wilsonville Road. I emailed a summary of our review of the re-run models and our findings to the LHNA on June 13, 2014.

Because modeling with Wilsonville Road opposite the phase 1 bypass did not provide any useful analysis or results for the potential traffic impacts on Wilsonville Road, the LHNA requested alternate configurations of the interchange with Wilsonville Road be considered in lieu of ODOT performing the necessary analysis. Specifically, on June 23, 2013, I provided an email summary to the LHNA of our alternate road alignments analysis, recommending realignment of Wilsonville Road to Adolf Road and an intersection at Hwy 219 opposite Wynooski Road. This potential solution has the benefit of being consistent with the full bypass alignment recommendation.

Short of having an available model that actually assesses the impact on Wilsonville Road, we reviewed GPS and mapping software to see if vehicles located at the Hwy 219/Wilsonville Road intersection would be routed along Wilsonville Road, or Highway 99W. We found that vehicles traveling to Wilsonville and locations along I-205 would automatically be routed to Wilsonville Road instead of Highway 99W during the afternoon peak hours. In other words, widely available GPS mapping software will likely direct significant amounts of additional traffic onto Wilsonville Road.

In addition, an alignment of a major highway opposite a lower classification roadway typically will cause drivers to continue on the straight alignment; especially if that alignment is in the general direction of desired travel. ODOT has a general policy to not align highway ramp terminals opposite any public street intersections, in part to keep the roadway hierarchy separate. ODOT also requires the nearest local street intersections to a highway interchange be located a minimum of ¼ mile away.

The existing condition of Wilsonville Road between Wilsonville and Newberg is that of a two-lane rural road posted for 45 mph, with no shoulders, intersections with limited sight distances, and sharp curves posted for 25 mph. Increases in through traffic, especially truck traffic, would have a potentially significant impact on the safety of the roadway and its current farm and residential users.

Based on the lack of proper transportation modeling we are not able to determine if the planned alignment of Wilsonville Road opposite Phase 1 of the Bypass would have a significant impact on the traffic volumes on Wilsonville Road. Despite what ODOT told the public we discovered earlier this year that ODOT had not performed the analysis to allow it to conclude one way or the other. Given the ODOT policies regarding ramp terminals, mapping software recommending the Wilsonville Road routing, and existing safety concerns on Wilsonville Road; there is a substantial likelihood of a significant impact, and proper modeling and analysis should be provided to allow ODOT and the Federal Highway Administration to consider appropriate mitigation and changes to avoid decreasing public safety on Wilsonville Road.

2.05
3 of 3

On behalf of the LHNA, Mackenzie has suggested an alternate alignment of Wilsonville Road that would avoid the potential significant impacts of the currently proposed alignment. This recommendation is a reroute to the south, following Adolf Road to intersect Hwy 219 opposite Wynooski Road. This is the ultimate alignment recommended with the full bypass project, so we believe it is consistent with prior planning documents and that it is not likely to require further analysis.

ODOT is currently in the preliminary design process for changes to the Wilsonville Road alignment and improvements along Springbrook Road. We spoke with Kelly Amador, ODOT's project leader, regarding the current schedule. She noted project bidding is expected on December 10, 2015, with contract awarding in early February 2016, and mobilization around March 2026. The plans are still in preliminary status. We requested a copy of the roadway plans for the Hwy 219/Wilsonville Road-Bypass area, and Kelly estimated they could provide that around the end of the month.

Sincerely,

Brent Ahrend, PE
Senior Associate | Traffic Engineer

c: Ralph Bloemers – Crag Law Center

2.06
1 of 3

MACKENZIE.

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January 15, 2015

Ladd Hill Neighborhood Association
Attention: Cole Presthus, PE, LHNA Co-President, Yamhill County
Stan Halle, LHNA Past Co-President, Chair Bypass Impact Committee
c/o LHNA P.O. Box 2556
Wilsonville, OR 97070

Re: **Newberg Dundee Phase I Bypass - Wilsonville Road Alignment**
Summary of Modeling Review and Potential Effect
Project Number 2130551.03

Dear Mr. Presthus and Mr. Halle:

As requested by the Ladd Hill Neighborhood Association (LHNA), Mackenzie is providing a summary of our review related to the Phase I Newberg Dundee Bypass project ("Bypass"), and specifically the Wilsonville Road alignment. Our review addresses the LHNA concerns about the potential for increased traffic on Wilsonville Road due to the planned alignment opposite the Phase I Bypass.

Initially the LHNA contacted us on September 18, 2013, to review a July 1, 2013, Memo from William Ciz with the Newberg-Dundee Bypass Project. The memo presents a quick summary of the existing and future volumes with/without the Phase I Bypass. Upon review of the memo, we met with Mr. Ciz on November 6, 2013; and subsequently with Julia Kuhn from Kittelson & Associates on November 13, 2013, to review the traffic volumes, and learned the volumes were based on transportation models created by ODOT's Transportation and Planning Analysis Unit (TPAU). On November 14, 2013, we provided a summary of the meetings and our findings to the LHNA, noting the new information identified through these meetings, namely that the model was not run with an assumed alignment of Wilsonville Road opposite the Phase I Bypass. We specifically recommended that this critical analysis be performed. The volume estimates for this alignment were prepared by Kittelson & Associates by just rerouting traffic volumes from models prepared with other roadway alignments.

On April 15, 2014, I was contacted by John Bridges on behalf of the LHNA. Mr. Bridges asked us to work with ODOT to obtain updated modeling that would assess the impacts of the Phase I terminus on Wilsonville Road, and provide our analysis of the model. A scope of services proposal was provided to John Bridges on April 18, 2014.

An email was received from Christina McDaniel-Wilson, PE, with ODOT's Planning Analysis Unit on April 29, 2014, offering to address the new information I identified regarding the extent of the models and to re-run models to reflect various Wilsonville Road alignment issues. During a follow up telephone conversation with Christina McDaniel-Wilson on May 1, 2014, to discuss the specifics of the modeling to be re-run, I discovered that the model created for the Bypass project only extended to the edges of Newberg and Dundee. The "extents" of the model had fixed volumes, so no matter the road alignments within the Cities, the volume at each "extent" of the model would remain the same. These extents include Highway 99W, Wilsonville Road, and Highway 219, among others. In order for a model to determine if

traffic would reroute with the planned Phase I alignment, the model would need to be expanded to extend east to I-5, north to Highway 99W and south to Ehlen Road. It is because of this limitation on the scope of the initial modeling that the model runs or outputs for the Phase I scenario would never show an increase in traffic on Wilsonville Road east of Newberg. This discovery was significant new information, and I shared it with Mr. Bridges and the LHNA shortly after I learned about it.

I then attempted to convey this new information to ODOT and requested that ODOT perform an analysis of the impacts on Wilsonville Road. In response, ODOT noted an expansion of the model would take extensive effort and cost. ODOT offered to run the model with various assumed volumes on the Wilsonville Road extent to see if changes to the routing of traffic through Newberg and Dundee would be seen. However, the model runs provided by ODOT on May 22, 2014, still did not provide the correct alignment configuration, and also did not show any change in the general percentage of traffic using the Phase I Bypass and Wilsonville Road. In summary, the impacts of Phase I remained very uncertain, as ODOT was unable to determine, using the modeling it had conducted, that Phase I of the Bypass would not have a significant impact on traffic volumes and public safety on Wilsonville Road. ODOT's analysis remained inconclusive in assessing the potential for changes in traffic volumes on Wilsonville Road. I emailed a summary of our review of the re-run models, our efforts to work with ODOT, and our findings to the LHNA on June 13, 2014.

Because modeling with Wilsonville Road opposite the Phase I Bypass did not provide any useful analysis or results for the potential traffic impacts on Wilsonville Road, the LHNA requested alternate configurations of the interchange with Wilsonville Road be considered in lieu of ODOT performing the necessary analysis. Specifically, on June 23, 2013, I provided an email summary to the LHNA of our alternate road alignments analysis, recommending realignment of Wilsonville Road to Adolf Road and an intersection at Highway 219 opposite Wynooski Road. This potential solution has the benefit of being consistent with the full Bypass alignment recommendation.

Short of having an available model that actually assesses the impact on Wilsonville Road, we reviewed GPS and mapping software to see if vehicles located at the Highway 219/Wilsonville Road intersection would be routed along Wilsonville Road, or Highway 99W. We found that vehicles traveling to Wilsonville and locations along I-205 would automatically be routed to Wilsonville Road instead of Highway 99W during the afternoon peak hours. In other words, widely available GPS mapping software will likely direct significant amounts of additional traffic onto Wilsonville Road.

Based on the lack of proper transportation modeling, we are not able to determine if the planned alignment of Wilsonville Road opposite Phase I of the Bypass would have a significant impact on the traffic volumes on Wilsonville Road. Despite what ODOT told the public, we discovered earlier this year that ODOT had not performed the analysis to allow it to conclude one way or the other. Given mapping software recommending the Wilsonville Road routing, and existing safety concerns on Wilsonville Road, there is a substantial likelihood of a significant impact. Therefore, proper modeling and analysis should be provided to allow ODOT and the Federal Highway Administration to consider appropriate mitigation and changes to avoid decreasing public safety on Wilsonville Road.

ODOT is currently in the preliminary design process for changes to the Wilsonville Road alignment and improvements along Springbrook Road. We spoke with Kelly Amador, ODOT's project leader, regarding the current schedule. She noted project bidding is expected on December 10, 2015, with contract awarding in early February 2016, and mobilization around March 2016. The plans are still in preliminary status. We requested a copy of the roadway plans for the Highway 219/Wilsonville Road-Bypass area, and Kelly estimated they could provide that sometime in January.

As you requested, I have also attempted to set up meetings with ODOT officials and with officials from the Federal Highway Administration. I first requested a meeting in mid-December and as of this writing I have not been successful at

2.06
3 of 3

establishing a date for a meeting. I know you are eager to get a meeting so you can determine whether ODOT and the FHWA are prepared to address the significant new information that I have uncovered. You should feel free to contact ODOT and the FHWA leadership directly if you think it would help move things along.

Sincerely,

Brent Ahrend, PE
Senior Associate | Traffic Engineer

2.07
1 of 4

HCM Signalized Intersection Capacity Analysis
3: HWY 219 & BYPASS/Wilsonville Road

2/16/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	545	25	60	40	25	165	50	640	15	130	530	650
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.89		1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3162	1534		1630	1716	1458	1630	3248		1630	1716	1458
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3162	1534		1630	1716	1458	1630	3248		1630	1716	1458
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	574	26	63	42	26	174	53	674	16	137	558	684
RTOR Reduction (vph)	0	50	0	0	0	142	0	2	0	0	0	0
Lane Group Flow (vph)	574	39	0	42	26	32	53	688	0	137	558	684
Turn Type	Prot	NA		Prot	NA	Over	Prot	NA		Prot	NA	Free
Protected Phases	3	8		7	4	5	1	6		5	2	
Permitted Phases												Free
Actuated Green, G (s)	16.1	15.4		3.7	3.0	14.5	5.5	25.4		14.5	34.4	75.0
Effective Green, g (s)	15.6	14.9		3.2	2.5	14.0	5.0	24.9		14.0	33.9	75.0
Actuated g/C Ratio	0.21	0.20		0.04	0.03	0.19	0.07	0.33		0.19	0.45	1.00
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	657	304		69	57	272	108	1078		304	775	1458
v/s Ratio Prot	c0.18	0.03		0.03	0.02	0.02	0.03	0.21		0.08	c0.33	
v/s Ratio Perm												c0.47
v/c Ratio	0.87	0.13		0.61	0.46	0.12	0.49	0.64		0.45	0.72	0.47
Uniform Delay, d1	28.7	24.7		35.3	35.6	25.4	33.8	21.2		27.1	16.7	0.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	12.3	0.1		12.1	4.2	0.1	2.5	2.9		0.8	5.7	1.1
Delay (s)	41.0	24.8		47.4	39.7	25.5	36.3	24.1		27.9	22.4	1.1
Level of Service	D	C		D	D	C	D	C		C	C	A
Approach Delay (s)		38.8			30.8			25.0			12.4	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: HWY 219 & BYPASS/Wilsonville Road

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2/16/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	570	0	60	40	0	190	50	640	15	130	530	650
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5		4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	0.97		1.00	1.00		1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00		0.85	1.00		0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3162		1458	1630		1458	1630	3248		1630	1716	1458
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3162		1458	1630		1458	1630	3248		1630	1716	1458
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	600	0	63	42	0	200	53	674	16	137	558	684
RTOR Reduction (vph)	0	0	60	0	0	65	0	2	0	0	0	0
Lane Group Flow (vph)	600	0	3	42	0	135	53	688	0	137	558	684
Turn Type	Prot		Over	Prot		Over	Prot	NA		Prot	NA	Free
Protected Phases	3		1	7		5	1	6		5	2	
Permitted Phases												Free
Actuated Green, G (s)	17.2		4.2	17.2		9.4	4.2	36.4		9.4	41.6	75.0
Effective Green, g (s)	16.7		3.7	16.7		8.9	3.7	35.9		8.9	41.1	75.0
Actuated g/C Ratio	0.22		0.05	0.22		0.12	0.05	0.48		0.12	0.55	1.00
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.5		2.5	2.5		2.5	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	704		71	362		173	80	1554		193	940	1458
v/s Ratio Prot	c0.19		0.00	0.03		c0.09	0.03	0.21		0.08	c0.33	
v/s Ratio Perm												0.47
v/c Ratio	0.85		0.04	0.12		0.78	0.66	0.44		0.71	0.59	0.47
Uniform Delay, d1	28.0		34.0	23.3		32.1	35.0	12.9		31.8	11.4	0.0
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	9.7		0.2	0.1		18.9	17.0	0.9		10.6	2.8	1.1
Delay (s)	37.6		34.2	23.4		51.0	52.0	13.9		42.4	14.1	1.1
Level of Service	D		C	C		D	D	B		D	B	A
Approach Delay (s)		37.3			46.2			16.6			10.5	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: HWY 219 & BYPASS/Wilsonville Road

2.07
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2/16/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	725	40	60	50	35	230	70	705	25	265	680	820
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.91		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3162	1561		1630	1716	1458	1630	3243		1630	1716	1458
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3162	1561		1630	1716	1458	1630	3243		1630	1716	1458
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	763	42	63	53	37	242	74	742	26	279	716	863
RTOR Reduction (vph)	0	49	0	0	0	193	0	2	0	0	0	0
Lane Group Flow (vph)	763	56	0	53	37	49	74	766	0	279	716	863
Turn Type	Prot	NA		Prot	NA	Over	Prot	NA		Prot	NA	Free
Protected Phases	3	8		7	4	5	1	6		5	2	
Permitted Phases												Free
Actuated Green, G (s)	29.0	28.0		6.3	5.3	24.8	10.8	44.9		24.8	58.9	120.0
Effective Green, g (s)	28.5	27.5		5.8	4.8	24.3	10.3	44.4		24.3	58.4	120.0
Actuated g/C Ratio	0.24	0.23		0.05	0.04	0.20	0.09	0.37		0.20	0.49	1.00
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	750	357		78	68	295	139	1199		330	835	1458
v/s Ratio Prot	c0.24	0.04		0.03	0.02	0.03	0.05	0.24		c0.17	c0.42	
v/s Ratio Perm												c0.59
v/c Ratio	1.02	0.16		0.68	0.54	0.17	0.53	0.64		0.85	0.86	0.59
Uniform Delay, d1	45.8	37.0		56.2	56.5	39.5	52.5	31.2		46.0	27.1	0.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.84	1.05	1.00
Incremental Delay, d2	37.3	0.2		19.3	6.8	0.2	3.0	2.6		9.5	5.9	0.9
Delay (s)	83.0	37.1		75.4	63.4	39.7	55.6	33.8		48.1	34.3	0.9
Level of Service	F	D		E	E	D	E	C		D	C	A
Approach Delay (s)		77.5			48.0			35.7			20.9	
Approach LOS		E			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	39.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

2.07
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HCM Signalized Intersection Capacity Analysis
3: HWY 219 & BYPASS/Wilsonville Road

2/16/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	765	0	60	50	0	265	70	705	25	265	680	820
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5		4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	0.97		1.00	1.00		1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00		0.85	1.00		0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3162		1458	1630		1458	1630	3243		1630	1716	1458
Flt Permitted	0.95		1.00	0.95		1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3162		1458	1630		1458	1630	3243		1630	1716	1458
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	805	0	63	53	0	279	74	742	26	279	716	863
RTOR Reduction (vph)	0	0	60	0	0	41	0	2	0	0	0	0
Lane Group Flow (vph)	805	0	3	53	0	238	74	766	0	279	716	863
Turn Type	Prot		Over	Prot		Over	Prot	NA		Prot	NA	Free
Protected Phases	3		1	7		5	1	6		5	2	
Permitted Phases												Free
Actuated Green, G (s)	33.4		7.1	33.4		22.7	7.1	51.9		22.7	67.5	120.0
Effective Green, g (s)	32.9		6.6	32.9		22.2	6.6	51.4		22.2	67.0	120.0
Actuated g/C Ratio	0.27		0.05	0.27		0.18	0.05	0.43		0.18	0.56	1.00
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.5		2.5	2.5		2.5	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	866		80	446		269	89	1389		301	958	1458
v/s Ratio Prot	c0.25		0.00	0.03		0.16	0.05	0.24		c0.17	c0.42	
v/s Ratio Perm												0.59
v/c Ratio	0.93		0.04	0.12		0.89	0.83	0.55		0.93	0.75	0.59
Uniform Delay, d1	42.4		53.7	32.7		47.7	56.1	25.7		48.1	20.1	0.0
Progression Factor	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	15.9		0.2	0.1		27.2	44.8	1.6		33.0	5.3	1.8
Delay (s)	58.3		53.9	32.8		74.9	100.9	27.3		81.1	25.4	1.8
Level of Service	E		D	C		E	F	C		F	C	A
Approach Delay (s)		58.0			68.2			33.7			22.8	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	36.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	78.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

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DESIGN DRIVEN | CLIENT FOCUSED

April 21, 2015

City of Newberg
Attention: Kaaren Hofmann
414 E First Street
Newberg, OR 97132

Re: **Newberg – Dundee Bypass**
Wilsonville Road at Highway 219
Project Number 2130551.03

Dear Ms. Hofmann:

The current Newberg – Dundee Phase 1 plans call for realigning Wilsonville Road opposite the Bypass intersection at Highway 219. In support of this alignment, the City of Newberg modified their Transportation System Plan in December 2013, as ODOT rules require the local TSP show any local street connections to a state highway. The alignment was necessitated based on a determination by ODOT and their consultants that the existing alignment of Wilsonville Road at Springbrook was too close to the Highway 219 intersection for installation of a traffic signal and would be blocked by queues from the signal at Highway 219.

Mackenzie was initially contacted by the Ladd Hill Neighborhood Association (LHNA) in late 2013 to review the analysis and modeling prepared for the Bypass EIS. During the course of our review, we determined the potential impacts of the proposed Wilsonville Road alignment opposite the Bypass were not properly addressed. In lieu of expanding or creating a new transportation model, we considered options for discouraging additional through trips on Wilsonville Road.

The following is a summary of the modeling review, options considered, impacts on local streets in Newberg and the current proposal to not allow through movements between Wilsonville Road and the Phase 1 Bypass.

MODELING

Traffic volume projections were initially provided by ODOT and their consultants in the attached July 1, 2013, memorandum, which included 2016 and 2035 projections. We were surprised to see little if any change to the volume of traffic traveling on Wilsonville Road under the build and no-build conditions. After discussions with the consultants and ODOT modeling staff, it was discovered the model runs do not result in changes to volumes on Wilsonville Road. Simply, the model is not set up to determine if and how much traffic would divert to Wilsonville Road under the proposed alignment. Without appropriate modeling, we cannot determine the volume of traffic that will divert. See Mackenzie's attached December 15, 2014, letter addressing the specific limitations of the modeling.

Without conclusive modeling, it is not appropriate to assume no increase in traffic on Wilsonville Road. In fact, it is intuitive that some drivers will treat Wilsonville Road as an extension of the Bypass and use it to travel to Wilsonville, I-5, and points beyond. For these reasons, the LHNA has pursued a solution to discourage this through traffic.

As shown in Figures 7 and 8 of the July 2013 memorandum, the total through volumes for both directions between WR and the Phase 1 Bypass is 50 vehicles in 2016 and 75 vehicles in 2035. Because the total volume on Wilsonville Road does not change between the build and no-build conditions, it is assumed this is the volume of traffic already on Wilsonville Road that would choose to use the bypass. These volumes are useful in considering the impacts on City of Newberg Streets.

OPTIONS

In order to discourage Bypass traffic from using Wilsonville Road, we reviewed several alignment options other than the current "Option 1" Wilsonville Road connection at Highway 219. In discussions with ODOT staff earlier this year, ODOT addressed the concerns about each alternative alignment option and suggested a configuration with no through movements eastbound from the bypass to Wilsonville Road. The LHNA also requested westbound through movements to the Bypass also be prohibited to ensure travel is discouraged in both directions on Wilsonville Road. A brief summary of each option follows.

Wilsonville Road opposite Phase 1 Bypass "Option 1"

This is the current proposal with the Phase 1 Bypass project and would allow full movements at the intersection with Highway 219. As stated above, the LHNA concern is Wilsonville Road will become an extension of the bypass for drivers travelling to Wilsonville and I-5.

Figure 1 presents volumes from Wilsonville Road and the expected routing on surrounding streets, as taken from Figures 7 and 8 of the July 1, 2013, memo. The through volumes are predicted to be 25 vehicles both eastbound and westbound through the intersection in 2016, increasing to 40 vehicles eastbound and 35 vehicles westbound in 2035. The existing segment of Wilsonville Road just south of Springbrook Road will be terminated in a cul-de-sac, so volumes will be much lower than existing conditions. Otherwise, volumes on Wilsonville Road to the east do not change from the current projections.

Keep Wilsonville Road at Springbrook

We had suggested keeping Wilsonville Road at its current alignment at Springbrook, but ODOT noted concerns about queues from the signal at Highway 219 spilling back inability to install a traffic signal due to spacing concerns. We therefore considered a right in/out configuration. The volumes for this are presented in Figure 2. It is assumed vehicles traveling to the Bypass and Highway 219 to the south would use 2nd Street to reroute. Similarly, vehicles on Springbrook traveling from the north to Wilsonville Road would need to use 2nd Street to access Wilsonville Road. The Fernwood/Renne Road route would also be available as an alternate route. The volume of traffic that would need to travel on 2nd Street just to get to and from Wilsonville Road makes this an unattractive option.

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3 of 4

Realign along Adolf to Highway 219 at Wynooski

The full Bypass plan includes a realignment of Wilsonville Road along the Adolf alignment to the intersection of Highway 219 opposite Wynooski. A traffic signal is assumed. Because of the out of direction travel for the majority of traffic on Wilsonville Road that has destinations in Newberg, the Fernwood/Renne route would be attractive. Figure 3 shows these volume impacts. The cost of this option is significant, as well as potential UGB concerns along the east side of Adolf Road make this option infeasible for the current Phase 1 project.

Wilsonville Road at Springbrook + Wynooski

A combination of the two preceding options was also considered, as it would reduce the reroute on the Fernwood/Renne route. Figure 4 presents this option. This option has the same issues noted above.

Prohibit through movements

ODOT staff suggested keeping the "option 1" alignment but prohibiting through movements. A channelized configuration, as presented in the attached diagram, was developed in coordination with ODOT staff that would physically restrict through movements. Without the channelization or some other median, drivers would still be able to drive through the intersection. Note all other turning movements to and from the Bypass and Wilsonville Road are still allowed. Intersection operation analysis indicates slightly better conditions than the full movement intersection. Figure 5 presents the traffic volumes rerouted to 2nd and Figure 6 with a reroute to the Fernwood/Renne Road route. We anticipated the actual volumes will be a combination of the two, but these show the worst case of all rerouted traffic choosing that particular route.

SUMMARY

The proposed intersection configuration to prohibit through movements has been carefully reviewed with ODOT staff, and as noted above, will have less impact on City of Newberg streets than other options considered, and will operate at acceptable levels. Pedestrian crossings are still provided, but do require the Bypass and Wilsonville Road approaches to operate in "split phase" mode in the event of a pedestrian call. Bicyclists would be able to travel between Wilsonville Road and the Bypass by utilizing the pedestrian crossings. This configuration also meets two of ODOT's criteria for any solution to address through traffic on Wilsonville Road, including keeping within available right-of-way and little to no increase in cost and schedule. We believe the small addition of traffic volumes on City of Newberg streets would not create a significant impact from either a capacity or safety standpoint, and would certainly be less than other options considered. Because of this, we also believe this configuration will not necessitate any changes to the City of Newberg Transportation Plan.

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Our desire is to obtain City of Newberg support for this proposed intersection configuration. We look forward to meeting with City of Newberg staff on Thursday April 23, 2015 to further discuss these options and address any questions you may have.

Sincerely,

Brent Ahrend, PE
Senior Associated | Traffic Engineer

Enclosure(s): July 1, 2013 memorandum
December 15, 2014 letter
Volume figures 1-6
Intersection Plan

c: Jessica Pelz – City of Newberg
Stan Halle, Cole Presthus – Ladd Hill Neighborhood Association
Tim Potter, Kelly Amador, Sonny Chickering – ODOT

eMail Chain: ODOT Staff
Re Wilsonville Rd Impact Analysis

2.09

1 of 5

On May 9, 14, at 7:46 PDT, MCDANIEL-WILSON Christina A <Christina.A.MCDANIEL-WILSON@odot.state.or.us> wrote:

Hi Brent,

Thank you for the summary below. We are working on the model requests and will provide the results as soon as we have them.

Thank you,
Christina McDaniel-Wilson, P.E.
503-986-3501
http://egov.oregon.gov/ODOT/TD/TPAU/

From: Brent Ahrend [mailto:BAhrend@mcknze.com]
Sent: Tuesday, May 06, 2014 5:22 PM
To: MCDANIEL-WILSON Christina A
Cc: DUNN Brian G; AYASH Sam H; Justin Belk
Subject: RE: Wilsonville Rd: Request for Newberg Travel Demand Model

Christi,

I'm providing this summary of our discussion and the modeling ODOT agreed to provide to confirm our understanding.

- The model used for the Phase 1 by-pass does not extend to I-5 or Wilsonville.
- An expansion of the model area would be a significant effort.
- The end points of the model (extents) have fixed volumes that are not impacted by the roadway alignment options in Newberg.
- The Wilsonville Road extent is located just south of Renne Rd and shows 250 vehicles per hour in each direction.
- While online route programs may show Wilsonville Road as a quicker option to get to Wilsonville at I-5 from a location at the proposed intersection with Hwy 219, they do not indicate the volume of traffic that would choose this route.
- ODOT staff has offered to run the no-build and build models with

different volumes at the Wilsonville Road extent, and provide "select link" trip assignments to show the origin and destination of vehicles traveling to and from the east on Wilsonville Road. This will help to identify where these trips are coming from and how many are arriving from locations west of Newberg.

- ODOT staff will need to confirm the model scenario used for the "phase 1 build" condition.

We request the model be run for both build and no build conditions with the existing Wilsonville Road extent volume (500 total), with a total volume of 700 (350 each direction) and with a total volume of 900 (450 each direction). These volumes will be offset by a reduction in volume on the Highway 99W extent. The select link volumes should extend west to just beyond the "fishhook" for comparison.

Please confirm our understanding and your ability to complete the requested modeling, along with the anticipated schedule.

Thanks,

Brent T. Ahrend, PE
Senior Associate | Asst Department Head – Transportation Planning

Architecture · Interiors · Engineering · Planning

P 503.224.9560 W mcknze.com C vcard

RiverEast Center
1515 SE Water Ave, Suite 100
Portland OR 97214

2.09

3 of 5

From: MCDANIEL-WILSON Christina A [mailto:Christina.A.MCDANIEL-WILSON@odot.state.or.us]
Sent: Thursday, May 01, 2014 12:16 PM
To: Brent Ahrend
Cc: DUNN Brian G; POTTER James T * Tim; AYASH Sam H; AMADOR Kelly L; Julia Kuhn (jkuhn@kittelson.com); COLE Terry D
Subject: RE: Wilsonville Rd: Request for Newberg Travel Demand Model

That will work, I will send out a meeting invite with a conference call number.

~Christi

From: Brent Ahrend [mailto:BAhrend@mcknze.com]
Sent: Thursday, May 01, 2014 12:13 PM
To: MCDANIEL-WILSON Christina A
Cc: Brent Ahrend; DUNN Brian G; POTTER James T * Tim; AYASH Sam H; AMADOR Kelly L; Julia Kuhn (jkuhn@kittelson.com); COLE Terry D
Subject: Re: Wilsonville Rd: Request for Newberg Travel Demand Model

Lets plan on 3 in case my earlier meeting goes long.

On May 1, 2014, at 12:09 PM, "MCDANIEL-WILSON Christina A" <Christina.A.MCDANIEL-WILSON@odot.state.or.us> wrote:
Hi Brent,
I'm available today at after 2:30, please let me know what time works best for you.

Thank you,
Christina McDaniel-Wilson, P.E.
503-986-3501
http://egov.oregon.gov/ODOT/TD/TPAU/

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485

From: Brent Ahrend [mailto:BAhrend@mcknze.com]
Sent: Thursday, May 01, 2014 12:01 PM
To: MCDANIEL-WILSON Christina A
Cc: DUNN Brian G; POTTER James T * Tim; AYASH Sam H; AMADOR Kelly L; Julia Kuhn (jkuhn@kittelson.com); COLE Terry D
Subject: RE: Wilsonville Rd: Request for Newberg Travel Demand Model

Christina,

Do you have time to discuss this project either this afternoon (Thursday after 2:30) or Friday afternoon?

Thanks,

Brent T. Ahrend, PE
Senior Associate | Asst Department Head – Transportation Planning

<image001.png>

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P 503.224.9560 W mcknze.com C vcard

RiverEast Center
1515 SE Water Ave, Suite 100
Portland OR 97214

From: MCDANIEL-WILSON Christina A [mailto:Christina.A.MCDANIEL-WILSON@odot.state.or.us]
Sent: Tuesday, April 29, 2014 11:25 AM
To: Brent Ahrend
Cc: DUNN Brian G; POTTER James T * Tim; AYASH Sam H; AMADOR Kelly

L; Julia Kuhn (jkuhn@kittelson.com); COLE Terry D
Subject: Wilsonville Rd: Request for Newberg Travel Demand Model

Good morning Brent,

I've been asked to contact you regarding the "post Phase 1" performance on Wilsonville Rd. It is my understanding that the residents of Ladd Hill have expressed concern that the new connection, at the same light as the Bypass on OR219, will prompt a large influx of new traffic and that a request has been made to provide you with a copy of the Newberg Travel Demand Model to re-run scenario's focusing on the new connection.

Running the Newberg Travel Demand Model requires familiarity with the model structure, inputs, estimation, execution, and interpretation of results. The model is executed through a series of steps requiring both open source and licensed software. In addition, the model uses confidential employment data that requires a signed confidentiality agreement with the Oregon Employment Department. For these reasons, we do not typically provide the full executable model to our local partners as this type of work is conducted in house by trained modeling staff.

We are more than willing to re-run the model to reflect different connections and provide the travel model output to you. Please let me know your availability is so that we can schedule some time for discussion.

Thank you,
Christina McDaniel-Wilson, P.E.,
Senior Transportation Analyst
ODOT, Planning Analysis Unit
555 13th St. NE Ste 2 Salem, Or 97301-4178
Office: 503-986-3501 // Fax: 503-986-4174
http://www.oregon.gov/ODOT/TD/TP/

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MACKENZIE.

DESIGN DRIVEN | CLIENT FOCUSED

May 22, 2015

City of Newberg
Attention: Kaaren Hofmann
414 E First Street
Newberg, OR 97132

Re: **Newberg-Dundee Bypass**
Wilsonville Road at Highway 219 Analysis
Project Number 2130551.03

Dear Ms. Hofmann:

BACKGROUND

ODOT's most current Newberg-Dundee Bypass plans call for the alignment of Wilsonville Road at Highway 219 with through movements between Wilsonville Road and the Phase 1 Bypass ('Option 1'). As we discussed at our meeting on April 23, ODOT and the Ladd Hill Neighborhood Associate (LHNA) had jointly proposed to not allow through movements between Wilsonville Road and the Phase 1 Bypass through channelization and medians at this new intersection. In our letter dated April 21, 2015, Mackenzie presented six alternatives to the Newberg-Dundee Bypass road network, with the intent of not providing a direct connection between the Phase 1 Bypass and Wilsonville Road. These alternatives include the original alignment of Wilsonville Road at Highway 219 with through movements allowed, the proposed no-through movement configuration, and several other roadway configurations.

City staff had indicated a Transportation System Plan amendment would be needed if the impacts of the proposed no-through movement configuration would result in the need for a change in the classification of a City roadway. The criteria for determining the need are (i) intersection performance and (ii) specific standards as measured by the volume-to-capacity ratio (v/c). Initially, City staff noted volumes on the roadways could trigger the need for a reclassification, but we understand the City has no specific roadway volume thresholds identified for each classification. For State highway intersections, the ODOT specific performance threshold is addressed. For each scenario, we provide the total roadway volume for key segments, and intersection capacity analysis results for impacted locations. All scenarios are addressed for purposes of comparing relative impacts. This letter has been prepared to provide more detail on those aspects for both roadway volumes and intersection level of service, sufficient for determining the need for an amendment to the City's Transportation Plan.

CONCLUSIONS

Based on the analysis provided in this letter, we have reached four important conclusions:

1. Each of the alternatives has only a minor level of impact on streets in the City of Newberg. In the 'worst case,' traffic volume would increase by a maximum of 4% (most likely 1-2.5%).

2. Our analysis used volumes presented in a July 1, 2013, memo from William Ciz, with 2016 and 2035 PM peak hour traffic volumes as presented in the Kittelson & Associates (consultants to ODOT) FEIS analysis. Roadway configuration assumptions were taken from Figure 9 of the January 2012 Newberg Dundee Bypass Tier 2 Final Technical Memorandum, and preliminary construction plans provided by ODOT staff in February 2015. Capacity calculations were prepared using Synchro software, although the original FEIS analysis utilized Traffix software. We had requested copies of the original Traffix output from Kittelson and ODOT, but were not provided with them. Despite not having these original calculations, we were able to closely match the lane configurations, volumes and other parameters and followed ODOT's Analysis Procedures Manual.

3. Based on our analysis, the proposed no-through movement configuration of the intersection of the Phase 1 Bypass at Highway 219 opposite Wilsonville Road **does not result** in any of the intersections to fall below standards at the 2016 opening conditions, and at most would add 50 trips to any City street. Based on these findings, there is **no need** for the City of Newberg to amend the City's Transportation System Plan. An amendment was already approved by the Newberg City Council in December 2013 for the purpose of aligning Wilsonville Road opposite the Phase 1 Bypass at Highway 219. At that time, no specific intersection configuration was provided. We note most intersections in the area do not meet standards or are well over capacity in the 2035 analysis scenarios, as presented in the Final EIS for the project. This result does not change with the various scenarios we have reviewed, including the no-through movement design at Wilsonville Road and the Bypass eastern terminus.

4. During the course of our review, we discovered the FEIS had indicated two southbound through lanes were planned on Highway 219 at the intersection with Springbrook Road, but the current plans only show a single through lane. We verbally notified ODOT staff (Director Matt Garrett, Sonny Chickering. and Tim Potter at the May 15th meeting with LHNA representative, Stan Halle) of this discrepancy and that without a second southbound through lane on Highway 219, the intersection will not meet standards at opening of the Phase 1 Bypass in 2016. For purposes of this analysis we have assumed that two lanes would be provided, consistent with the FEIS.

SCENARIOS

Below is a summary of the six different scenarios discussed in our April 21, 2015, letter and evaluated in this analysis.

1. ODOT's Option 1 – This is the current alignment of Wilsonville Road at the Phase 1 Bypass with allowed through movements in both directions. Design hour traffic volumes from the July 2012 Kittelson figures for 2016 and 2035 Phase 1 scenarios were used as reported in this scenario.
2. Springbrook/Wilsonville Road Right-in/Right-out – Wilsonville Road remains aligned at Springbrook Road but limits turning movements to right-in/right-out.
3. Wynooksi Signal – Wilsonville Road is realigned along Adolf Road, proposed to be aligned across from Wynooksi Road. In this scenario, a traffic signal is assumed at the Wynooski Road/Wilsonville Road/Highway 219 intersection.
4. Springbrook + Wynooski – This scenario is a combination of the current Springbrook alignment scenario with proposed right-in/right-out movements and the Wynooski scenario with the proposed realignment along Adolf Road.

5. No-Throughs-2nd Street– This is another version of the current alignment of Wilsonville Road at the Phase 1 Bypass with prohibited through movements using a channelized configuration. In this scenario, through volumes will be rerouted to 2nd Street.

6. No-Throughs-Fernwood – This assumes the same channelized configuration as the "No-Throughs-2nd" scenario, but with through volumes rerouted to Fernwood Road/Renne Road.

Note: the last two Scenarios are viewed as 'worse case.' In reality, we would expect that traffic would use both options, thereby reducing already minor impacts.

TRAFFIC VOLUMES

A memorandum dated July 1, 2013, was provided to Mackenzie by ODOT staff which included figures reporting 2016 and 2035 Phase 1 design hour volumes for the Option 1 Wilsonville Road alignment at Highway 219. The figures, prepared by Kittelson & Associates, Inc. and dated July 2012, were used to reroute Wilsonville Road traffic onto the surrounding network in the different scenarios. The 2013 memorandum is enclosed with this letter.

At the Phase 1 Bypass, Wilsonville Road traffic was estimated to be 25 vehicles eastbound and westbound in 2016, and 40 vehicles eastbound and 35 vehicles westbound in 2035. At Renne Road, Wilsonville Road traffic was estimated to be 170 vehicles eastbound and 230 vehicles westbound in 2016, and 330 vehicles eastbound and 315 vehicles westbound in 2035.

Figures 1A and 7A show the estimated assignment of only Wilsonville Road traffic onto the surrounding network for 2016 and 2035, respectively, based on the Option 1 traffic volumes. The Wilsonville Road volumes from Figures 1A and 7A were rerouted accordingly in the other five scenarios. The Wilsonville Road volumes were subtracted from the design hour traffic volumes in the Kittelson figures to establish peak hour volumes excluding Wilsonville Road traffic. The Wilsonville Road volumes established for the different scenarios were added back to the base peak hour volumes. Since Phase 1 volumes were only reported for Springbrook Road/Fernwood Road, Highway 219/Springbrook Road/Industrial Parkway, and Highway 219/Wilsonville Road/Bypass, traffic on Highway 219 was carried through to the north and south for the remaining study intersections.

Figures 2A through 6A show the Wilsonville Road volumes for the five alternate scenarios in 2016, and Figures 8A through 12A show the Wilsonville Road volumes for 2035. Figures 2B through 6B show total roadway design hour volumes for 2016, and Figures 8B through 12B show the total design hour volumes for 2035.

The tables below show the difference in estimated traffic volumes for 2nd Street, Fernwood Road and Springbrook Road between the different scenarios and ODOT's current 'Option 1.'

2016 VOLUME COMPARISON							
Road	Volume	Option 1	Springbrook R-RO	Wynooski Signal	Springbrook + Wynooski	No Throughs-2nd	No Throughs-Fernwood
2nd Street	Total	55	55	55	55	105	55
	Change from Option 1	0	0	0	0	50	0
Fernwood Road	Total	395	565	565	565	395	420
	Change from Option 1	0	170	170	170	0	25
Springbrook Road	Total	1285	1265	1200	1200	1335	1310
	Change from Option 1	0	-20	-85	-85	50	25

2035 VOLUME COMPARISON							
Road	Volume	Option 1	Springbrook R-RO	Wynooski Signal	Springbrook + Wynooski	No Throughs-2nd	No Throughs-Fernwood
2nd Street	Total	270	270	270	270	345	270
	Change from Option 1	0	0	0	0	75	0
Fernwood Road	Total	945	1230	1230	1230	945	985
	Change from Option 1	0	285	285	285	0	40
Springbrook Road	Total	1600	1515	1430	1430	1675	1635
	Change from Option 1	0	-85	-170	-170	75	35

SYNCHRO ANALYSIS

Synchro 8 was used to model the six scenarios, all of which included the following five key intersections.

1. Highway 219/E 2nd Street
2. Springbrook Road/E Fernwood Road/E 2nd Street
3. Highway 219/Industrial Parkway/ Springbrook Road
4. Highway 219/Wilsonville Road/Bypass
5. Highway 219/Wynooski Road

Volume-to-Capacity (v/c) ratios matched closely to those reported on the Kittelson figures utilizing HCM 2000 methodology. The prior analysis was completed using Traffix, for which the original output sheets were not made

available to Mackenzie. For the three intersections within the study area which had prior v/c ratios reported, the v/c ratios were matched within a 10% margin of error.

The lane configurations within the Synchro model were based on the OR18: Newberg-Dundee Bypass (Phase 1G) (Springbrook Road) plans dated 12/11/2014. Due to differences between the proposed lane configurations at Highway 219/Industrial Parkway/Springbrook Road during the time of the study and now, the lane configuration used in the 2012 analysis was assumed, which includes an extra southbound through lane. An ideal saturated flow rate of 1750 vehicles per hour per lane was used per the ODOT Analysis Procedures Manual for small urban areas. All signals were coded to simulate actuated-coordinated signals with a cycle length of 120 seconds. Right turns-on-red were assumed at all signalized intersections.

The following tables show the performance standard for each intersection, as well as the v/c ratios from the 2016 and 2035 analyses for each scenario. *Note that any v/c ratio that exceeds the stated Performance Standard is highlighted in **bold red**.*

2016 INTERSECTION ANALYSIS – V/C							
Intersection	Performance Standard	Scenario					
		Option 1	Springbrook R-RO	Wynooski Signal	Springbrook + Wynooski	No Through-2nd	No Through-Fernwood
Highway 99/Springbrook Road	0.75	**0.97**	**0.97**	**0.97**	**0.97**	**0.97**	**0.97**
Highway 219/Bypass	0.65	0.65	0.65	**0.68**	0.64	0.65	0.65
Highway 219/Springbrook Road	0.80	0.69	0.66	0.62	0.63	0.73	0.70
Springbrook Road/E Fernwood Road	0.90	0.77	0.81	0.85	0.73	0.80	0.80
Highway 219/E 2nd Street	0.80	0.38	0.61	0.61	0.61	0.39	0.38
Highway 219/Wynooski Road	0.80	0.26	0.26	0.57	0.56	0.26	0.26

2035 INTERSECTION ANALYSIS – V/C							
Intersection	Performance Standard	Scenario					
		Option 1	Springbrook RI-RO	Wynooski Signal	Springbrook + Wynooski	No Throughs-2nd	No Throughs-Fernwood
Highway 99/Springbrook Road	0.75	1.35	1.35	1.35	1.35	1.35	1.35
Highway 219/Bypass	0.65	0.88	0.84	0.90	0.83	0.87	0.86
Highway 219/Springbrook Road	0.80	0.90	0.88	0.79	0.85	0.96	0.92
Springbrook Road/E Fernwood Road	0.90	1.46	1.79	1.95	1.67	1.55	1.54
Highway 219/E 2nd Street	0.80	0.74	1.04	1.04	1.04	0.78	0.74
Highway 219/Wynooski Road	0.80	0.65	0.65	0.84	0.84	0.65	0.65

RESULTS

In the 2016 analysis, all of the scenarios show adequate v/c ratios for the five key intersections, with the exception of the Wynooski signal scenario, which exceeds the standard at the Highway 219/Bypass intersection.

The proposed no-through movement scenario shows some intersections operating at up to a 4% higher v/c ratio than in ODOT's 'Option 1,' but still operate at acceptable levels in 2016.

Two intersections are anticipated to be over capacity in 2035 under ODOT's 'Option 1' and no-through movement scenarios, specifically the Springbrook intersections with Highway 99W and Fernwood Road. For the other scenarios, three intersections would be over capacity.

The Highway 219/Springbrook Road intersection was analyzed by modeling, specifically: one shared through-right, one through, and one exclusive left turn lane on the southbound approach, yielding a v/c ratio of 0.69. This configuration is consistent with the original plans for the Highway 219/Springbrook Road intersection in the Newberg Dundee Bypass Tier 2 Final Technical Memorandum. In the Tier 2 memorandum, this intersection resulted in a 0.62 v/c ratio under the Phase 1 – Improved scenario. The latest Newberg-Dundee Bypass (Phase 1G) ODOT plans call for one shared through-right and one exclusive left turn lane on the southbound approach. This configuration results in a v/c ratio of 0.92, which exceeds the performance standard of 0.80. It is suggested that ODOT change their plans to match the original Tier 2 plans for the Highway 219/Springbrook Road intersection in order to meet the capacity standard of 0.80. It is also recommended ODOT change their plan at this intersection to the previous Tier 2 configuration since this has already been approved.

Based on this analysis, it is clear the proposed no-through movement scenario has little impact on the area roads and intersection operation. No intersections will exceed performance standards at opening of the Phase 1 Bypass in 2016. Further, this scenario has less impact than other scenarios (that also have significant added costs), such as the Wynooski signal options with an alignment along Adolf Road. We request the City of Newberg make a finding that no additional

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amendment to the City's Transportation System Plan is needed for the ODOT/LHNA proposed no-through movement scenario at the intersection of the Phase 1 Bypass at Highway 219 opposite Wilsonville Road. Furthermore, we request that the Newberg City staff go on record as supporting the no-through movement design to mitigate potentially significant impacts on the 12 miles of Wilsonville Road, the City of Wilsonville, four schools, active farms, and I-5 Exit 283.

If you should have any comments or concerns, please do not hesitate to contact us.

Sincerely,

Brent Ahrend, PE
Senior Associate | Traffic Engineer

Enclosure(s): July 1 20123 Memorandum
Volume Figures
Synchro output sheets
Tier 2 Final Technical Document (excerpts)
OR18 Newberg-Dundee Bypass (Phase 1G) plans

c: Jessica Pelz, Doug Rux – City of Newberg
Stan Halle, Cole Presthus – Ladd Hill Neighborhood Association
Tim Potter, Kelly Amador, Sonny Chickering – ODOT
Ralph Bloemers – Crag Law Center
Janet Jones – Mackenzie

3.01

WILSONVILLE ROAD CONNECTIONS***					
County	**Side of Wilsonville Rd**	**Single Driveways**	**Big Driveways****	**Named Side Streets**	Totals:
CLACKAMAS*	North	16	9	12	37
	South (River)	29	7	10	46
Subtotal		45	16	22	83
YAMHILL	North	38	10	5	53
	South (River)	59	12	3	74
Subtotal		97	22	8	127
TOTAL:		142	38	30	210

*Notes: * = From Kinsman to Springbrook Rds*
*** = Two or more Residences, or Agricultural Access*
**** = Based on the average of two complete drivebys*

DATA dent from Rick Nys, Clackamas Co Road Engineer on a map with markers having data connected. January 14, 2015 and from Bill Gille and Chris Holland Yamhill Co Road Engineer Dept.2/16/2015

year;		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	subtotal /10 yr	2005	2006	2007	2008	2009	2010	2011	2012	2013	sub total 9 yr.	TOTAL in CO			in Clackamas Co
CLACKAMAS CO																										
number of crashes		9	9	10	14	7	4	4	11	7	8	83	11	3	5	9	4	8	3	8	13	64	147			
# injuries	min 1995-2005	3	6	6	5	2	3	1	5	4	6	41	6	2	5	5	3	6	1	2	12	42	83		56	% injuries in crashes
# fatalities				1					1			2														
																						0				
1 vehicle involved														2	4	8	4	4	1	6	5	34	34			
2 vehiles involved														1		1		4	2	2	7	17	17			
3 vehicles involved															1							1	1			
																						0				
# with alcohol involved					2									0	1	0	1	0	0	0	2	4	4			
# with speed involved		4	7	6	10	4	1	0	6	2	4	44	8	2	4	9	4	3	2	3	4	39	83		56	% with speed involved
																						0				
Ladd Hill intersection																		1	1	2	2	6	6			
Edminston Intersection																		3			3	6	6			
Graham's Ferry intersection																1										
Intersection unspecified		1	3		1	1			2	3	1	12	0													
Total # at any intersection												12										12	24		16	% at intersections (Clackamas Co)
YAMHILL CO																										
number of crashes								19	23			42					19					19	61			
TOTAL Number of crashes Both counties								23	34								23									
proportion in Yamhill Co								0.826	0.68								0.83									

Attachment 5

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Traffic Counts on Wilsonville Rd. (unless otherwise noted)							
	1999	2002	2005	2007	2008	2009	2011
Clackamas Co: (Ave. Daily Traffic)							
North of Ladd Hill Rd		2600	3000		2600		2985
East of Graham's Ferry Rd.		3100	3550		2550		2940
Yamhill Co.							
Springbrook Rd: *Between 99W and Fernwood*	*8549*			*6434*	*9188*		
South of Fernwood on Wilsonville Rd.	3106					5283	
West of Adolf Rd (new location after realignment)						2768	
Between Adolf and Parrish Rds.						2822	
Between Parrish and Renne Rds.	2704				2847	2635	
Just south of Renne Rd.	2004					2190	
Midway between Earlwood and Renne Rds.	2395					2273	
West of Earlwood	2414					2501	
Between Earlwood Rd. and County line	2517					2508	

Attachment 5

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Request for vehicle collision information for Wilsonville Rd from Interstate-5 to the county line for 10 years. Dispatch incidents were queried and filtered by those that most probably involved traffic collisions, excluding those where no collision was found or a collision or traffic hazard could not be confirmed.

Date is YYYYMMDD, time is 24 hour clock, location is from dispatch record some street names are abbreviated, some intersections are approximate.
Call type is what was initially reported, not what actually occurred.
INCIDENT refers to a report number - this report is not necessarily a collision investigation -it may be a custody, road hazard, tow report, or information.

DATE	TIME_INPUT	LOCATION	CALL_TYPE	INCIDENT
2005				
20050107	2355	SW WILSONVILLE RD && SW BOONES ,WIL	DUII	D10500874
20050115	1023	SW WILSONVILLE RD && SW GRAHAMS,WIL	TRAF ACCIDENT, NO INJ	
20050115	2327	SW WILSONVILLE RD && SW EDMINST,WIL	TRAF ACCIDENT, UNK INJ	
20050115	2219	SW WILSONVILLE RD && SW EDMINST,WIL	TRAF ACCIDENT, NO INJ	
20050204	1613	SW WILSONVILLE RD && SW BOONES ,WIL	TRAF ACCIDENT, NO INJ	D10504529
20050213	1611	SW MONTEBELLO DR && SW WILSONVI,WIL	TRAF ACCIDENT, NO INJ	D10505875
20050222	1932	16091 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, UNK INJ	D10507175
20050420	1014	SW WILSONVILLE RD && SW BOONES ,WIL	TRAF ACCIDENT, NO INJ	
20050510	835	SW WILSONVILLE RD && SW GRAHAMS,WIL	TRAF ACCIDENT, UNK INJ	
20050517	1720	SW BOONES FERRY RD && SW WILSON,WIL	TRAF ACCIDENT, NO INJ	D10518189
20050518	1503	SW MONTEBELLO DR && SW WILSONVI,WIL	TRAF ACCIDENT, NO INJ	D10518282
20050521	1525	SW WILSONVILLE RD && SW BOONES ,WIL	TRAF ACCIDENT, NO INJ	
20050602	1522	SW KINSMAN RD && SW WILSONVILLE RD	TRAF ACCIDENT, UNK INJ	D10520252
20050603	1818	SW WILSONVILLE RD && MONTEBELLO DR	TRAF ACCIDENT, INJURY	D10520400
20050624	1536	SW WILSONVIL RD && SW BOONES FER RD	TRAF ACCIDENT, NO INJ	
20050626	1517	SW WILSONVILL RD && SW LADD HILL RD	TRAF ACCIDENT, NO INJ	
20050628	845	SW WILSONVI RD && SW WILLAMETT WY E	TRAF ACCIDENT, UNK INJ	D10523436
20050707	844	SW WILSONVIL RD && SW MONTEBELLO DR	TRAF ACCIDENT, NO INJ	D10524524
20050714	2213	SW WILSONVIL RD && SW INDUSTRIAL WY	TRAF ACCIDENT, NO INJ	D10525519
20050718	1047	SW WILSONVILL RD && SW DEER PARK RD	TRAF ACCIDENT, UNK INJ	
20050722	716	SW WILSON RD && SW WILLAMET WY E #X	TRAF ACCIDENT, NO INJ	
20050722	728	SW WILSONV RD && SW EDMINSTON RD #X	TRAF ACCIDENT, NO INJ	
20050819	2055	SW WILSONVILL RD && SW LADD HILL RD	DUII	D10530221
20050821	1833	SW BOONES FE RD && SW WILSONVILL RD	TRAF ACCIDENT, NO INJ	
20050923	1830	SW WILSONVIL RD && SW GRAHAMS FE RD	TRAF ACCIDENT, INJURY	D10535332
20050930	1102	14160 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, UNK INJ	D10536363
20051030	1050	SW WILSONVIL RD && SW BOONES FER RD	TRAF ACCIDENT, NO INJ	D10540257
20051031	2204	15905 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, UNK INJ	D10540416
20051103	1621	SW EDMINSTON RD && SW WILSONVILL RD	TRAF ACCIDENT, UNK INJ	
20051104	455	16100 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	

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DATE	TIME_INPUT	LOCATION	CALL_TYPE	INCIDENT
20051109	553	SW WILSONVILLE RD && SW BROWN RD	DUII	D10541641
20051112	1202	SW WILSONVILL RD && SW EDMINSTON RD	TRAF ACCIDENT, NO INJ	
20051206	2123	SW WILSONVILLE RD && SW BELL RD,SHE	DUII	D10545220
20051210	1305	SW WILSONVIL RD && SW MONTEBELLO DR	TRAF ACCIDENT, UNK INJ	
20051224	901	SW BELL RD && SW WILSONVILLE RD,SHE	TRAF ACCIDENT, NO INJ	
2006				
20060116	1535	SW WILSONVILL RD && SW EDMINSTON RD	TRAF ACCIDENT, NO INJ	
20060123	2305	SW WILSONVILL RD && SW EDMINSTON RD	TRAF ACCIDENT, INJURY	D10602907
20060220	2127	16091 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, INJURY	D10606706
20060309	627	SW WILSONVIL RD && SW GRAHAMS FE RD	TRAF ACCIDENT, NO INJ	
20060317	1958	SW WILSONVIL RD && SW BOONES FER RD	TRAF ACCIDENT, NO INJ	D10609848
20060320	1818	16720 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, UNK INJ	D10610164
20060409	2247	SW WILSONVIL RD && SW MONTEBELLO DR	TRAF ACCIDENT, NO INJ	D10612589
20060409	1939	SW WILSONVIL RD && SW MONTEBELLO DR	TRAF ACCIDENT, INJURY	D10612571
20060420	1642	SW BROWN RD && SW WILSONVILLE RD	TRAF ACCIDENT, NO INJ	
20060427	1821	SW MONTEBELL DR && SW WILSONVILL RD	TRAF ACCIDENT, NO INJ	
20060430	1446	SW WILSONVILL RD && SW EDMINSTON RD	TRAF ACCIDENT, UNK INJ	D10614967
20060513	1600	SW BOONES FE RD && SW WILSONVILL RD	TRAF ACCIDENT, NO INJ	
20060524	1017	SW WILSONVILL RD && SW LADD HILL RD	TRAF ACCIDENT, NO INJ	
20060608	607	SW BELL RD && SW WILSONVILLE RD,SHE	TRAF ACCIDENT, UNK INJ	
20060616	1611	15135 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, UNK INJ	D10621034
20060717	1808	SW WILSONVILLE RD && SW KINSMAN RD	TRAF ACCIDENT, UNK INJ	D10624766
20060722	1516	SW WILSONVILLE RD && SW BELL RD,SHE	TRAF ACCIDENT, INJURY	D10625428
20060729	1554	SW BROWN RD && SW WILSONVILLE RD	TRAF ACCIDENT, NO INJ	
20060802	1331	SW EDMINSTON RD && SW WILSONVILL RD	TRAF ACCIDENT, NO INJ	D10626884
20060802	2033	SW WILSONVILL RD && SW EDMINSTON RD	TRAF ACCIDENT, NO INJ	D10626912
20060809	2048	SW WILSONVILLE RD && SW BELL RD,SHE	TRAF ACCIDENT, UNK INJ	
20060816	1117	16091 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	
20060831	1445	SW WILSONVIL RD && SW BOONES FER RD	TRAF ACCIDENT, NO INJ	
20060906	1347	SW WILSONVILLE RD && SW BELL RD,SHE	TRAF ACCIDENT, NO INJ	
20060907	1709	SW WILSONVILLE RD && SW KINSMAN RD	TRAF ACCIDENT, NO INJ	D10631415
20060914	1313	14160 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	
20060926	804	SW WILSONVILLE RD && SW BROWN RD	TRAF ACCIDENT, INJURY	D10633658
20061014	2141	SW WILSONVILL RD && SW LADD HILL RD	DUII	D10636022
20061018	2347	SW WILSONVILL RD && SW LADD HILL RD	DUII	D10636481
20061105	933	16091 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, UNK INJ	D10638422
20061119	1444	SW WILSONVILL RD && SW LADD HILL RD	TRAF ACCIDENT, UNK INJ	
20061127	1338	SW WILSONVIL RD && SW BOONES FER RD	TRAF ACCIDENT, NO INJ	D10641182
2007				
20070104	1431	SW WILSONVIL RD && SW BOONES FER RD	TRAF ACCIDENT, NO INJ	D10700583
20070104	319	SW WILSONVILLE RD && SW BELL,SHE #X	TRAF ACCIDENT, UNK INJ	D10700508
20070111	1655	9460 SW WILSONVILLE RD	TRAF ACCIDENT, NO INJ	
20070122	913	SW WILSONVILLE RD && SW BELL RD,SHE	TRAF ACCIDENT, UNK INJ	D10702642

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DATE	TIME_INPUT	LOCATION	CALL_TYPE	INCIDENT
20070131	2026	SW BELL RD && SW WILSONVILLE RD,SHE	TRAF ACCIDENT, UNK INJ	
20070403	1548	9165 SW WILSONVILLE RD	TRAF ACCIDENT, UNK INJ	
20070410	1657	SW GRAHAMS F RD && SW WILSONVILL RD	TRAF ACCIDENT, UNK INJ	
20070415	1750	SW WILSONVIL RD && SW BOONES FER RD	TRAF ACCIDENT, NO INJ	
20070417	2318	9500 SW WILSONVILLE RD	TRAF ACCIDENT, INJURY	
20070502	717	SW WILSONVILL RD && SW LADD HILL RD	TRAF ACCIDENT, NO INJ	D10715462
20070530	1737	SW WILSONVIL RD && SW MONTEBELLO DR	TRAF ACCIDENT, NO INJ	
20070607	1558	SW WILSONVILLE RD && SW KINSMAN RD	TRAF ACCIDENT, UNK INJ	
20070622	408	SW WILSONVIL RD && SW GRAHAMS FE RD	DUII	D10722111
20070625	1843	SW WILSONVIL RD && SW MONTEBELLO DR	TRAF ACCIDENT, UNK INJ	
20070628	1512	SW WILSONVILLE RD && SW BELL RD,WIL	TRAF ACCIDENT, NO INJ	
20070701	1451	12422 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, INJURY	D10723398
20070701	1106	SW WILSONV RD && SW EDMINSTON RD #X	TRAF ACCIDENT, INJURY	
20070704	1622	SW MONTEBELL DR && SW WILSONVILL RD	TRAF ACCIDENT, NO INJ	D10723798
20070706	2201	SW WILSONVIL RD && SW GRAHAMS FE RD	TRAF ACCIDENT, NO INJ	
20070711	1427	9165 SW WILSONVILLE RD	TRAF ACCIDENT, NO INJ	D10724831
20070714	1354	SW WILSONVILLE RD && SW BELL RD,WIL	TRAF ACCIDENT, INJURY	D10725196
20070715	828	SW WILSONVIL RD && SW BOONES FER RD	TRAF ACCIDENT, NO INJ	
20070719	1352	SW BROWN RD && SW WILSONVILLE RD	TRAF ACCIDENT, UNK INJ	D10725820
20070720	1545	9165 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	D10725983
20070720	1647	9415 SW WILSONVILLE RD	TRAF ACCIDENT, NO INJ	
20070727	551	9165 SW WILSONVILLE RD	TRAF ACCIDENT, INJURY	
20070731	1834	SW WILSONVILLE RD && SW BROWN RD	TRAF ACCIDENT, INJURY	D10727342
20070831	957	SW BOONES FE RD && SW WILSONVILL RD	TRAF ACCIDENT, NO INJ	D10731049
20070914	1719	SW BOONES FE RD && SW WILSONVILL RD	TRAF ACCIDENT, NO INJ	
20070915	1731	14441 SW WILSONVILLE RD	TRAF ACCIDENT, NO INJ	
20071001	500	SW BOONES F RD && SW WILSONVILL RD	TRAF ACCIDENT, UNK INJ	
20071002	539	SW BOONES F RD && SW WILSONVILL RD	TRAF ACCIDENT, NO INJ	
20071009	1254	9815 SW WILSONVILLE RD,WIL #MAIN	TRAF ACCIDENT, UNK INJ	
20071010	1159	SW BELL RD && SW WILSONVILLE,WIL #X	TRAF ACCIDENT, NO INJ	D10735867
20071016	1119	SW WILSON RD && SW EDMINSTON RD #X	TRAF ACCIDENT, INJURY	D10736532
20071020	1557	SW WILSONVI RD && SW MARSH HAWK LN	TRAF ACCIDENT, NO INJ	
20071031	1040	SW WILSONVI RD && SW BOONES FER RD	TRAF ACCIDENT, UNK INJ	
20071106	1534	SW KINSMAN RD && SW WILSONVILLE RD	TRAF ACCIDENT, UNK INJ	
20071118	1332	9815 SW WILSONVILLE RD	TRAF ACCIDENT, NO INJ	
20071124	336	SW WILSONVI RD && SW MONTEBELLO DR	DUII	D10741231
20071130	1524	8255 WILSONVILLE RD	TRAF ACCIDENT, NO INJ	
20071205	2115	12370 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, INJURY	D10742671
20071218	1649	9815 SW WILSONVILLE RD	TRAF ACCIDENT, NO INJ	D10744108
2008				
20080105	936	9815 SW WILSONVILLE RD	TRAF ACCIDENT, NO INJ	
20080108	1540	SW BOONES F RD && SW WILSONVILL RD	TRAF ACCIDENT, NO INJ	
20080109	815	15700 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, INJURY	D10801036
20080114	718	SW WILSONVI RD && SW MONTEBELLO DR	TRAF ACCIDENT, NO INJ	
20080115	644	SW WILSONVIL RD && SW LADD HILL RD	TRAF ACCIDENT, NO INJ	

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DATE	TIME_INPUT	LOCATION	CALL_TYPE	INCIDENT
20080126	1727	9165 SW WILSONVILLE RD	TRAF ACCIDENT, NO INJ	
20080201	552	SW WILSONVIL RD && SW LADD HILL RD	TRAF ACCIDENT, NO INJ	
20080212	936	SW WILSONVILL RD && SW GRAHAMS F RD	TRAF ACCIDENT, UNK INJ	D10805325
20080220	1213	9450 SW WILSONVILLE RD	TRAF ACCIDENT, NO INJ	
20080311	1626	9165 SW WILSONVILLE RD	TRAF ACCIDENT, NO INJ	
20080321	1138	SW BOONES FER RD && SW WILSONVIL RD	TRAF ACCIDENT, UNK INJ	
20080405	2010	SW WILSONVILLE RD && SW BELL RD,WIL	TRAF ACCIDENT, INJURY	D10811929
20080407	1732	9165 SW WILSONVILLE RD	TRAF ACCIDENT, NO INJ	D10812175
20080411	819	SW WILSONVILL RD && SW GRAHAMS F RD	TRAF ACCIDENT, UNK INJ	
20080421	1955	SW WILSONVILL RD && SW GRAHAMS F RD	TRAF ACCIDENT, NO INJ	
20080428	1705	SW BOONES FER RD && SW WILSONVIL RD	TRAF ACCIDENT, NO INJ	D10814640
20080430	1857	SW WILSONVILLE RD && SW KINSMAN RD	DUII	D10814870
20080508	1740	SW WILSONVILL RD && SW MONTEBELL DR	TRAF ACCIDENT, INJURY	D10815736
20080509	718	SW OAKLEAF LP && SW WILSONVILLE RD	TRAF ACCIDENT, INJURY	D10815770
20080522	702	SW BOONES FER RD && SW WILSONVIL RD	TRAF ACCIDENT, NO INJ	
20080526	926	SW WILSONVILL RD && SW EDMINSTON RD	TRAF ACCIDENT, NO INJ	
20080605	1748	14441 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	
20080609	2341	SW WILSONVIL RD && SW WILLAMET WY W	TRAF ACCIDENT, NO INJ	
20080612	720	9415 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, UNK INJ	
20080703	1846	9815 SW WILSONVILLE RD,WIL	DUII	D10822541
20080801	1046	14441 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	
20080814	1854	SW WILSONVILLE RD && SW KINSMAN RD	TRAF ACCIDENT, INJURY	D10827606
20080816	1436	SW WILSONVILLE RD && SW BELL RD,WIL	TRAF ACCIDENT, UNK INJ	
20080829	1710	SW WILSONVILL RD && SW MARSH HAW LN	TRAF ACCIDENT, NO INJ	D10829611
20080909	1200	SW WILSONVILL RD && SW LADD HILL RD	TRAF ACCIDENT, UNK INJ	
20080914	1305	SW WILSONVILL RD && SW BOONES FE RD	TRAF ACCIDENT, UNK INJ	D10831368
20081018	1154	9490 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	D10835539
20081103	1752	SW BOONES FER RD && SW WILSONVIL RD	DUII	D10837301
20081107	2309	SW WILSONVILL RD && SW BOONES FE RD	DUII	D10837874
20081120	1421	16100 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	D10839161
20081126	1143	SW MONTEBELLO DR && SW WILSONVIL RD	TRAF ACCIDENT, NO INJ	
20081129	1919	16091 SW WILSONVILLE RD	TRAF ACCIDENT, NO INJ	
20081212	2239	SW WILSONVILLE RD && SW BELL RD,WIL	TRAF ACCIDENT, NO INJ	D10841672
2009				
20090109	1832	10041 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	
20090125	259	SW WILSONVILL RD && SW MARSH HAW LN	TRAF ACCIDENT, INJURY	D10902722
20090131	659	SW WILSONVILL RD && SW MONTEBELL DR	TRAF ACCIDENT, INJURY	D10903473
20090131	2154	SW BELL RD && SW WILSONVILLE RD #X	TRAF ACCIDENT, UNK INJ	D10903528
20090209	1451	SW BOONES FER RD && SW WILSONVIL RD	TRAF ACCIDENT, NO INJ	
20090216	2319	17100-BLK SW WILSONVILLE RD,WIL	TRAF ACCIDENT, UNK INJ	
20090225	1232	SW WILSONVILL RD && SW BOONES FE RD	TRAF ACCIDENT, INJURY	D10906245
20090305	1345	14201 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, INJURY	D10907092
20090308	1803	SW BOONES FER RD && SW WILSONVIL RD	TRAF ACCIDENT, INJURY	D10907350
20090316	1647	SW BELL RD && SW WILSONVILLE RD,WIL	TRAF ACCIDENT, INJURY	D10908306
20090321	1606	SW WILSONVILL RD && SW MARSH HAW LN	TRAF ACCIDENT, UNK INJ	D10908845

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DATE	TIME_INPUT	LOCATION	CALL_TYPE	INCIDENT
20090324	1415	9165 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	
20090401	2049	SW BELL RD && SW WILSONVILLE RD,WIL	TRAF ACCIDENT, UNK INJ	
20090523	1044	10970 SW WILSONVILLE RD,WIL #72	TRAF ACCIDENT, NO INJ	
20090619	600	SW WILSONVILLE RD && SW BROWN RD	TRAF ACCIDENT, UNK INJ	D10918871
20090707	2153	SW WILSONVILLE RD && SW KINSMAN RD	TRAF ACCIDENT, NO INJ	D10920949
20090716	1607	9815 SW WILSONVILLE RD,WIL	DUII	D10921928
20090813	2224	SW WILSONVILL RD && SW RIVERVIEW LN	TRAF ACCIDENT, NO INJ	
20090823	1139	SW WILSONVILLE RD && SW BROWN RD	TRAF ACCIDENT, NO INJ	
20090828	1119	SW BOONES FER RD && SW WILSONVIL RD	TRAF ACCIDENT, NO INJ	
20090830	1354	SW WILSONVILLE RD && SW KINSMAN RD	TRAF ACCIDENT, INJURY	D10926780
20090924	1354	SW WILSONVILLE RD && SW BROWN RD	TRAF ACCIDENT, INJURY	D10929578
20091013	1209	SW WILSONVILL RD && SW BOONES FE RD	TRAF ACCIDENT, NO INJ	
20091013	2257	SW WILSONVI RD && SW LADD HIL RD #X	TRAF ACCIDENT, NO INJ	
20091017	1452	SW WILSONVILL RD && SW BOONES FE RD	TRAF ACCIDENT, NO INJ	
20091106	1715	SW WILSONVI RD && SW EDMINSTO RD #X	TRAF ACCIDENT, UNK INJ	
20091108	1931	SW WILSONVILL RD && SW EDMINSTON RD	TRAF ACCIDENT, NO INJ	
20091203	2344	SW WILSONVILL RD && SW EDMINSTON RD	TRAF ACCIDENT, UNK INJ	D10936947
20091212	1345	SW WILSONVILLE RD && GEER RD,NEW	DUII	D10937833
20091228	146	SW WILSONVILLE RD && SW KINSMAN RD	TRAF ACCIDENT, NO INJ	
2010				
20100104	1017	SW WILSONVILLE RD && SW KINSMAN RD	TRAF ACCIDENT, NO INJ	D11000351
20100121	1647	9165 SW WILSONVILLE RD,WIL #X	DUII	D11002239
20100210	1835	SW KINSMAN RD && SW WILSONVILLE RD	DUII	D11004589
20100212	612	SW WILSONVILLE RD && SW KINSMAN RD	TRAF ACCIDENT, NO INJ	
20100329	1653	SW WILSONVILLE RD && SW BELL RD,WIL	TRAF ACCIDENT, NO INJ	
20100331	739	SW WILSONVILL RD && SW BOONES FE RD	TRAF ACCIDENT, NO INJ	
20100331	1944	SW WILSONVILL RD && SW BOONES FE RD	TRAF ACCIDENT, NO INJ	
20100408	2114	SW WILSONVILL RD && SW LADD HILL RD	TRAF ACCIDENT, NO INJ	D11010729
20100510	926	SW WILSONVILL RD && SW EDMINSTON RD	TRAF ACCIDENT, NO INJ	
20100526	1554	SW WILSONVILL RD && SW EDMINSTON RD	TRAF ACCIDENT, UNK INJ	D11016029
20100528	1138	SW WILSONVILLE RD && SW BELL RD,WIL	TRAF ACCIDENT, UNK INJ	D11016198
20100601	1715	SW BOONES FER RD && SW WILSONVIL RD	TRAF ACCIDENT, UNK INJ	D11016701
20100605	2302	9165 SW WILSONVILLE RD,WIL	DUII	D11017157
20100615	756	SW WILSONVILLE RD && SW BROWN RD	TRAF ACCIDENT, INJURY	D11018359
20100625	1909	10041 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, UNK INJ	D11019592
20100702	1759	SW WILSONVILLE RD && SW BELL RD,WIL	TRAF ACCIDENT, INJURY	D11020291
20100717	2220	16880 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	D11021995
20100805	2213	SW WILSONVILL RD && SW EDMINSTON RD	TRAF ACCIDENT, UNK INJ	D11024067
20100830	1302	9490 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	
20100921	920	SW WILSONVILL RD && SW MONTEBELL DR	TRAF ACCIDENT, NO INJ	
20101209	1428	11495 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	D11037884
20101226	1449	SW WILSONVILL RD && SW LADD HILL RD	TRAF ACCIDENT, INJURY	
2011				
20110126	1834	9165 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	D11102764

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DATE	TIME_INPUT	LOCATION	CALL_TYPE	INCIDENT
20110127	1842	SW WILSONVILLE RD && SW BROWN RD	TRAF ACCIDENT, NO INJ	
20110211	16	9450 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	D11104373
20110222	1509	SW WILSONVI RD && SW BOONES F RD #X	TRAF ACCIDENT, NO INJ	D11105570
20110224	703	SW WILSONVILLE RD && SW BELL RD,WIL	TRAF ACCIDENT, NO INJ	
20110325	1816	SW WILSONVILLE RD && SW BELL RD,WIL	TRAF ACCIDENT, NO INJ	D11108971
20110402	1331	SW BOONES FER RD && SW WILSONVIL RD	TRAF ACCIDENT, NO INJ	
20110429	959	SW WILSONVILL RD && SW MONTEBELL DR	TRAF ACCIDENT, NO INJ	
20110508	1126	9490 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	
20110513	1403	SW GRAHAMS FE RD && SW WILSONVIL RD	TRAF ACCIDENT, INJURY	D11114270
20110525	1940	16100 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	
20110606	2216	SW WILSONVILL RD && SW DEER PARK RD	TRAF ACCIDENT, UNK INJ	D11116836
20110705	848	11495 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	
20110723	2051	9490 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, INJURY	D11122113
20110907	1800	SW WILSONVILL RD && SW LADD HILL RD	TRAF ACCIDENT, INJURY	D11127060
20110909	1755	9165 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	
20111001	2002	SW WILSONVIL RD && SW GRAHAMS RD #X	TRAF ACCIDENT, NO INJ	
20111001	1653	SW EDMINSTON RD && SW WILSONVILL RD	TRAF ACCIDENT, NO INJ	
20111031	1537	9165 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, INJURY	D11132750
20111031	1328	SW BELL RD && SW WILSONVILLE RD #X	TRAF ACCIDENT, NO INJ	
20111115	1420	11495 SW WILSONVILLE RD,WIL	DUII	D11134361
20111121	1807	SW WILSONVI RD && SW EDMINSTO RD #X	TRAF ACCIDENT, NO INJ	
20111130	1708	9815 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	
20111202	1756	SW WILSONVILL RD && SW BOONES FE RD	TRAF ACCIDENT, INJURY	D11136047
20111213	1728	11825 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	D11137235
2012				
20120106	2157	SW WILSONVILLE RD && SW ORCHARD DR	TRAF ACCIDENT, NO INJ	D11200727
20120114	1319	SW WILSONVILL RD && SW BOONES FE RD	TRAF ACCIDENT, NO INJ	
20120125	1417	SW WILSONVILL RD && SW LADD HILL RD	TRAF ACCIDENT, UNK INJ	D11202715
20120130	1718	SW WILSONVILL RD && SW INDUSTRIA WY	TRAF ACCIDENT, NO INJ	D11203258
20120309	1016	SW WILSONVILLE RD && SW BROWN RD	TRAF ACCIDENT, UNK INJ	D11207537
20120312	1741	9165 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, INJURY	
20120331	748	SW WILSONVILLE RD && SW BELL RD #X	TRAF ACCIDENT, NO INJ	
20120402	802	SW WILSONVI RD && SW MONTEBEL DR #X	TRAF ACCIDENT, UNK INJ	
20120414	1419	9450 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	
20120420	2309	SW BOONES FER RD && SW WILSONVIL RD	TRAF ACCIDENT, NO INJ	
20120512	1129	SW WILSONVILL RD && SW BOONES FE RD	TRAF ACCIDENT, INJURY	
20120530	2149	12340 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	
20120618	1749	SW BOONES FER RD && SW WILSONVIL RD	TRAF ACCIDENT, NO INJ	
20120623	732	9500-BLK SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	D11218706
20120710	1519	SW WILSONVILL RD && SW LADD HILL RD	TRAF ACCIDENT, NO INJ	D11220558
20120717	939	SW WILSONVILL RD && SW BOONES FE RD	TRAF ACCIDENT, NO INJ	D11221240
20120823	1807	9165 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	D11225317
20120902	1132	9165 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	
20120912	1626	SW WILSONVILL RD && SW EDMINSTON RD	TRAF ACCIDENT, INJURY	D11227400
20120914	1547	SW WILSONVILL RD && SW BOONES FE RD	TRAF ACCIDENT, INJURY	D11227622

3.04
7 of 9

DATE	TIME_INPUT	LOCATION	CALL_TYPE	INCIDENT
20120921	1712	SW BOONES FER RD && SW WILSONVIL RD	TRAF ACCIDENT, NO INJ	
20121001	1615	SW WILSONVILLE RD && SW BROWN RD	TRAF ACCIDENT, NO INJ	
20121005	1626	SW GRAHAMS FE RD && SW WILSONVIL RD	TRAF ACCIDENT, INJURY	D11229874
20121013	916	16091 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, INJURY	D11230815
20121015	56	16100 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, INJURY	D11230914
20121015	1738	SW WILSONVILL RD && SW RIVERVIEW LN	TRAF ACCIDENT, NO INJ	
20121104	1116	SW BOONES FER RD && SW WILSONVIL RD	TRAF ACCIDENT, UNK INJ	D11232923
20121106	1750	SW BELL RD && SW WILSONVILLE RD,WIL	TRAF ACCIDENT, UNK INJ	D11233191
20121126	1904	SW WILSONVILLE RD && SW KINSMAN RD	TRAF ACCIDENT, NO INJ	D11235155
20121129	1714	9815 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	
20121130	1103	SW WILSONVILL RD && SW GRAHAMS F RD	TRAF ACCIDENT, NO INJ	D11235558
20121204	1010	SW WILSONVILLE RD && SW BROWN RD	TRAF ACCIDENT, UNK INJ	D11235918
20121228	851	14441 SW WILSONVILLE RD,WIL #X	TRAF ACCIDENT, NO INJ	
2013				
20130102	337	15700 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	D11300081
20130109	1616	SW BROWN RD && SW WILSONVILLE RD	TRAF ACCIDENT, NO INJ	
20130124	1132	SW WILSONVILL RD && SW BOONES FE RD	TRAF ACCIDENT, INJURY	D11302575
20130309	925	9475 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	D11307271
20130311	653	SW WILSONVILL RD && SW MARSH HAW LN	TRAF ACCIDENT, NO INJ	
20130317	154	SW WILSONVILL RD && SW GRAHAMS F RD	TRAF ACCIDENT, NO INJ	D11308188
20130317	1513	SW WILSONVILL RD && SW BOONES FE RD	TRAF ACCIDENT, UNK INJ	D11308232
20130321	1532	9450 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	D11308761
20130327	2230	9815 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	
20130406	2016	14441 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	D11310510
20130409	826	SW WILSONVILL RD && SW MONTEBELL DR	TRAF ACCIDENT, NO INJ	D11310796
20130411	4	SW WILSONVILL RD && SW MONTEBELL DR	TRAF ACCIDENT, NO INJ	D11311022
20130414	718	37100 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, INJURY	D11311319
20130416	1545	SW WILSONVILL RD && SW INDUSTRIA WY	TRAF ACCIDENT, UNK INJ	D11311633
20130417	1505	9450 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	D11311719
20130508	1722	SW WILSONVILLE RD && SW KINSMAN RD	TRAF ACCIDENT, INJURY	D11314040
20130517	1242	9165 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	
20130519	628	SW WILSONVILL RD && SW MARSH HAW LN	TRAF ACCIDENT, UNK INJ	
20130520	1158	SW WILSONVILL RD && SW INDUSTRIA WY	TRAF ACCIDENT, UNK INJ	D11315342
20130520	1206	SW WILSONVILLE RD && SW KINSMAN RD	TRAF ACCIDENT, NO INJ	
20130528	1754	11055 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	
20130611	741	SW GUISS WY && SW WILSONVILLE RD	TRAF ACCIDENT, INJURY	D11317753
20130611	1342	11055 SW WILSONVILLE RD,WIL #X	TRAF ACCIDENT, INJURY	D11317793
20130613	1813	SW WILSONVILLE RD && SW KINSMAN RD	TRAF ACCIDENT, INJURY	D11318081
20130616	1523	9590-BLK SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	D11318303
20130623	2313	SW BOONES FER RD && SW WILSONVIL RD	DUII	D11319134
20130623	1016	14441 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	D11319084
20130630	822	SW WILSONVILL RD && SW LADD HILL RD	TRAF ACCIDENT, UNK INJ	
20130701	144	SW WILSONVILL RD && SW EDMINSTON RD	TRAF ACCIDENT, NO INJ	D11319924
20130706	1221	SW WILSONVILL RD && SW EDMINSTON RD	TRAF ACCIDENT, NO INJ	D11320563
20130712	2219	14900-BLK SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	D11321299

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DATE	TIME_INPUT	LOCATION	CALL_TYPE	INCIDENT
20130712	2049	SW WILSONVILLE RD && SW BROWN RD	TRAF ACCIDENT, UNK INJ	D11321286
20130801	1823	16150 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	D11323324
20130817	32	SW WILSONVILLE RD && SW ORCHARD DR	TRAF ACCIDENT, NO INJ	D11325030
20130828	1807	9490 SW WILSONVILLE RD,WIL #X	TRAF ACCIDENT, NO INJ	D11326251
20130829	2035	SW LADD HILL RD && SW WILSONVILL RD	TRAF ACCIDENT, INJURY	
20130903	1743	SW KINSMAN RD && SW WILSONVILLE RD	TRAF ACCIDENT, INJURY	D11326823
20130917	1133	SW WILSONVILL RD && SW MONTEBELL DR	TRAF ACCIDENT, UNK INJ	D11328404
20130923	1746	SW WILSONVILL RD && SW EDMINSTON RD	TRAF ACCIDENT, UNK INJ	D11329139
20131001	1546	SW WILSONVILLE RD && SW KINSMAN RD	TRAF ACCIDENT, NO INJ	D11330101
20131003	845	SW BELL RD && SW WILSONVILLE RD #X	TRAF ACCIDENT, NO INJ	D11330315
20131018	2323	SW WILSONVI RD && SW LADD HIL RD #X	TRAF ACCIDENT, UNK INJ	D11332178
20131024	703	SW BELL RD && SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	
20131101	1829	SW WILSONVILLE RD && SW BROWN RD	TRAF ACCIDENT, INJURY	D11333532
20131106	1645	SW WILSONVILL RD && SW BOONES FE RD	TRAF ACCIDENT, NO INJ	
20131117	132	SW BOONES FER RD && SW WILSONVIL RD	TRAF ACCIDENT, NO INJ	D11334950
20131130	1809	SW WILSONVI RD && SW EDMINSTO RD #X	TRAF ACCIDENT, NO INJ	
20131213	1521	SW BOONES FER RD && SW WILSONVIL RD	TRAF ACCIDENT, NO INJ	D11337479
20131215	2028	SW WILSONVILL RD && SW BOONES FE RD	TRAF ACCIDENT, INJURY	
20131226	2330	15408 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	
2014				
20140119	150	SW WILSONVILL RD && SW EDMINSTON RD	TRAF ACCIDENT, NO INJ	
20140128	1755	SW WILSONVILLE RD && SW OAKLEAF LP	TRAF ACCIDENT, NO INJ	D11402666
20140205	1553	SW WILSONVILL RD && SW RIVERVIEW LN	TRAF ACCIDENT, NO INJ	
20140205	1654	16091 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, INJURY	
20140218	748	SW WILSONVILL RD && SW RIVERVIEW LN	TRAF ACCIDENT, NO INJ	
20140414	1319	9815 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, INJURY	D11409999
20140416	1723	SW WILSONVILL RD && SW INDUSTRIA WY	TRAF ACCIDENT, UNK INJ	D11410315
20140417	1834	9815 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	
20140421	2348	SW WILSONVILLE RD && SW BELL RD #X	TRAF ACCIDENT, NO INJ	D11410846
20140524	1530	16000-BLK SW WILSONVILLE RD,WIL	TRAF ACCIDENT, INJURY	D11414049
20140527	1849	SW KINSMAN RD && SW WILSONVILLE RD	TRAF ACCIDENT, NO INJ	D11414332
20140608	1002	9450 SW WILSONVILLE RD,WIL #X	TRAF ACCIDENT, NO INJ	
20140623	1353	SW WILSONVILL RD && SW BOONES FE RD	TRAF ACCIDENT, NO INJ	
20140624	2255	16100-BLK SW WILSONVILLE RD,WIL	TRAF ACCIDENT, INJURY	D11417093
20140707	2223	SW WILSONVILL RD && SW RIVERVIEW LN	TRAF ACCIDENT, NO INJ	D11418395
20140711	547	16100 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, INJURY	D11418766
20140711	2232	SW BOONES FER RD && SW WILSONVIL RD	TRAF ACCIDENT, NO INJ	
20140716	1033	9165 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	D11419296
20140721	1633	10041 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	
20140724	1649	SW BOONES FER RD && SW WILSONVIL RD	TRAF ACCIDENT, UNK INJ	D11420109
20140904	1104	9490 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, INJURY	D11424199
20140905	1607	SW KINSMAN RD && SW WILSONVILLE RD	TRAF ACCIDENT, UNK INJ	D11424379
20140913	1320	16100-BLK SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	
20140915	1533	SW BOONES FER RD && SW WILSONVIL RD	TRAF ACCIDENT, INJURY	D11425285
20140916	1440	SW LADD HILL RD && SW WILSONVILL RD	TRAF ACCIDENT, NO INJ	D11425397

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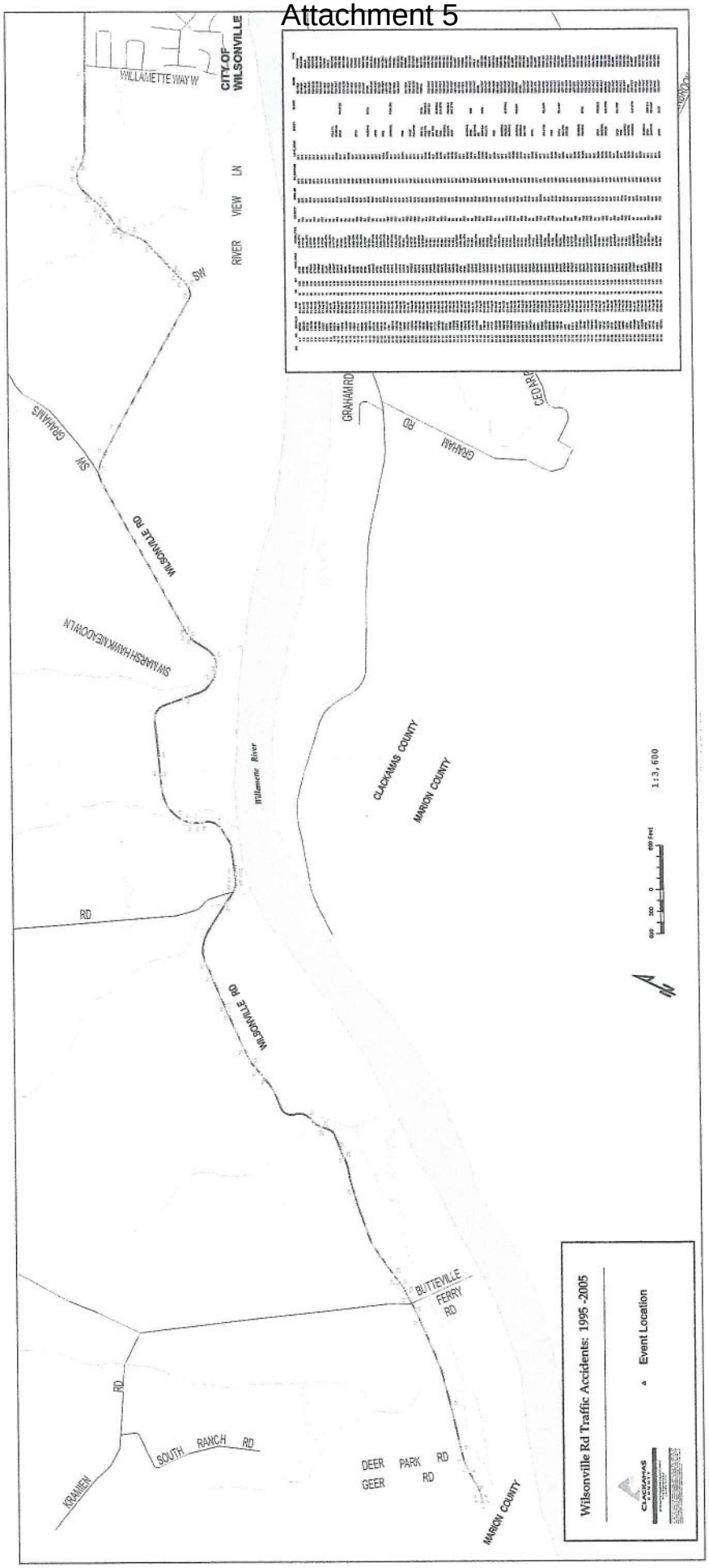
999

DATE	TIME_INPUT	LOCATION	CALL_TYPE	INCIDENT
20140925	1712	SW BOONES FER RD && SW WILSONVIL RD	TRAF ACCIDENT, NO INJ	D11426389
20140925	1618	SW WILSONVILL RD && SW BOONES FE RD	TRAF ACCIDENT, NO INJ	
20140930	1940	14221 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, INJURY	D11426847
20141007	500	SW WILSONVI RD && SW RIVERVI LN #EO	TRAF ACCIDENT, NO INJ	
20141014	606	9165 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	
20141028	703	14441 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	
20141029	1211	SW BOONES FER RD && SW WILSONVIL RD	TRAF ACCIDENT, NO INJ	
20141030	1832	SW WILSONVILL RD && SW BOONES FE RD	TRAF ACCIDENT, UNK INJ	
20141101	1754	SW BROWN RD && SW WILSONVILLE RD	TRAF ACCIDENT, UNK INJ	D11430071
20141110	1920	SW WILSONVILLE RD && SW BELL RD,WIL	TRAF ACCIDENT, UNK INJ	
20141119	1410	9165 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	D11431678
20141120	1140	SW GRAHAMS FE RD && SW WILSONVIL RD	TRAF ACCIDENT, NO INJ	
20141124	1843	SW WILSONVILL RD && SW EDMINSTON RD	TRAF ACCIDENT, UNK INJ	D11432194
20141201	2138	SW WILSONVIL RD && SW WILLAMET WY W	TRAF ACCIDENT, UNK INJ	D11432799
20141206	34	9815 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	D11433235
20141211	523	35501 NE WILSONVILLE RD,NEW	TRAF ACCIDENT, INJURY	
20141214	1909	15900 SW WILSONVILLE RD,WIL	TRAF ACCIDENT, NO INJ	D11434025
20141217	1022	SW WILSONVILL RD && SW RIVERVIEW LN	TRAF ACCIDENT, UNK INJ	

Data represented in this report reflects dispatch records only. What agency or law enforcement officer responded is not indicated nor implied. Dispatch activities handled by Oregon State Police or Yamhill County are not represented here.

CCSO Patrol Crime Analyst R. Karman

3.05


CITY OF WILSONVILLE
WILLAMETTE WAY W
RIVER VIEW LN
SW
GRAHAM RD
GRAHAM RD
CEDAR
SW GRAHAMS
WILSONVILLE RD
SW MARSHHAWK MEADOWLN
Willamette River
CLACKAMAS COUNTY
MARION COUNTY
1:3,600
RD
WILSONVILLE RD
BUTTEVILLE FERRY RD
RD
SOUTH RANCH RD
KRAMIEN
DEER PARK RD
GEER RD
MARION COUNTY
Wilsonville Rd Traffic Accidents: 1995 -2005
Event Location

4.01

CLACKAMAS COUNTY

BOARD OF COUNTY COMMISSIONERS

PUBLIC SERVICES BUILDING
2051 KAEN ROAD | OREGON CITY, OR 97045

February 4, 2015

Matthew Garrett, Director
Oregon Department of Transportation
355 Capitol St., NE, MS 11
Salem, OR 97301

Dear Mr. Garrett:

Well over a year ago, I was made aware, by the Ladd Hill Neighborhood Association (LHNA), of possible problems on Wilsonville Road arising from the alignment of the Newberg-Dundee Bypass.

I have been a resident of Wilsonville for over 40 years. Because I am a real estate broker, I have driven the road from Wilsonville to Newberg well over a thousand. My experience is that unsuspecting drivers find Wilsonville Road difficult because of S-curves, travel speeds, traffic, and inclement weather, which all affect traveling surface conditions and safety.

I understand now that ODOT is re-studying the traffic numbers that may come to Wilsonville Road because of the bypass alignment. I trust that the concerns of the Ladd Hill Neighborhood Association will be adequately addressed soon.

If the parties cannot come to consensus on the issues, I will bring the matter to the attention of the Clackamas County Board of County Commissioners for review. Please contact me about my knowledge of Wilsonville Road at any time.

Sincerely,

John Ludlow, Chair
CLACKAMAS COUNTY BOARD OF COMMISSIONERS

cc: Philip Ditzler, FHWA Division Administrator
Stan Halle, Director LHNA
Mike Bezner, Clackamas County Traffic Engineer
Yamhill County Board of Commissioners

P. 503.655.8581 | F. 503.742.5919 | WWW.CLACKAMAS.US

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1 of 1

BOARD OF COUNTY COMMISSIONERS
STAN PRIMOZICH • ALLEN SPRINGER • MARY STARRETT
535 NE Fifth Street • McMinnville, OR 97128-4523
(503) 434-7501 • Fax (503) 434-7553
TTY (800) 735-2900 • www.co.yamhill.or.us

March 6, 2015

Matthew Garrett, Director, ODOT
Phillip Ditzler, Regional Manager, FHWA

Re: Newberg-Dundee Bypass – impact on Wilsonville Road

Dear Director Garrett and Mr. Ditzler:

The Yamhill County Board of Commissioners would like to express its support of the Ladd Hill Neighborhood Association's (LHNA) efforts in raising concerns with ODOT and the FHWA regarding the Newberg-Dundee Bypass and the specific impact on Wilsonville Rd. We see this as a critical part of Phase I's final construction contract. We are pleased to see both agencies working together with the community and local jurisdictions regarding these issues.

We recently learned from the LHNA, that ODOT and the community have identified specific turning, median, and other changes that, if implemented, could greatly reduce the traffic that would have flowed directly between the Bypass and Wilsonville Rd. We applaud the willingness of ODOT and LHNA to work together to address both parties' concerns. As you are aware the Commissioners have been concerned about the increased traffic volume and congestion adversely impacting public safety ever since the Phase I relocation of the western end of Wilsonville Rd was announced.

Currently, the proposed Phase I relocation would have allowed Wilsonville Rd to become an extension of the Bypass. By eliminating the possibility of thru-traffic between the Bypass and Wilsonville Rd., ODOT can effectively resolve this. As you are aware, this scenic country road has over 200 private driveways, working farms, and side streets. Funneling commuter traffic and Portland Metro area through- traffic onto this narrow, winding, accident prone road is counteractive to the publicly stated purpose of the Bypass – *"improving public safety"*.

As Yamhill County's representatives of the taxpayers most affected, we are encouraged by this recent progress and urge you to continue on this pathway. We also support the LHNA and other interested parties in pursuing efforts to ensure that satisfactory changes are made. Simply stated, we do not support Wilsonville Rd becoming the unofficial extension of the Newberg-Dundee Bypass for traffic to and from I-5 and I-205. In the future we look to ODOT and the FHWA to follow through and work towards permanently resolving this issue with a positive outcome.

Sincerely,

Commissioner Allen Springer
Chair

Commissioner Mary Starrett
Vice-Chair

Commissioner Stan Primozich

cc: Ladd Hill Neighborhood Association (LHNA)
Cole Presthus, Co-President
Stan Halle, Director

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City of
WILSONVILLE
OREGON

29799 SW Town Center Loop East
Wilsonville, OR 97070
Phone 503-682-0411
Fax 503-682-1015
TDD 503-682-0843
Web www.ci.wilsonville.or.us

March 11, 2015

Director Matt Garrett, matthew.garrett@odot.state.or.us
Oregon Department of Transportation ("ODOT")
355 Capitol Street NE, MS 11
Salem, OR 97301-3871

Mr. Phillip Ditzler, phillip.ditzler@dot.gov
Division Administrator, Oregon Division
Federal Highway Administration ("FHWA")
530 Center Street NE, Suite 420
Salem, OR 97301

Re: Newberg-Dundee Bypass – Impact on Wilsonville Road

Dear Director Garrett and Regional Manager Ditzler:

The City of Wilsonville has learned from the Ladd Hill Neighborhood Association (LHNA) that ODOT has identified specific turning, median, signal, signage, and other changes that, if implemented, could greatly reduce the potential traffic impacts on Wilsonville Road from the current Newberg-Dundee Phase 1 Bypass configuration. We understand that these changes can be accomplished with little additional cost and without delay in the overall Phase 1 schedule.

The City of Wilsonville shares the LHNA's concerns about increased traffic on Wilsonville Road resulting from relocating it to intersect with OR Hwy 219 in Newberg directly across from the bypass. Our Wilsonville staff has been communicating with the LHNA and the ODOT project team over the past 20 months in an effort to better understand and address potential impacts to Wilsonville Road from the Phase 1 bypass project.

Our greatest concern is safety on this very narrow and winding road that already sees frequent crashes and problematic truck movements (even though through-trucks are prohibited). It is important to note that primary and middle school zones exist near where this rural road enters the City of Wilsonville. Impacts from sudden speed changes and increased traffic volumes need to be carefully considered at this location, too.

We support the LHNA efforts to raise their concerns about this issue with ODOT and FHWA. We strongly urge your two agencies to continue to work with the LHNA, the City of Wilsonville, and other stakeholders to share information and receive feedback about potential changes to the current plan. We want to be involved in understanding proposed changes to the plans, how our concerns will be resolved, and how we can be assured satisfactory solutions are included in the third and final Phase 1 construction contract.

Our goal is to make sure that Wilsonville Road does not become an extension of the new bypass and used as a shortcut to I-5 and I-205 from OR 219. This Clackamas County-designated scenic country road accesses working farms, over 200 private driveways, tourism and recreational attractions, the Willamette River greenway, and multiple local street connections. Funneling commuter traffic and regional through traffic onto Wilsonville Road is incompatible with its local access function and design that is characterized by frequent tight curves and limited site distance.

The City of Wilsonville opposes adding bypass-induced traffic impacts to our community as well as to the I-5/Wilsonville Road interchange for which investments have been carefully made to achieve its current capacity. Such an outcome would greatly conflict with the purpose of the Newberg-Dundee bypass.

We appreciate your attention and support on this matter. If you have any questions, please contact Nancy Kraushaar, PE, City of Wilsonville Community Development Director, at kraushaar@ci.wilsonville.or.us or 503.570.1562.

Sincerely,

Tim Knapp

Tim Knapp, Mayor

cc: Ladd Hill Neighborhood Association (LHNA): Cole Presthus, Co-President cole56presthus@gmail.com & Stan Halle, Director change1@mindpsring.com

4.04

West Linn – Wilsonville Schools

April 1, 2015

Director Matt Garrett , matthew.l.garrett@odot.state.or.us
Oregon Department of Transportation
355 Capitol Street NE, MS 11
Salem, OR 97301-3871

Mr. Phillip Ditzler, phillip.ditzler@dot.gov
Division Administrator, Oregon Division
Federal Highway Administration
530 Center Street NE, Suite 420
Salem, OR 97301

RE: Newberg-Dundee Bypass: Impact on Wilsonville Road

Dear Director Garrett and Regional Manager Ditzler:

The City of Wilsonville and School District Patrons have brought to our attention the possibility that ODOT has identified various design options for the new Newberg-Dundee Phase I Bypass intersection with Highway 219 in Newberg that could greatly reduce the potential traffic impacts on Wilsonville Road as it enters the City of Wilsonville on the west.

As you may be aware, West Linn-Wilsonville School District operates two public schools located at the west edge of Wilsonville with direct access from Wilsonville Road. These two schools serve nearly 1500 students and staff on a daily basis. While beginning and ending times of the two schools are staggered, congestion on Wilsonville Road at these key times is experienced. Additionally, many students walk and bike to school using Wilsonville Road.

The School District's greatest concern is for the safety of our students. We appreciate your willingness to review the design options for Wilsonville Road at Highway 219 and minimize traffic impact entering west Wilsonville at the location of Boones Ferry Primary School and Inza Wood Middle School on Wilsonville Road. Thank-you for your attention and support of this important issue.

Sincerely,

DEPARTMENT OF OPERATIONS

Tim K. Woodley, Director woodlevt@wlwv.k12.or.us

CC: Ladd Hill Neighborhood Association: Stan Halle, Director change1@mindspring.com
Nancy Kraushaar, PE, Community Dev. Director, City of Wilsonville kraushaar@ci.wilsonville.or.us
Dr. William Rhoades, Supt., West Linn-Wilsonville School District rhoadesw@wlwv.k12.or.us

Department of Operations
503-673-7995 Fax 503-638-9143 • www.wlwv.k12.or.us
2755 SW Borland Road, Tualatin, Oregon 97062

4.05
1 of 2

CLACKAMAS COUNTY

BOARD OF COUNTY COMMISSIONERS

PUBLIC SERVICES BUILDING
2051 KAEN ROAD | OREGON CITY, OR 97045

April 6, 2015

Director Matt Garrett
Oregon Department of Transportation
355 Capitol St. NE, MS 11
Salem, OR 97301-3871
matthew.l.garrett@odot.state.or.us

Mr. Phillip Ditzler
Division Administrator, Oregon Division
Federal Highway Administration
530 Center St. NE, Suite 420
Salem, OR 97301
phillip.ditzler@dot.gov

Re: Newberg-Dundee Bypass – Impact on Wilsonville Road

Dear Director Garrett and Regional Manager Ditzler,

As the first county in Oregon to adopt a Transportation Safety Action Plan, Clackamas County is committed to doing all we can to ensure a safe transportation system for the people that live in, do business in and visit our County. To that end, we urge ODOT to implement the specific turning, median, signal, signage and other changes that it has identified that would greatly reduce the potential traffic impacts on Wilsonville Road from the current Newberg-Dundee Phase 1 Bypass configuration.

Along with the City of Wilsonville, the West Linn-Wilsonville Schools and area community organizations, our greatest concern is for the safety of travelers on Wilsonville Road. This narrow, winding roadway, carries nearly 3,000 vehicles per day.

Wilsonville Road connects to hundreds of local road users, including farms, residences, recreational attractions and many cross streets. The County has helped reduce the number of crashes on Wilsonville Road in recent years by working closely with residents, and improving signage and pavement markings. However, the roadway has substantial geometric limitations and there is no doubt that any traffic increases will also result in increases in crashes.

In addition, while trucks are limited on Wilsonville Road, some actually do not physically fit through the tight curves, and a direct connection from the new bypass would ultimately result in more truck operators following their GPS devices and using this route. Adding commuter and

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regional through traffic to this mix would increase congestion and, more importantly, safety risks for all travelers through the area.

We appreciate your consideration of our request and willingness to consider options that will benefit current and future travelers. Please direct any questions you might have to Mike Bezner, Assistant Director of the Department of Transportation and Development, at 503-742-4651 or mikebez@clackamas.us.

Sincerely,

John Ludlow, Chair
Clackamas County Board of Commissioners

cc: Stan Halle, LHNA Director
JL:mb

4.06

CLACKAMAS COUNTY

BOARD OF COUNTY COMMISSIONERS

PUBLIC SERVICES BUILDING
2051 KAEN ROAD | OREGON CITY, OR 97045

July 7, 2015

Mr. Matt Garrett
Director, Oregon Department of Transportation
355 Capitol St. NE, MS11
Salem, OR 97301-3871

Re: Newberg-Dundee Bypass – Impact on Wilsonville Road

Dear Mr. Garrett,

As referenced in my February 4, 2015 and April 6, 2015 letters to you, I am concerned that there is not yet a solution to the traffic safety concerns of the Newberg-Dundee Bypass construction terminating directly across from Wilsonville Road.

Wilsonville has been my home for 43 years. I have driven the subject route literally thousands of times and am very familiar with just how dangerous this road can be. This narrow, winding roadway already carries nearly 3,000 vehicles per day, and the additional capacity it will see accommodating the termination of the Newberg-Dundee Bypass will increase the safety risks of the Newberg and Wilsonville communities, and those in between. This is very concerning to me and my fellow citizens and colleagues around the region.

Not all that long ago, Wilsonville imposed a building moratorium due to traffic concerns. Since then, amazing growth and development has occurred, but at the expense of Wilsonville taxpayers bearing the brunt of traffic improvements. If ODOT is going to dramatically increase the vehicle trips through a community, it is only fair for ODOT to accommodate the resulting transportation safety needs of the affected community.

It is my understanding there is the potential for litigation between the ODOT and the affected communities and jurisdictions over this matter. I am pleased to learn about productive discussions between ODOT and the Ladd Hill Neighborhood Association (LHNA) that may result in the development of a "no-through design" at the intersection of the eastern terminus of the Bypass, but still allowing emergency vehicles to travel in either direction.

I urge ODOT to move forward with the "no-through design" referred to above. While I recognize the City of Newberg's concerns about traffic diversion affecting their city, it is important to remember that the City of Newberg will be the direct beneficiary of the Bypass and have the resources to meet the demands of increased diversionary traffic.

I look forward to your reply. Thank you.

Sincerely,

John Ludlow, Chair
Clackamas County Board of Commissioners

cc: Senator Kim Thatcher
Representative John Davis

4.07

BOARD OF COUNTY COMMISSIONERS
STAN PRIMOZICH • ALLEN SPRINGER • MARY STARRETT
535 NE Fifth Street • McMinnville, OR 97128-4523
(503) 434-7501 • Fax (503) 434-7553
TTY (800) 735-2900 • www.co.yamhill.or.us

July 16, 2015

Matthew Garrett, Director, ODOT
Phillip Ditzler, Regional Manager, FHWA

Re: Newberg-Dundee Bypass – impact on Wilsonville Road

Dear Director Garrett and Mr. Ditzler:

On March 6, 2015 the Yamhill County Board of Commissioners sent you a letter to express its support of the Ladd Hill Neighborhood Association's (LHNA) concerns with ODOT and the FHWA regarding the impact of the Newberg-Dundee Bypass on Wilsonville Rd. We were pleased to learn that ODOT and LHNA have jointly developed a solution that would largely mitigate the problems, aptly named the 'no-thru design', and encouraged all parties to ensure that this mitigating design was implemented.

We learned that, as a result of ODOT putting in too much information in the TSP Amendment to Ordinance No. 2013-2766 passed by the Newberg City Council on December 2, 2013 and attested by Mayor Andrews on December 5, 2013, Newberg now has effective veto power over the configuration geometry at that intersection. With other changes now needed to align Newberg's TSP with the bid package being prepared by ODOT, it has become clear that a new Amendment to the TSP is required.

As one of the most affected counties when Phase 1 of the Bypass opens in 2017, we see this new Amendment as an opportunity to both correct alignments and to directly address the Wilsonville Road impact issue. Therefore, we urge ODOT and the FHWA to: (a) remove Exhibit "B" from the Ordinance, thereby giving ODOT the ability to determine the final configuration geometry for that intersection; and (b) to expeditiously complete the 'no-thru design' as the final design so that it can be an integral part of the bid package scheduled to be released early December 2015. We understand that this change is very minor regarding the overall preparations for the bid package. However, it is a very important change needed to stop the eastbound and westbound flow of traffic to/from Wilsonville Road.

Given the size of the Bypass investment and the direct benefit to Newberg, we strongly urge ODOT to balance these benefits with the needs and public safety concerns of the surrounding jurisdictions. Please assure us that the two steps stated above will be completed without further delay.

Sincerely,

Allen Springer
Commissioner, Chair

Mary Starrett
Commissioner, Vice-Chair

Stan Primozich
Commissioner

4.08
1 of 2

WILSONVILLE

July 20, 2015

Matt Garrett, Director
Oregon Department of Transportation
355 Capitol Street NE
Salem, OR 97301

Phillip Ditzler, Region Manager
Federal Highway Administration
530 Center Street NE, Suite 420
Salem, OR 97301

Re: Newberg-Dundee Bypass, Wilsonville Road / OR219 Intersection

Dear Mr. Garrett and Mr. Ditzler:

It has been called to my attention that progress has hit a snag in addressing concerns about re-establishing the Wilsonville Road connection to OR219 at its future intersection with the Newberg-Dundee Bypass ("bypass"). I previously conveyed the City of Wilsonville's (and others) concerns about this matter in my March 11, 2015 letter to you. As you know, Wilsonville Road east of Newberg is a highly constrained rural road with tight curves, limited site distance, and existing safety issues.

We were pleased to know that ODOT had developed a "No Through" intersection alternative using channelization and islands that would not allow a direct crossing between the bypass and Wilsonville Road. We felt confident that this design would greatly reduce the potential for increased traffic on Wilsonville Road coming to and from the bypass. We have also been informed that ODOT may be reviewing other alternatives to address our concerns.

We are now troubled having learned that the City of Newberg's adopted TSP includes specific intersection details for the Phase 1 bypass that do not include a "No Through" alternative or other design solution that would address our concerns. In addition, I understand that the TSP does not reflect ODOT's current Phase 1 design drawings for lane configurations on OR219. Newberg and ODOT staff have reported that a Newberg TSP amendment is needed for ODOT to move forward not only with current plans, but also current plans revised to include a "No Through" (or other) design solution for the intersection.

It is crucial to our community that steps are taken to assure Wilsonville Road does not become an extension of the bypass. A design package that does not include a direct crossing across OR219 is essential. You have our complete support for a Newberg TSP amendment. We offer

assistance in any role the City of Wilsonville City Council or staff can play in this process. The serious impacts of allowing additional traffic between the bypass and Wilsonville Road must be mitigated.

Thank you for your immediate attention to this matter.

Sincerely,

Tim Knapp

Mayor Tim Knapp
City of Wilsonville

Copy via email:
Cole Presthus, LHNA Co-President, cole56presthus@gmail.com
Stan Halle, LHNA Director, change1@mindspring.com
John Davis, State Representative, District 26, Rep.JohnDavis@state.or.us

4.09
1 of 2

CLACKAMAS COUNTY

BOARD OF COUNTY COMMISSIONERS
PUBLIC SERVICES BUILDING
2051 KAEN ROAD | OREGON CITY, OR 97045

October 14, 2015

Matthew Garrett
Director
Oregon Department of Transportation
355 Capitol Street, NE MS11
Salem, OR 97301-3871

Re: Wilsonville Road Mitigation

Dear Mr. Garrett:

Thank you for meeting with Clackamas County along with Representative Davis, Mayor Andrews, Mayor Knapp, Tom Potter and staff regarding the Newberg-Dundee Bypass and potential impacts to Wilsonville Road on October 7th at your office. I appreciated the candid discussion of the issues and the different perspectives represented at the table.

Mayor Knapp provided a good assessment of the questions surrounding the number of trips that may use Wilsonville Road as a "question of fact", which we do not have at this time. When I spoke with my staff in the Engineering Division, they also made note that they had never seen an analysis completed that examined the impacts of the Phase I project including the direct connection of the new bypass road with Wilsonville Road. Collectively, we need to be sure that this connection will function from an operations and safety perspective for all users and all of the agencies impacted.

After listening to all sides of the conversation at our meeting and discussing this matter with my fellow Commissioners, Clackamas County would propose the following approach:

1. ODOT analyzes the traffic impact of the Phase 1 configuration on the following area roadways including options proposed by City of Newberg:
    a. Newberg roads
    b. Clackamas County roads
    c. Yamhill County roads
    d. Marion County roads
    e. City of Wilsonville Roads
    f. I-5/Wilsonville Road interchange

P. 503.655.8581 | F. 503.742.5919 | WWW.CLACKAMAS.US

2. ODOT identifies safety and/or operational issues that could be a concern, and focuses on low cost but effective mitigation concurrent with Phase 1 construction.

3. ODOT funds and completes a Road Safety Audit on Wilsonville Road between Highway 219 and I-5 including Yamhill and Clackamas Counties, City of Wilsonville and City of Newberg.

My hope is that this approach can get all parties focused on the facts of this issue and ODOT can continue to demonstrate their commitment to safety and making sure communities are not unduly impacted by road projects. And, perhaps of most importance, we can keep the Newberg-Dundee Bypass moving forward towards completion. I know I look forward to less congestion on my drives to Lincoln City. Thank you for your leadership and I look forward to your response.

Sincerely,

John Ludlow, Chair
On behalf of the Clackamas County Board of Commissioners

JL:jm

cc: Rep. John Davis
Mayor Tim Knapp, Wilsonville
Mayor Bob Andrews, Newberg
Yamhill County Board of Commissioners

4, 11

From: **Mary Starrett** starrettm@co.yamhill.or.us
Subject: **Wilsonville Road "No-Through" Design**
Date: **October 16, 2015 at 12:45 PDT**
To: **Matt Garrett** Matthew.L.GARRETT@odot.state.or.us, rep.johndavis@state.or.us
Cc: **Karmen Fore** karmen.fore@oregon.gov, **Stan Primozich** primozichs@co.yamhill.or.us, **Stan Halle (HHCG)** change1@mindspring.com, NGMLP@aol.com

Director Garrett:
As you know, we have already alerted you to our concerns about the "through-through" lane configuration at the east end of the Newberg-Dundee Bypass – which is in Newberg's current Transportation System Plan (TSP).

ODOT has taken an important step in proposing a new TSP Amendment that would change this intersection to a "no-through" design.

We now understand that a number of Newberg City Councilors have expressed opposition to this Amendment publicly. While we thank ODOT for proposing that Newberg amend its TSP to replace this design with a no-through design, we are very concerned that your Amendment will be defeated.

Our support of ODOT's no-through design is well documented. ODOT needs to proactively mitigate potentially serious public safety issues along the six-plus miles of Wilsonville Road in Yamhill County, compared to there being less than 100 yards of this already dangerous road in Newberg City limits. This is a far more threatening situation than minor traffic increases on several streets near Springbrook Road in Newberg that the no-through design could cause.

Yamhill County's LCDC-approved Comprehensive Plan and TSP contain important, carefully developed goals and policies requiring safety on our roads and highways, that reflect and align with State goals and policies.

The "through-through" lane configuration directly conflicts with county safety policies. We ask ODOT to take Yamhill County safety policies into consideration before reaching a final decision regarding the Bypass/219/Wilsonville Road intersection design.
Thank you for your leadership in this matter.

Respectfully,

Mary Starrett — Mary Starrett, Yamhill County Commissioner

Stan Primozich — Stan Primozich, Yamhill County Commissioner

4.12
1 of 2

CLACKAMAS COUNTY

BOARD OF COUNTY COMMISSIONERS

PUBLIC SERVICES BUILDING
2051 KAEN ROAD | OREGON CITY, OR 97045

November 5, 2015
Sent Via Email

James T. Potter, Area 3 Manager
Oregon Department of Transportation
885 Airport Road SE, Building P
Salem, Oregon 97301-4788

Re: Wilsonville Road Mitigation

Dear Mr. Potter:

Thank you for your response to our letter dated October 14, 2015 regarding the potential impacts of the Newberg-Dundee Bypass on Wilsonville Road in Clackamas County. While we appreciate that ODOT will work with the regional partners to determine safety and operational improvements, we do not feel that your response addresses our primary concern, which is the mitigation of this construction on Wilsonville Road.

Your letter identifies multiple intersections along Wilsonville Road and states that "traffic conditions along Wilsonville Road are not the sole responsibility of ODOT." The County does not disagree with that summation and we are, in fact, currently working to improve safety and operations at two of those major intersections (Ladd Hill Road and Edminston Road). However, any existing issues on Wilsonville Road are likely to be exacerbated by additional traffic from the Bypass Phase 1 and we expect ODOT to mitigate those impacts. Again, our request of ODOT is to:

1. Analyze the traffic impact of the Phase 1 configuration on the following roadways including options proposed by City of Newberg:
    a. Newberg roads
    b. Clackamas County roads
    c. Yamhill County roads
    d. Marion County roads
    e. City of Wilsonville roads
    f. I-5/Wilsonville Road interchange

2. Identify safety and/or operational issues that could be a concern, and focus on low cost but effective mitigation concurrent with Phase 1 construction.

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4.12
2 of 2

3. Fund and complete a Road Safety Audit on Wilsonville Road between Highway 219 and I-5 including Yamhill and Clackamas Counties, City of Wilsonville and City of Newberg.

We are confident that ODOT recognizes the effect that the Newberg-Dundee Bypass traffic will have on Wilsonville Road and will ease those impacts in a manner that best serves the travelling public. Thank you for your continued attention to this important matter.

Sincerely,

John Ludlow, Chair
Clackamas County Board of Commissioners

cc: Rep. John Davis
Matthew Garrett, ODOT Director
Yamhill County Board of Commissioners
Tim Knapp, Mayor Wilsonville
Ladd Hill Neighborhood Association

4.13

From: **Ludlow, John** JLudlow@co.clackamas.or.us
Subject: **Newberg-Dundee Bypass Follow-up**
Date: **November 18, 2015 at 11:05 PST**
To: Matthew.L.GARRETT@odot.state.or.us
Cc: **Tim Knapp** mayor@ci.wilsonville.or.us, **Scott Starr** starr@ci.wilsonville.or.us, change1@mindspring.com, **John Davis** rep.johndavis@state.or.us, **Savas, Paul** PSavas@co.clackamas.or.us, **Smith, Tootie** TSmith@co.clackamas.or.us, **Schrader, Martha** MSchrader@co.clackamas.or.us, **Bernard, Jim** JBernard@co.clackamas.or.us, springera@yamhill.us, starrettm@yamhill.us, primozichs@yamhill.us, **Bezner, Mike** MikeBez@co.clackamas.or.us, **Schmidt, Gary** GSchmidt@co.clackamas.or.us

Dear Director Garrett:

As you know, I have already alerted you to Clackamas County's concerns about the "through-through" lane configuration at the east end of the Newberg-Dundee Bypass – which is in Newberg's current Transportation System Plan (TSP).

ODOT has taken an important step in proposing a new TSP Amendment that would change this intersection to a "no-through" design.

I understand that a number of Newberg City Councilors have expressed opposition to this Amendment publicly. While I thank ODOT for proposing that Newberg amend its TSP to replace this design with a no-through design, I am concerned that the Amendment will be defeated by Newberg.

Clackamas County's support of ODOT's no-through design is well documented. I ask ODOT to proactively mitigate potentially serious public safety issues along Wilsonville Road in Clackamas County, compared to there being less than 100 yards of this already dangerous road in Newberg City **limits. This is a far more threatening situation than minor traffic increases on several streets near Springbrook Road in Newberg that the no-through design could cause.**

Clackamas County's Comprehensive Plan and TSP contain important, carefully developed goals and policies requiring safety on roads and highways, that reflect and align with State goals and policies.

The "through-through" lane configuration directly conflicts with County safety policies. I ask ODOT to take Clackamas County safety policies into consideration before reaching a final decision regarding the Bypass/219/Wilsonville Road intersection design.

Thank you for your leadership in this matter.

Sincerely,

John Ludlow, Chair
Clackamas County Board of Commissioners

5.01
1 of 3

LHNA Ladd Hill Neighborhood Association

PO Box 2556, Wilsonville, OR 97070

Date: 17 January 2015

To: Director Matthew Garrett, matthew.garrett@odot.state.or.us
Oregon Department of Transportation ("ODOT")
355 Capitol Street NE, MS 11
Salem, OR 97301-3871

Mr. Phillip Ditzler, phillip.ditzler@dot.gov
Division Administrator, Oregon Division
Federal Highway Administration ("FHWA")
530 Center Street NE, Suite 420
Salem, OR 97301

Re: Newberg-Dundee Bypass – Impact on Wilsonville Road

Director Garrett and Regional Manager Ditzler:

We are writing on behalf of the Ladd Hill Neighborhood Association ("LHNA") to underscore and outline the uncertainty and significant impacts of the Phase I terminus of the Newberg-Dundee Bypass (the "Bypass") on Wilsonville Road. Wilsonville Road is a narrow farm-to-market road with many blind corners, limited sight distance driveways and no shoulders. As a designated Scenic Road by Clackamas County, Wilsonville Road is not suited for the increased traffic that would occur on it as a result of the Phase I Bypass terminus proposed construction directly opposite Wilsonville Road's western end at SR219.

To investigate our concerns and examine the impacts, LHNA retained Mackenzie Engineering last year. Brent Ahrend, PE, Senior Associate and Assistant Department Head – Transportation Planning, uncovered significant new information that was not previously disclosed to the public or analyzed by ODOT. The current plans for the Phase I construction of the Bypass makes Wilsonville Road a de facto extension of the Bypass with significant potential impacts on public health and safety. This creates great uncertainty regarding the reliability of ODOT & FHWA's conclusions. Mr. Ahrend has shared the new information with your staff on our behalf. However, we do not believe that enough has been done to resolve the issues that this new information raises. ODOT's offer to put up signs and to do traffic counts after-the-fact is wholly inadequate. After months of trying to get these issues addressed, we feel that the time has come for us

to hear from you and your respective teams that ODOT and FHWA are, indeed, committed to addressing these issues. We write sincerely and in the interest of resolving this matter in good faith through a collaborative discussion within an immediate time frame.

We understand that no funds have been spent on the final design and construction of the terminus of Phase I directly across from Wilsonville Road, however, we see that time is coming soon. We do feel that we have been unable to get your staff to focus on this issue and resolve it. **We want to be clear that we do not oppose the construction of the entire Bypass.** We do, however, strongly oppose the location change of Wilsonville Rd. that was made to the eastern terminus of the Phase I Bypass plans.

As you know, only a 4-mile stretch of the Bypass is being built now, and the rest of it may not be built for decades, if ever. This means that for decades, and perhaps permanently, Wilsonville Road would see a significant increase in traffic. And our health and safety would be highly and negatively impacted unless some changes are made. Our community is at risk because the increased use of Wilsonville Rd. has not been analyzed or mitigated in the existing documentation. As you will see from the attached report and letter from Mackenzie Engineering, the current ODOT Model is unable to assess the impact on Wilsonville Rd. Specifically, in June 2013, we first learned from ODOT that they had not considered the impact on Wilsonville Rd. traffic due to the reconfiguration. Our traffic engineer dug deeper between Fall 2013 and Spring 2014 to discover specific model limitations, confirmed by ODOT. Subsequently, ODOT made two concessions to us by agreeing to signage and planning for traffic counts after the Bypass opens. These concessions, while confirming the model and analysis gaps, are clearly inadequate to address the impact issues on Wilsonville Rd.

As we said, through Brent Ahrend, PE, LHNA has tried in good faith to get your staff to address the uncertainty and significant new information, which we remain open to address provided that it is done promptly and in good faith. Mr. Ahrend has been attempting to arrange meeting with your staff and because of the time it has taken, we decided to outline our concerns and position in writing. We believe that without either a) a modification of the terminus or b) a supplemental environmental impact statement, there is no way for ODOT and FHWA to safeguard public health and safety on Wilsonville Road.

The significant new information is outlined in the attached letter from Brent Ahrend to the LHNA. We have also included other information demonstrating the nature and extent of the impacts, and the concerns expressed by other jurisdictions that also will be impacted by the increased traffic on Wilsonville Road. The new information is significant and demonstrates that previous statements made by certain ODOT staff were both incomplete and incorrect.

In summary, we request that you take the following measures:

1. Halt any design, implementation and/or construction of the relocation of Wilsonville Rd at the Phase I Bypass terminus; and

2. Disclose, analyze and consider mitigation to address the uncertainty and significant impacts of the new information regarding Wilsonville Rd. in a Supplemental Environmental Impact Statement.

As an alternative to #2, above, we are prepared to sit down and discuss this with you and your respective teams to reach a mitigating solution acceptable to all parties. We are certain there is a way to resolve this matter that substantially limits or eliminates the impacts on Wilsonville Road. The whole purpose of the Bypass project is to increase public health and safety, not to decrease it. Unless we jointly figure out a solution, farming operations will be negatively impacted, accidents will increase and livability along Wilsonville Rd. will decline. This is our last attempt at resolving this matter collaboratively, and we hope that you will take us up on it. **We respectfully request a reply to this letter by close-of-business Tuesday 27 Jan 2015.**

If you desire any clarification on the issues raised here, please do not hesitate to contact Stan Halle, Chair of the LHNA Bypass Impact Committee directly at (503) 625-1265 or (503) 319-3011.

Sincerely yours,

Cole Presthus, PE, SE
LHNA Co-President, Yamhill County

Stan Halle, LHNA Director
Past Co-President

cc: (with attachments by eMail)
ODOT Tim Potter, Area Manager and Kelly Amador, Senior Project Leader
FHWA Michelle Eraut, Program Development Team Leader
cc: (without attachments by eMail)
City of Newberg Mayor Bob Andrews
City of Wilsonville Mayor Tim Knapp
Yamhill County Commissioners Allen Springer & Mary Starrett
Clackamas County Commissioner John Ludlow

Attachments:
1. Timeline of Interactions with ODOT, et al.
2. Two sample Letters of the nine filed in 2002-2005 (part of FEIS Tier 2)
3. Accident Reports from Yamhill & Clackamas Counties, Traffic Counts & Speeds
4. Wilsonville Rd. Driveway and Signed Side Road Counts
5. Additional References, including URL for the 27 Nov 2013 articles in the three regional newpapers; URLs for Traffic Counts & Accidents on Wilsonville Rd. (Clackamas County); relevant sample of eMails & statements by public officials
6. Mackenzie Engineering Report dated 14 November 2013
7. Mackenzie Engineering Letter dated 16 January 2015

Additional References for 16 Jan 2015 Letter to ODOT and FHWA
From the Ladd Hill Neighborhood Association (LHNA)

1. 14 Nov 2013 Semi on Wilsonville Rd driving dangerously around one of our many curves. We live with this every day. *Note: see attachments on accidents over the past 15+ years!*

2. Clackamas County Average Daily Traffic Counts:
https://batchgeo.com/map/916fb5b50907828cd59b56d1d8331652

3. Wilsonville Rd. Crashes 2006-2013 (list maintained by Clackamas County)
https://batchgeo.com/map/4959e62d77beebc6a0888216db556438
   a. *Note:* Yamhill County Sheriff's Office indicates that accidents along their half of Wilsonville Rd. have historically been 20-40% greater than the Clackamas County half.
   b. *Note:* the above photograph exemplifies the very real danger of having commercial traffic incorrectly use a windy, no shoulder, Clackamas County designated scenic road to go between I-5 and Newberg.

4. Article that appeared in the Portland Tribune, Wilsonville Spokesman and Newberg Graphic 27 Nov 2013 "Some Fear Bypass Will Heap Traffic Onto Wilsonville Road":
http://portlandtribune.com/wsp/134-news/202592-some-fear-bypass-will-heap-traffic-onto-wilsonville-road. Important quotes from this article:
   a. *"(The Oregon Department of Transportation is) very much convinced that having Wilsonville Road be part of a signalized intersection, there really is a belief that the creation of the bypass won't increase traffic on Wilsonville Road,"* Wilsonville Community Development Director Nancy Kraushaar told the Wilsonville City Council on Nov. 18.

b. *"The Ladd Hill CPO is really worried about it,"* Kraushaar told the council. *"When I first started getting calls from the CPO, I also contacted Clackamas County. The county met with the CPO and the county's thought was that what's important is to take traffic counts now and take them after the bypass is completed and see if models were correct or not. And if that's not the case, do something."*
c. *"It seems to me it would make sense to evaluate low-risk mitigation on the front end before you risk millions of dollars building it a certain way,"* said Wilsonville Mayor Tim Knapp. *"I don't see a downside to considering one of those other options; whereas there is a significant downside to the option they've chosen to focus on. It doesn't seem like it would be that hard to answer those questions."*
d. Kraushaar said she simply doesn't have the data at present to contradict ODOT's projections. *"My thought is for safety," she said. "It's not a safe road. It's narrow and windy, people cut across their lanes to do their fancy driving, stuff like that. But ODOT continues to stick to their belief that their model is correct and that we don't need to do anything."*

5. Email from John Ludlow, Clackamas County Commissioner Chairperson to John Freeman, LHNA Co-President (2013-2014), dated 29 Aug 2013:
   a. From: **Ludlow, John** <JLudlow@co.clackamas.or.us>
   Date: Thu, Aug 29, 2013 at 1:32 PM
   Subject: Wilsonville Rd
   To: John Freeman <johnfreeman97140@gmail.com>
   cc: "Smolak, Barbara" <barbarasmo@co.clackamas.or.us>, "Schmidt, Gary" <GSchmidt@co.clackamas.or.us>

   John, at a recent Ladd Hill CPO event I heard some concerns and questions regarding impacts to Wilsonville Road because of the Newberg-Dundee Bypass project. The following is information I have collected in response, please feel free to distribute to your members.

   As part of the Newberg-Dundee bypass project in Yamhill County, ODOT is redirecting through traffic off of Highway 99W and on to a new proposed facility. The new roadway would terminate in a 4-way intersection with Wilsonville Road, which eventually becomes a Clackamas County road that has an interchange with I-5. There are concerns that this new connection will greatly increase traffic on Wilsonville Road, a road with a windy alignment that makes it an inappropriate choice to handle more traffic. ODOT published a memo dated August 16, 2013 that details the traffic analysis they performed to determine impacts to Wilsonville Road. The analysis seems to indicate that the bypass will result in NO extra trips on Wilsonville Road. Specifically, it appears to show that the traffic counts will be exactly the same with or without the bypass. This conclusion warrants additional scrutiny.

   County staff have contacted ODOT and requested a meeting with public works officials from ODOT, Marion County and Yamhill County to discuss this. In preliminary discussions with Marion County, we have learned that

they are also wary of traffic impacts to their local system as a result of the bypass.

Clackamas County staff will obtain additional clarification about ODOT's traffic model. In addition, regardless of the analysis results, staff will clarify what steps ODOT is taking to discourage bypass traffic from continuing along Wilsonville Road. Our expectations are for ODOT to propose measures that could include alternative routing, signing, medians, or other effective means of discouraging traffic from using Wilsonville Road.

We will provide an update after this meeting. Best, John

b. *Note:* It is LHNA's understanding that this ODOT-Three County Meeting has not yet taken place (17 months later).

6. An informative eMail from Cole Presthus, PE, SE – a neighbor and the LHNA 2015 Co-President for Yamhill County:
   a. On Aug 31, 13, at 5:39 PDT, Cole Presthus <colep@wdyi.com> wrote:
      John/Stan/Devin/Cheryl:
      I'm forwarding to you the July 1, 2013 technical memo from Bill Ciz of Parametrix to Kelly Amador, ODOT Project Manager of the By-Pass project, see attached.
      A couple things to keep in mind:
      1) When you read the narrative it gives scenarios of Peak Hour traffic volumes. Peak Hour traffic is the estimate between 4:00 pm and 6:00 pm on any given weekday. Per Larry Conrad of Clack. Co. a very good rule of thumb is that total daily volume is approximately equal to 10 times the Peak Hour volume. So for instance if you look at the 2nd paragraph of the memo for the 2011 Peak Hour Traffic estimate at Wilsonville/ Springbrook Rd, the total east & west volume is 205 + 140 = 345 for the Peak Hrs. Multiplying 345 by 10 you get 3,450 for the estimated total daily traffic count (counting traffic in each direction), and that number is very close to the most recent daily count that was taken. So on the other traffic scenarios, just multiply by ten, and that gives you the approximate total daily count.
      2) The By-Pass is expected to open in 2016, their estimate says in 2016 there will be no change in traffic count as a result of the By-Pass from the "No-Build" vs "Build" comparison ("No-Build" meaning the By-Pass is not built).
      3) In 2035, there is an expected eastbound Peak Hour increase on Wilsonville Rd. from the "No-Build" to "Build" condition of 50 vehicles during Peak Hr, from 280 to 330, creating a daily total increase of approximately 500. That's an increase of 18% indicating that the longer the By-Pass is open the more people will tend to use it.
      4) In talking with Larry Conrad, he strongly recommended that the LHNA should request that ODOT install rubber tube traffic counters a couple months before the By-Pass opens on Wilsonville Rd, Springbrook, and HWY 219 to get real 2016 "No-Build" traffic counts just prior to the By-Pass opening and extend the tube count to at least 3 months after the By-Pass is fully opened. He says Tube Counts are very inexpensive to do

and yield very good data. If there is a significant increase in Wilsonville Rd use within 3 months after the By-Pass is fully opened, then LHNA should be requesting redress from ODOT. We should be asking that "What if" question now to get ODOT thinking about it now as to what they will do. We also talked about the option previously brought up with ODOT of doing all the By-Pass work except not change the Wilsonville Rd connection from off of Springbrook Rd. That construction connection work is planned last, so could easily be left undone with the traffic signals, lanes, etc, still designed for the connection if desired later.

5) Another comment I'll pass on is what happened when I-205 was opened in the Metro area here. ODOT did their traffic study, etc, designed I-205 for what they thought was the correct vehicle count, opened the highway and in less than one year the traffic count was at their 20 year future build-out count because they failed to accurately account for the local Metro population using I-205 as a local east-west commuter route in addition to the basic Interstate traffic volume. My personel observation of the numbers in this memo is that they are making that same classic mistake again here by not considering the change that local commuter drivers will make when the By-Pass is opened and conveniently connects straight into the east end of Wilsonville Rd while at the same time making it extremely difficult to navigate the 1.5 miles and six traffic signals in Newberg trying to get back onto or off of Hwy 99 proper at the northeast end of Newberg. Give me a call if you have any questions, Thanks, Cole

6) Cole Presthus, P.E., S.E.; **WDY Structural - Civil Engineers**
6443 SW Beaverton-Hillsdale Hwy, Suite 210, Portland OR 97221
ph: 503.203.8111, ext. 17; cell: 503.819.5146; fx: 503.203.8122

7. **Another informative eMail from Dave Leckey, past LHNA Co-President for Clackamas County addressed to State Representative Schrader.** ***Note: Dave Leckey sent the same note to State Representative Davis:***
   a. **On Sep 23, 13, at 8:50 PDT, David Leckey <leckeydg@gmail.com> wrote:**
   Dear Representative Schrader (Schrader, Merkley, and Wyden):
   I'm writing to bring to ask your help regarding a Clackamas County issue that, if unchanged, will dramatically and negatively affect Wilsonville and the Wilsonville Road connecting Wilsonville with Newberg. As you probably know, the Newberg/Dundee Bypass is in late planning stages with some early construction already begun. The concern is that in the planning for this bypass - which will greatly affect how traffic moves from Highway 99 to I-5 - Clackamas County and the city of Wilsonville, were not even given a seat at the table. (This from John Ludlow, Head of the Clackamas County Board of Commissioners.) The primary issue is that the way the plans show now, the eastern end of the Newberg/Dundee Bypass will end at a 4-way intersection. The two eastbound lanes of traffic, most of whom just want to get to I-5 and on to Portland or the suburbs around, will have the choice of either turning north and heading back towards highway 99 through Sherwood and Tigard (a slow choice for anyone not going to one of those two destinations), turning right towards St. Paul which is just intuitively wrong, or going straight ahead on the Wilsonville Road, which leads directly to I-5 without a single stop sign until you get to Wilsonville. Wilsonville in

the mornings and afternoons is already traffic snarled, a bunch of new traffic from the bypass will greatly worsen the problem. And this doesn't mention what will happen to traffic on Wilsonville Road – a 2-lane twisty road that simply isn't built for that kind of volume. (It also happened to be one of Clackamas County's few designated 'Scenic Roads'.) There are many more details I won't try and get to in this email, but Please, Please, look into this matter. In a recent neighborhood meeting with representatives of ODOT, they said that perhaps they could put up some signage indicating another alternative to I-5 rather than Wilsonville Rd, but anybody with a GPS, or anyone who knows the area, is going to show Wilsonville Road as the shortest, fastest route. A hugh amount of federal money is going into this project and it would be a shame to have one problem solved just to have another created. Please look into this, and help if you can. It's not too late to reevaluate this intersection and the impact the current plan will have on Wilsonville and Wilsonville Rd. This is a regional issue, not just a Yamhill/Marion County issue.
Thank you,
David Leckey, Past- President of the Ladd Hill Neighborhood Assn., owner of Oregon Small Trees Nursery
34430 SW South Ranch Rd, Newberg, OR 97132 (Clackamas County)
leckeydg@gmail.com; 503/625-9467, 503.860-0538 (cell)

8. An eMail chain between Mary Starrett, now one of three Yamhill Commissioners and Dawn Phillips, Policy & Public Relations Director for State Representative Kim Thatcher (to be read from the bottom-up):
    a. **From:** Mary Starrett [mailto:marystarrett@hotmail.com] **Sent:** Monday, October 28, 2013 3:24 PM **To:** Rep Thatcher **Subject:** Bypass Concerns For Newberg Residents
    Kim, Hope all is well. Our Ladd Hill Neighborhood Association asked that I contact you about a Bypass issue that concerns them. Starting in 2016, the Bypass will end at a signal light opposite Wilsonville Rd. (where it used to meet St. Paul Hwy. opposite Wynooski Road) Folks who live on Wilsonville Road and around the Parrett Mountain area are concerned about the termination of the bypass at Wilsonville Rd. There is concern that would encourage a straight shot down Wilsonville Rd. between the bypass and I-5 . People who live here and use Wilsonville Road are worried that would greatly increase the number of vehicles and speeds of those vehicles by beach-bound, commuter vehicles and trucks on Wilsonville Rd. As it stands now, the road is windy and dangerous and there have been many serious accidents. The unintended consequence of more cars and faster speeds would only make the road more dangerous. Do you have any suggestions as to how our Neighborhood Association could work to mitigate this danger and work to discourage the increased traffic by going straight to ODOT's Tier 4 Plan (This Tier takes the 219 access toward Wynooski Road using Tier 1 monies and timeframe.)? Thanks, we figured it was worth at least checking in with you to see what our options are.
    Take care, *Mary Starrett*

    b. **From:** rep.kimthatcher@state.or.us **To:** marystarrett@hotmail.com **Subject:** RE: Bypass Concerns For Newberg Residents **Date:** Mon, 4 Nov 2013

20:46:59 +0000
Hi Mary,

Rep Thatcher asked me to get back to you with a couple of ideas. I'm guessing that if we went to ODO to ask them about these concerns they would give us the usual line about how they already had months of public hearings and accepted input from neighbors about their concerns and now the project is approved and moving forward. They would probably, I'm guessing, push back with any changes to move up the timeline with the Tier 4 suggestion as being unworkable due to higher costs and lack of necessary approval for whatever permits and things they might need to do that.

Having said all that there may be a couple of options. I think there is still this local advisory committee that meets on a regular basis with city, county and state representatives. You might be able to reach out to them and ask for a meeting. You could also ask to meet with the ODOT Region 2 managers in charge of the project.

If you think it would help Rep Thatcher would be happy to ask the committee and/or ODOT to meet with the group you're talking about as a courtesy to her constituents but with her crazy travel schedule in the next few weeks it may be hard for her to be there in person. I'm not sure she needs to really be that involved at this point, but we can certainly help facilitate a meeting if you want.

Let me know how you want to proceed. Thanks,
Dawn Phillips Policy & Public Relations Director State Representative Kim Thatcher 900 Court Street NE Salem, OR 97301
503.986.1425 www.leg.state.or.us/thatcher rep.kimthatcher@state.or.us

9. **An eMail from Diana Pompe, LHNA Communications Facilitator updating Mike Bezner, Manager Clackamas County Transportation Engineering summarizing the Newberg City Council meeting 2 Dec 2013:**
   a. **From: Diana Pompe <**dianapompe@gmail.com**>**
   Date: Tue, Dec 3, 2013 at 11:16 AM
   Subject: RE: Dec. 2 Mtg with Newberg City Council RE Wilsonville Rd
   To: "Bezner, Mike" <MikeBez **cc:** dianapompe@gmail.com**, John Ludlow <**john070@hevanet.com**>, John Freeman <**johnfreeman97140@gmail.com**>**@co.clackamas.or.us**>**

   Hi Mike,
   Thanks for your inquiry. At least 40 people or more came to the meeting regarding Wilsonville Rd. At 7 pm, the mayor had a recess with his attorney and city manager. He came back in and acknowledged that testimony had been closed at the end of the Nov. 4 meeting, but he asked his councilors if they would allow some further testimony and they agreed, by motion. That surprised us because no one had thought we would have that option. Five folks said they would speak in favor of recommended changes, with ODOT as opposing testimony.

Council wanted ODOT to address what they were going to do to prevent undue traffic on Wilsonville Rd. Signage is really what they are offering---signs before the intersection to move traffic past. Also, they discussed reworking some data assessment of road traffic before and after build out. John Freeman did the most comprehensive reiteration of LHNA potential solutions for Wilsonville Rd. He also stressed that ODOT has used faulty data to all parties, citing specific pages from ODOT's reports.

ODOT's Kelly Amador said that any changes would cost another 4.5 million and at least another year and maybe even more. Kelly did not produce any specifics, making folks feel she has not put any thought into truly estimating the cost of any change. These costs/time seemed to be used to compel the councilors to find them too onerous, and may have been a worst case scenario for an unsubstantiated estimate.

The mayor then asked for questions from councilors. One councilor said that all that traffic data presented by ODOT didn't mean much to her and she asked for some explanation. At that point ODOT explained what "modeling" meant and that these were studies using 2011 traffic statistics. But they made a case for this kind of modeling being somewhat standard. That's when a little more commitment to more traffic study was made by ODOT. ODOT doesn't do any power point specifics when making a nod to what they might do. Basically they seemed to commit to more signage before cars reach Wilsonville Road to direct them past the intersection to Hwy 99 ahead.

After testimony, the Mayor gave councilors a chance to speak. One councilor drives Wilsonville Rd sometimes 6X a day. Another said he had been neutral or on the fence but he was now of the belief LHNA concerns were justified. They had one young councilor that didn't believe that you should go forward with a flawed plan at all, and another woman councilor that totally agreed with LHNA and said that she would help in any way she could along the way, but was going to have to vote for the resolution. Hers was the majority opinion of the councilors.

The Newberg City Manager was supportive of the ODOT measure and clarified that what they were voting on was to keep the project going forward. At one point councilors needed clarification from the city manager as to what they were actually voting on---to hold up the project to change the intersection or to move forward? The implication from the mayor seemed to be that LHNA concerns might be addressed in other ways at other times since the intersection will not be among the first things done.

The Mayor and the 6x-a-day Wilsonville Rd driver both stressed that after all these years they had to be committed to GETTING THE BYPASS ACCOMPLISHED no matter how long or how many phases it takes. At least three councilors believed they will never see all the other phases funded, but the mayor said that he wanted to be optimistic about this. Although almost every one of them were empathetic to the LHNA suggested changes, when vote was called, 6 of the 7 voted to proceed with the plans.

The Mayor took time to thank each of us for coming and stressed that his board would be alert to Wilsonville Road problems and futuristically would do what they could to mitigate the potential problems within their area of responsibility. The Mayor seemed very sincere, and I do think the group will give more consideration to Wilsonville Rd. concerns in the future. However, it doesn't appear that every councilor has been tracking specifics regarding the details of the bypass design. The Mayor pointed out and clarified with ODOT that this vote did not involve county or city roads projects, but just the ODOT bypass, and, by implication, there might be something that other agencies could do apart from the ODOT responsibilities.

Contrary to ODOT, the councilors seemed to agree with LHNA that Wilsonville Road WOULD BE IMPACTED by the current plan. The City of Wilsonville and Clackamas county will probably need to monitor what is happening very closely and keep the accountability on ODOT to do all they can in signage, etc., to deflect traffic tempted to use Wilsonville Road as a connector to I-5. Also, if any "soft solutions" could be suggested to the Newberg council with whom we met, I think they would try very hard to support those along the way.

Mike, thank you so very much for your proactive work on this. The more knowledge and communication folks have about a subject, the better decisions can be made. You have had a wonderful role in this. Thank you for your efforts.
DIANA POMPE, LHNA communications facilitator
Dir: 503- 625-5743; dianapompe@gmail.com

10. **An eMail from John Freeman, LHNA Co-President Clackamas County (2013-2014) reaching out to our membership to provide some history, perspective, and ask for folks to attend the second hearing at Newberg City Council:**

From: John Freeman [mailto:johnfreeman97140@gmail.com] **Sent:** Monday, November 25, 2013 9:31 PM **Subject:** Wilsonville Road traffic increase

Hello,
ODOT has decided that the West end of Wilsonville Road should tie directly into the East end of the new Dundee-Newberg By-Pass. If they proceed with that design, there will be an huge increase of traffic on Wilsonville Road. We need your help and assistance to persuade ODOT to make some small, but important, changes to the way in which the By-Pass and Wilsonville Road interface.

Here is a summary of the history:

The Ladd Hill Neighborhood Association (LHNA) was active 10 years ago providing input into design considerations of the By-Pass. Five months ago, we discovered that ODOT had forgotten and/or ignored our input from long-ago. So, we became involved with ODOT by first having present their plan at a LHNA meeting. At that meeting, we told them we did not like the fact that

Wilsonville Road was designed to be a defacto extension of the By-Pass, because of the increased traffic that would result.

About 2 weeks later, ODOT forwarded us a report from one of their consultants which stated a traffic study indicated there would be no significant increase in traffic on Wilsonville Road.

In late October, two of us met with the Planning staff at the City of Newberg. The Staff told us that the Newberg City Council would have a hearing on November 2nd to approve the road design at the East end of the By-Pass. So, four of us from LHNA attended that City Council Meeting and provided both verbal and written testimony. We suggested an alternative design for the East end of the By-Pass at that meeting. ODOT presented their plan, discussed the fact that there would be no traffic increase on Wilsonville Road, and that any changes would delay the over-all project.

The City Council commented that our suggested changes were logical and appeared to have merit, and questioned ODOT as to why they had not given our suggestions serious consideration, but the Council let our suggestions drop once ODOT told them that it would delay the project.

The four of us thought that ODOT's comments concerning no traffic increase were illogical and unbelievable! At the end of the Council meeting, the 4 of us decided that we needed to hire a traffic engineer to look at the ODOT traffic study, to advise us if their assumptions and conclusions were correct.

Our traffic engineer met with the ODOT consultants, and then wrote us a report explaining that the ODOT traffic study was not performed using the current road plan which ODOT is attempting to implement. And therefore, ODOT has no basis for saying that there will be no traffic increase on Wilsonville Road. ODOT has not commissioned a traffic study with their current design.

On December 2nd, the City Council will have a second and final reading/hearing to approve the ODOT road design. There will be no public testimony on December 2nd, however, we have submitted written testimony (a copy is attached to this email) which includes our engineer's report and a drawing we created to illustrate our suggested changes.

11. An eMail from Larry Conrad, Principal Transportation Planner, Clackamas County in response to two of our neighbors (Kim and Roxanne Kimberly) expressing concerns about the Bypass being called an Expressway and terminating directly across from Wilsonville Rd.:
    a. On Feb 25, 2014, at 11:20 AM, "Conrad, Larry" <LarryC@co.clackamas.or.us> wrote:
    A.G. 'Kim' and Roxanne

    Thank you for your inquiry concerning the potential traffic impacts of the Newberg Dundee Bypass on Wilsonville Road.

As you are probably aware, ODOT has been involved in a multiyear environmental analysis of the need for the Newberg Dundee Bypass. This process resulted in a Final Environmental Impact Statement (FEIS) which has been approved by the Federal Highway Administration (FHWA). The results, of the FEIS traffic forecast, is that there will be no significant increase in traffic on Wilsonville Road as a result of the construction of this project.

The current project construction – Newberg Dundee Bypass Phase 1 – is only a portion of the larger project and is expected to be completed by the end of 2016. Additional phases of this larger project will be undertakes as additional funding become available.

The County and the City of Wilsonville were not directly involved in this study but were aware of the fact that the FEIS was occurring. The County and the City of Wilsonville recent met with ODOT to discuss the projects potential impacts on Wilsonville Road. We were told that the traffic forecast shows that there will be no significant increase in traffic on Wilsonville Road as a result of the construction of this project.

Not everyone is necessarily convinced that this is the case. The County has advised the Ladd Hill CPO to request that ODOT conduct traffic counts on Wilsonville Road before the Newberg Dundee Bypass in opened to public travel and also conduct traffic counts for the 3 months after the Bypass is opened to public travel to confirm that there are no significant traffic impacts to Wilsonville Road. ODOT has agreed to do this.

These traffic counts will provide information that all on the interested parties can use to verify whether or not the travel forecast was correct. If a problem is identified by these traffic counts, the County, ODOT and the City of Wilsonville will have a sound basis to address any identified problems.

I hope this answers your questions.
Larry Conrad
Principal Transportation Planner
(v) 503.742.4539; larrycon@co.clackamas.or.us

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LHNA Ladd Hill Neighborhood Association

PO Box 2556, Wilsonville, OR 97070

Date: 21 April 2015

To: Director Matthew Garrett, matthew.garrett@odot.state.or.us
Oregon Department of Transportation ("ODOT")
355 Capitol Street NE, MS 11
Salem, OR 97301-3871

cc: Mr. Phillip Ditzler, phillip.ditzler@dot.gov
Division Administrator, Oregon Division
Federal Highway Administration ("FHWA")
530 Center Street NE, Suite 420
Salem, OR 97301

Re: Newberg-Dundee Bypass – UPDATE & New Cause for Concern

Director Garrett:

Bottom Line Upfront: *Three months ago, you personally set things in the right direction. Working together with Sonny Chickering, Tim Potter and Kelly Amador, we have made significant progress on joint development of a mitigating solution that prevents through traffic between the eastern terminus of the Phase I Bypass and Wilsonville Rd. To our great dismay, last Thursday at the Yamhill County Parkway Committee (YCPC) meeting, attending ODOT staff (Tim Potter & Kelly Amador) made statements that essentially undermined all our collective hard work and negotiation. Whether intentionally or not, Tim Potter and Kelly Amador at the YCPC, either did not get, or disregarded, the direction you set. This threatens to waste the good work that has been done by ODOT technical people, and needlessly moves ODOT and FHWA toward litigation.*

While we remain supportive of the entire Bypass Project, we must take every possible action to ensure that the safety of 100's of families, multiple working farms, and several schools along Wilsonville Rd. is not compromised. The impact of funneling Bypass traffic into the City of Wilsonville will also severely impact the intersection at Boones Ferry Rd. and Exit 283 at I-5, both already at capacity. Unless immediate action is taken to reverse the damage done at the YCPC, the LHNA is left with little choice but to pursue our original claim outlined in our 16 January 2015 letter to you.

We sincerely hope that we have misread ODOT Staff's performance at the YCPC meeting. Until this past Thursday, LHNA was increasingly optimistic that the parties had reached agreement and resolved the significant impacts indicated by the new information we discovered and laid out in our letter of 16 January. Together we could have shown the YCPC that the 'no-thru movement' design meets the goals of all parties, including Newberg.

Here are the details:

1. Based on your 27 Jan 2015 reply in writing to our letter and follow-up phone discussion with Stan Halle 30 Jan, LHNA agreed to meet with ODOT Staff, led by Sonny Chickering, Region 2 Manager. To date, we've met face-to-face three times (3 Feb, 12 Feb and 4 Mar), with additional 1-on-1 calls between Sonny Chickering and Stan, as well as an update call between you and Stan 6 March. – *Every one of these meetings and calls was constructive, giving us high confidence that ODOT was acting in good faith.*

2. Based on your direction, ODOT Staff came to our first meeting having examined several alternatives to the Phase 1 Intersection Design called "Option 1" (ref: the Newberg TSP amended Dec 2013 that allows Wilsonville Rd. to terminate directly across from the Bypass). Each of these alternatives had major issues from ODOT's perspective. The Staff then offered us a revised intersection design that would prohibit eastbound Bypass traffic coming straight through the OR219 intersection onto Wilsonville Rd., while staying within the existing right-of-way footprint. – *We were very encouraged by this proposed design.*

3. At the same meeting, LHNA proposed a further change that would also limit westbound traffic from Wilsonville Rd. going directly across OR219 onto the Bypass. ODOT Staff agreed to flesh out this combined revision by working in close conjunction with Brent Ahrend, LHNA's traffic engineer, along with others supporting this effort at Mackenzie Engineering.

4. After considerable internal discussion at ODOT (and with us at meetings #2 & 3), phone calls and eMail exchanges, Sonny told us that "the State Roadway and Traffic Engineer indicated he agreed that the concept of modifying the intersection design to preclude through movements to/from the Bypass and Wilsonville Rd. is viable, subject to further refinement of the lane channelization islands." We were also told that this 'no-thru movement' design was also consistent with ODOT's goals of requiring no new right-of-way or environmental permits. We agreed to jointly present this solution to the YCPC at its Thursday 16 April meeting. ODOT Staff indicated that they would send us the design a few days in advance for our review, which was done on Monday 13 April.

5. We asked ODOT Staff 8 April to let us know how this intersection design would be presented to the YCPC and suggested we coordinate our comments. – *LHNA did not get any response or offer to prepare together in advance, thereby leaving us in the dark.*

6. At the YCPC meeting Thursday morning, ODOT Staff handed out copies of two intersection designs (attached), one labeled 'Option 1' and the other, which was, in fact, the ODOT/LHNA jointly developed 'no-thru movement' solution, had no label at all. This is when things quickly unraveled:
    a. ODOT Staff indicated the 'Option 1' was still ODOT's planned configuration. – *While this may be technically true, members of the YCPC, who are not familiar with ODOT's internal design and engineering change process, would very likely interpret this to mean 'Option 1' is ODOT's preferred design.*
    b. ODOT Staff indicated that the other design came from LHNA & our traffic engineer – *which gave no indication that (i) ODOT originally had created it; (ii) ODOT & LHNA had worked together to develop this solution that directly addressed the goals/concerns of both organizations; (iii) this solution had been approved by the State Roadway and Traffic Engineer, etc.; and (iv) this solution would meet ODOT's stated intent not to make Wilsonville Rd. a de facto extension of the Phase 1 Bypass, stay within the right-of-way and not require additional environmental permits.*
    c. When the City of Newberg's Mayor Andrews raised concerns (expressed as 'angst') about the potential impact on local streets, specifically the quarter mile section of East 2nd St. between OR219 and Springbrook Rd., ODOT did not make it clear that very little impact was expected. – *Instead, ODOT Staff said that either intersection configuration would work, referring back to the analysis and modeling done for the Bypass FEIS. This was a gross misrepresentation of the model that has been shown to be inadequate and could not give these results. In fact, no modeling was done re the reconfiguration of Wilsonville Rd. (Option 1), as explained to our traffic engineer by the State's own traffic consultants early in 2014. ODOT's internal model analysts also indicated at that time that the current State Model was incapable of modeling the Option 1 reconfiguration.*
    d. ODOT Staff then said that they had tested Google-Maps and Garmin and that Wilsonville Rd. was not shown as the preferred route. – *Without the direct connection to Wilsonville Rd. in place, such a conclusion was at best a misrepresentation of the likely driver behaviors sitting at the eastern end of the Bypass and seeing a straight shot to I-5 without traffic signals until well into the City of Wilsonville. While LHNA takes no issue with ODOT's total vehicle numbers arriving at the intersection, we take strong objection to ODOT claiming that its model predicts driver behavior as to the specific choice between going straight east through the intersection onto Wilsonville Rd. or turning north to stay on Hwy 99.*

In conclusion, LHNA believes that much harm has resulted from ODOT's presentation to the Parkway Committee and greatly increased potential opposition from local governing bodies to the 'no thru movement' solution initially proposed by ODOT and developed jointly between us. Of greatest concern to us, is that the Newberg Mayor was left with the misconception that this joint solution would generate grave impact to local streets. As a result, the Newberg City Council, lead by Mayor Andrews, may well use their TSP to effectively reject the joint 'no-thru movement' solution. That misinformed action would be unacceptable to Yamhill County Commissioners, the

City of Wilsonville, Clackamas County Commissioners, the West Linn-Wilsonville School District, and the LHNA.

We propose instead to work with ODOT staff to educate Newberg officials that pursuing the original configuration ('Option 1') would require both a supplemental Environmental Impact Statement and consideration of the very mitigation that we have jointly developed over the past several weeks. In order to keep the Bypass Project on track and meet both ODOT and LHNA goals restated above, we request that ODOT Staff meet with the LHNA traffic engineer (and one or two of our team members) as soon as possible. The goal is to discuss and agree on the content, process, tone, specific timing and how we will execute each of the following immediate actions:

1. Sit down with Newberg Staff (planning and engineering) working jointly with LHNA's traffic engineer to:
   a. Accurately lay out the history, issues, genesis and development of the 'no-through traffic' solution;
   b. Review expected traffic volumes for each configuration, emphasizing that increased local use of East 2nd St. is at an insignificant level;
   c. Stop claiming that the model predicted driver behavior re Wilsonville Rd.
   d. Show that the TSP amendment passed by Newberg City Council Dec 2013 is more than sufficient to continue the Phase 1 Bypass Project given the existing right-of-way with little-to-no impact to local streets. In other words, a second amendment to the TSP is not necessary.
2. Attend an upcoming Newberg City Council meeting (date TBD, target 1st or 3rd Monday in May) and present #1 above in summary and in close coordination with LHNA.
3. Do the same at the Newberg Traffic Safety Commission, as well as at other jurisdiction meetings, when and as needed.

If, however, ODOT is unwilling to support its own traffic mitigation design (jointly developed), we will have no choice but to pursue our original course of action by filing a legal complaint against ODOT and FHWA. Please refer to the LHNA letter dated 16 January 2015 addressed to ODOT Director Matthew Garrett and FHWA Division Administrator Phillip Ditzler, in which we outlined the issues of our complaint. LHNA has worked diligently not only to support the Bypass, but also to support your existing project schedule. We have also patiently flexed as several ODOT Staff target dates provided to us slipped. The timing of your approaching milestones will force us to act, if these issues are not satisfactorily addressed immediately. We hope you agree that this is avoidable. We do not wish to see all the good-faith efforts and hard work by both ODOT Leadership & Staff and the LHNA be for naught.

If you desire any clarification on the issues raised here, please do not hesitate to contact Stan Halle, Chair of the LHNA Bypass Impact Committee directly at (503) 319-3011.

Sincerely yours,

Cole Presthus, PE, SE
LHNA Co-President, Yamhill County

Stan Halle, LHNA Director
Past Co-President, Yamhill County

cc: ODOT: Tim Potter, Area Manager
Kelly Amador, Senior Project Leader
FHWA: Mike Morrow, Senior Operations Engineer
Michelle Eraut, Program Development Team Leader
LHNA: Board of Directors
Brent Ahrend, PE, Senior Associate, Assistant Department Head
Transportation Planning, Mackenzie Engineering

Attachments:

1. Two Maps presented by ODOT Staff at the Yamhill County Parkway Committee (YCPC) meeting Thurs 16 April 2015.

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LHNA Ladd Hill Neighborhood Association

PO Box 2556, Wilsonville, OR 97070

Date: **17 June 2015**

To: City of Newberg Mayor Bob Andrews
bob.andrews@newbergoregon.gov

cc: TBD

Re: **Newberg-Dundee Bypass – UPDATE and need for a resolution soon**

Dear Mayor Andrews:

In advance of tomorrow's meeting of the Yamhill County Parkway Committee (YCPC), we wanted to give you this update to:

a. Let you know where things stand regarding our discussions with your staff;
b. Provide you with a thumbnail sketch of relevant history;
c. Inform you as to where the LHNA stands and what actions we are considering.

Quick Historical Recap – At the Nov and Dec 2013 Newberg City Council meeting a vote was taken on a critical amendment to the City's TSP which allowed the Bypass to end directly across from a local connector street, namely Wilsonville Rd. (at OR219). The LHNA submitted written and verbal testimony against the reconfiguration claiming that this already unsafe road could not withstand significant additional traffic. In their documents and at the meeting, ODOT officials claimed that their "modeling and analysis showed no impact, …" Working with a professional traffic engineer (Mackenzie Engineering), LHNA later proved that this assertion was misleading and not applicable to Wilsonville Road. ODOT has since clarified that it did not analyze the impact on Wilsonville Rd. ODOT also testified that any change to this configuration may cost in excess of $2 million and delay the overall Bypass by 18+ months. On this basis, the City Council voted 6 in favor and 1 against, thereby passing this amendment.

LHNA spent the next 12 months conducting its own studies and analysis, resulting in the discovery of significant gaps and new information that were missing from the Final EIS prepared for the Bypass. LHNA determined that it could bring legal action to require ODOT & the FHWA to prepare a Supplemental EIS. In order to avoid litigation, we sent a letter dated 17 January 2015 to ODOT Director Garrett and FHWA Regional Manager Ditzler (copied to you and several others) with all the information we had gathered and asked ODOT to come to the table and work in good faith to resolve the issues.

ODOT responded within a few days and opened the door to substantive and productive discussions with LHNA and its traffic engineer, resulting in a jointly designed solution that would meet ODOT's needs:

a. Falling well within the existing Bypass budget and schedule;
b. Not changing the right-of-way footprint; and
c. Not requiring any additional environmental permitting.

This solution was a 'no-thru intersection design' that was initially proposed to LHNA by ODOT and worked on extensively by both ODOT engineers and LHNA's engineer. The design was reviewed and approved by the State Traffic Roadway & Traffic Engineer Bob Pappe mid-March 2015.

The only action remaining to implement this design change was to review it at the Parkway Committee and with the City of Newberg. At the April meeting of the Yamhill County Parkway Committee, you expressed several concerns about the 'no-thru design' of the intersection of the Bypass & Wilsonville Rd. (at OR219):

a. Would police or fire emergency vehicles be able to cross OR219 either westbound or eastbound?
b. What would the impact be on other local Newberg streets, e.g., East 2nd Street between OR219 and Springbrook, or on 99W in Newberg city center?

LHNA and ODOT have responded to these valid concerns. For example, the configuration of the intersection was confirmed by ODOT, in fact, to allow for emergency vehicles to pass in both directions and that the impact on local Newberg streets would be negligible. We also explained that leaving the current design of a thru-thru intersection of the Newberg-Dundee Bypass and Wilsonville Rd. (at OR219) would result in significant impact on public safety along the 12-plus miles of Wilsonville Rd, which is already a dangerous rural road.

You asked us to meet with your Staff to discuss these concerns in greater detail. On 23 April 2015 representatives of LHNA and our traffic engineer, Brent Ahrend, met with Kaaren Hofmann, Douglas Rux and Jessica Nunley Pelz from your Staff, along with Tim Potter and Kelly Amador from ODOT.

As a result of that meeting and the questions/concerns raised by your Staff, we asked Brent Ahrend to prepare a detailed analysis. His findings are summarized in a letter from Mackenzie Engineering delivered to your Staff 22 May 2015 – seven pages plus 147 pages of data/analysis and exhibits. As of this morning, we understand that the Staff has made its recommendations to you and the City Council. (Summary attached as Exhibit 1)

Bottom Line: *While we remain supportive of the entire Bypass Project, we must take every possible action to ensure that the safety of 100's of families, multiple working farms, and several schools along Wilsonville Rd. is not compromised. The impact of funneling Bypass traffic into the City of Wilsonville will also severely impact the intersection at Boones Ferry Rd. and Exit 283 at I-5, both already at capacity. We do not want to see any further delay either with a new TSP amendment and a required review by the Oregon DLCD. If LHNA is unable to achieve a resolution that addresses the issues with the EIS, LHNA will have no alternative but to file suit in Federal Court. The remedy we would be seeking would be a Supplemental EIS. The case could take years to resolve, and if we prevail a Supplemental EIS would need to be prepared.*

The good news is that our traffic engineer specifically found that the 'no-thru design' had, at worse, marginal impact on other Newberg local streets. And, he found that there were much more important problems regarding OR219 that Newberg may want to focus on. We are hopeful that you, your Staff and the City Council will reach the same conclusions and support the

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LHNA Letter to City of Newberg Mayor, dated 17 June 2015

ODOT/LHNA 'no-thru design' for this intersection – without the need for any additional amendment to the City TSP or any delay in completing the implementation of the Phase 1 Bypass.

In conclusion, you said to us 23 April that "this wasn't personal", referring to your stated concerns. For LHNA and its hundreds of members, however, this is very personal – as it directly affects the lives of all those who live on, work on or use Wilsonville Rd. Allowing through traffic in either (or both directions) would also be unacceptable to Yamhill County Commissioners, the City of Wilsonville, Clackamas County Commissioners, and the West Linn-Wilsonville School District. We see a clear path forward to getting the Phase 1 of Bypass built without any significant and adverse impacts in a manner that will allow the parties to avoid litigation, and the significant expense and protracted delays that are often associated with it. We ask you to join us in supporting the 'no-thru design' that has been carefully vetted and approved by ODOT and many others.

If you desire any clarification on the issues raised here, please do not hesitate to contact Stan Halle, Chair of the LHNA Bypass Impact Committee directly at (503) 319-3011.

Sincerely yours,

Cole Presthus, PE, SE
LHNA Co-President, representing Yamhill County

John Freeman
LHNA Co-President, representing Clackamas County

Stan Halle, LHNA Director, Past Co-President, Yamhill County
Chairperson of the Bypass Impact Committee

Attached:

1. *Exhibit I:* Summary Findings and Conclusions from Mackenzie Engineering (Brent Ahrend)
2. Detailed seven page letter from Mackenzie Engineering (Brent Ahrend)

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Mackenzie Engineering Findings & Conclusions – from their 154 page report are summarized below (for convenience):

FINDINGS:

1. "Each of the alternatives analyzed had very little impact on streets in the City of Newberg. In the 'worst case,' traffic volume would increase by a maximum of 4% (most likely 1-2.5%).

2. "The analysis used traffic volumes presented in a July 1, 2013, memo from William Ciz, with 2016 and 2035 PM peak- hour traffic volumes as presented in the Kittelson & Associates (consultants to ODOT) FEIS analysis. Roadway configuration assumptions were taken from Figure 9 of the January 2012 Newberg Dundee Bypass Tier 2 Final Technical Memorandum, and preliminary construction plans provided by ODOT staff in February 2015. Capacity calculations were prepared using Synchro software, although the original FEIS analysis utilized Traffix software. We had requested copies of the original Traffix output from Kittelson and ODOT, but were not provided with them. Despite not having these original calculations, we were able to closely match the lane configurations, volumes and other parameters and followed ODOT's Analysis Procedures Manual.

3. "Based on our analysis, the proposed no-through movement configuration of the intersection of the Phase 1 Bypass at Highway 219 opposite Wilsonville Road **does not result** in any of the intersections to fall below standards at the 2016 opening conditions, and at most would add 50 (peak-hour only) trips to any City street. Based on these findings, there is **no need** for the City of Newberg to amend the City's Transportation System Plan. An amendment was already approved by the Newberg City Council in December 2013 for the purpose of aligning Wilsonville Road opposite the Phase 1 Bypass at Highway 219. At that time, no specific intersection configuration was provided. We note most intersections in the area do not meet standards or are well over capacity in the 2035 analysis scenarios, as presented in the Final EIS for the project. This result does not change with the various scenarios we have reviewed, including the no-through movement design at Wilsonville Road and the Bypass eastern terminus.

4. "During the course of our review, we discovered the FEIS had indicated two southbound through lanes were planned on Highway 219 at the intersection with Springbrook Road, but the current plans only show a single through lane. We verbally notified ODOT staff (Director Matt Garrett, Sonny Chickering. and Tim Potter at the May 15th meeting with LHNA representative, Stan Halle) of this discrepancy and that without a second southbound through lane on Highway 219, the intersection will not meet standards at opening of the Phase 1 Bypass in 2016. For purposes of this analysis we have assumed that two lanes would be provided, consistent with the FEIS."

CONCLUSIONS:

1. "In the 2016 analysis, all of the scenarios show adequate volume-to-capacity ("v/c") ratios for the five key intersections, with the exception of the Wynooski signal scenario, which exceeds the standard at the Highway 219/Bypass intersection.

2. "The proposed no-through movement scenario shows some intersections operating at up to a 4% higher v/c ratio than in ODOT's 'Option 1,' but still operate at acceptable levels in 2016.

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LHNA Letter to City of Newberg Mayor, dated 17 June 2015

3. "Two intersections are anticipated to be over capacity in 2035 under ODOT's 'Option 1' and no-through movement scenarios, specifically the Springbrook intersections with Highway 99W and Fernwood Road. For the other scenarios, three intersections would be over capacity.

4. "The Highway 219/Springbrook Road intersection was analyzed by modeling, specifically: one shared through-right, one through, and one exclusive left turn lane on the southbound approach, yielding a v/c ratio of 0.69. This configuration is consistent with the original plans for the Highway 219/Springbrook Road intersection in the Newberg Dundee Bypass Tier 2 Final Technical Memorandum. In the Tier 2 memorandum, this intersection resulted in a 0.62 v/c ratio under the Phase 1 – Improved scenario. The latest Newberg-Dundee Bypass (Phase 1G) ODOT plans call for one shared through-right and one exclusive left turn lane on the southbound approach. This configuration results in a v/c ratio of 0.92, which exceeds the performance standard of 0.80. It is suggested that ODOT change their plans to match the original Tier 2 plans for the Highway 219/Springbrook Road intersection in order to meet the capacity standard of 0.80. It is also recommended ODOT change their plan at this intersection to the previous Tier 2 configuration since this has already been approved.

"Based on this analysis, it is clear the proposed no-through movement scenario has little impact on the area roads and intersection operation. No intersections will exceed performance standards at opening of the Phase 1 Bypass in 2016. Further, this scenario has less impact than other scenarios (that also have significant added costs), such as the Wynooski signal options with an alignment along Adolf Road. We request the City of Newberg make a finding that no additional amendment to the City's Transportation System Plan is needed for the ODOT/LHNA proposed no-through movement scenario at the intersection of the Phase 1 Bypass at Highway 219 opposite Wilsonville Road. Furthermore, we request that the Newberg City staff go on record as supporting the no-through movement design to mitigate potentially significant impacts on the 12 miles of Wilsonville Road, the City of Wilsonville, four schools, active farms, and I-5 Exit 283.

LHNA Ladd Hill Neighborhood Association

PO Box 2556, Wilsonville, OR 97070

Date: **13 August 2015**

To: **Newberg City Planning Commission Testimony to print**

cc: Yamhill County Commissioners
Yamhill County Parkway Committee Members
State Rep. Bill Post District 25
State Rep. John Davis, District 26
John Ludlow, Clackamas County Commission Chair
Tim Knapp, Mayor City of Wilsonville
West Linn-Wilsonville School District
U.S. Congresswoman Bonamici
Karmen Fore, Governor Brown's Sustainable Communities & Transportation Advisor
Governor Kate Brown

Re: **Newberg-Dundee Bypass – Testimony to the Newberg City Planning Commission (NCPC)**

It is our understanding that ODOT is drafting another amendment to Newberg's TSP that will come before this body by your next meeting. As the community association representing many 100's of families, working farms, and other businesses utilizing Wilsonville Rd. (LHNA), we are providing NCPC this letter to:

a. Give you with a thumbnail sketch of relevant history and the immediate and real public safety issue we are all facing;
b. Inform you of the broad coalition of jurisdictions and representatives supporting the resolution of said public safety issue; and
c. Inform you as to where the LHNA stands and what actions we are considering.

Quick Historical Recap – At the Dec 2013 Newberg City Council meeting a vote was taken on a critical amendment to the City's TSP (Ordinance 2013-2766) which allowed the Bypass to end directly across from a local connector street, namely, Wilsonville Rd. (at OR219). The LHNA submitted both written and verbal testimony against the reconfiguration claiming that this already unsafe road could not withstand significant additional traffic. In their documents and at the meeting, ODOT officials claimed that their "modeling and analysis showed no impact, …". Working with a professional traffic engineer (Mackenzie Engineering), LHNA later proved that this assertion was misleading and not applicable to Wilsonville Road. **ODOT has since admitted that it did not analyze the impact on Wilsonville Rd.** ODOT Project Leader, Kelly Amador, further testified that any change to this 'thru-thru' configuration would cost in excess of $2 million and delay the overall Bypass by 18+ months without any substantiation. On

these verbal comments alone, the City Council voted 6 in favor and 1 against, thereby passing this amendment.

LHNA using Mackenzie Engineering spent the next 12 months conducting its own analysis, resulting in the discovery of significant gaps and new information that were missing from the Final EIS prepared for the Bypass. LHNA determined that it could bring legal action to require ODOT & the FHWA to prepare a Supplemental EIS. In order to avoid litigation, we sent a letter dated 16 January 2015 to ODOT Director Garrett and FHWA Regional Manager Ditzler with all the information we had gathered and asked ODOT to come to the table and work in good faith to resolve the issues. Mayor Andrews was cc'd on this letter.

ODOT responded within a few days and opened the door to substantive and productive discussions with LHNA and its traffic engineer, resulting in a jointly designed solution that would meet ODOT's criteria:

a. Falling well within the existing Bypass budget and schedule;
b. Not changing the right-of-way footprint; and
c. Not requiring any additional environmental permitting.

This solution was a 'no-thru intersection design' that was initially proposed to LHNA by ODOT and worked on extensively by both ODOT engineers and LHNA's engineer. The design was reviewed and approved by the State Traffic Roadway & Traffic Engineer, Bob Pappe, mid-March 2015.

The only actions remaining to incorporate this 'no-thru' design are to:

1. Align Newberg's TSP with the bid package ODOT is preparing, via an amendment being drafted by ODOT now, that also would include additional changes in lane configurations unrelated to the subject intersection; and
2. Change ODOT's bid package <u>now</u> to incorporate the 'no-thru' design.

At the April meeting of the Yamhill County Parkway Committee, Mayor Andrews expressed several concerns about the 'no-thru design' of the intersection of the Bypass & Wilsonville Rd. (at OR219):

a. Would police or fire emergency vehicles be able to cross OR219 either westbound or eastbound?
b. What would the impact be on other local Newberg streets, e.g., East 2nd Street between OR219 and Springbrook, or on 99W in Newberg city center?

LHNA and ODOT have responded to these valid concerns. For example, the configuration of the intersection was confirmed by ODOT, in fact, to allow for emergency vehicles to pass in both directions. Our traffic engineer determined that the impact on local Newberg streets would be somewhere between 2-4%. We also explained that leaving the current design of a thru-thru intersection of the Newberg-Dundee Bypass and Wilsonville Rd. (at OR219) would result in significant immediate and real impact on public safety along the 12-plus miles of Wilsonville Rd, which is already a dangerous rural road.

Mayor Andrews asked us to meet with Newberg Staff to discuss these concerns in greater detail. We did so on 23 April and again 2 July 2015 along with our traffic engineer, Brent Ahrend. Attending both meetings: Kaaren Hofmann and Douglas Rux; Jessica Nunley Pelz from Newberg Staff, along with Tim Potter and Kelly Amador from ODOT (who only attended the April meeting).

LHNA Letter to Newberg City Planning Commission, dated 13 August 2015 **3**

As a result of the April meeting and the questions/concerns raised by Newberg Staff, we asked Brent Ahrend to prepare a detailed analysis. His findings were summarized in a letter from Mackenzie Engineering delivered to Newberg Staff 22 May 2015 – seven pages plus 147 pages of data/analysis and exhibits. (Summary attached as Exhibit 1).

On 24 June 2015, Newberg Staff sent a letter to ODOT Director, Matt Garrett saying that the City could not support the 'no-thru' design. They went further stating that "no documentation has been provided to show 'significant impact' to Wilsonville Rd." This is essentially testimony by the City of Newberg that ODOT violated NEPA, which it has. Federal law assigns the responsibility to assess impacts to any such government agency that runs a project spending Federal funds. It was ODOT's job to assess impact on Wilsonville Road, and we submit that ODOT's deceptive statements about nonexistent 'modeling' have been an attempt to conceal ODOTs failure both to assess impacts on Wilsonville Rd. and comply with NEPA. Newberg's Staff statement was also a misdirection to blame LHNA about the real issue – that is, ODOT/FHWA violated NEPA. This is precisely what we discovered at the end of 2014 when ODOT modeling staff and Kittleson (ODOT's analysis contractors) admitted to LHNA's traffic engineer that the available traffic modeling and data could not address potential impacts to Wilsonville Rd. with the Phase 1 Bypass alignment as proposed.

Newberg has suggested to ODOT that Wilsonville Rd. be left at its current alignment, but limited to right-in, right-out only. This option is a nonstarter, since it places Wilsonville Rd. in the direct path of northbound overflow traffic as Springbrook becomes clogged with Bypass traffic. This is just one more indication to us that Newberg sees Wilsonville Rd as the relief valve for an overall incomplete Bypass Phase 1 design that impacts local City Streets (Springbrook). In this vein, Mayor Andrews has repeatedly referred to Wilsonville Rd. as Wilsonville Highway.

We've also been asked about a 'partial thru' option (allowing westbound traffic only from Wilsonville Rd. to the Bypass, while preventing eastbound flow). This option would result in 40-50% of the overall public safety problem along Wilsonville Rd. and also encourage traffic from I-5, I-205 and elsewhere to go thru Wilsonville heading to the Bypass. Matt Garrett suggested this 'partial thru' as a so-called compromise with a 'commitment' to monitor traffic after it was built and mitigate any problems. LHNA's response to Garrett was: "given the analysis provided by Mackenzie Engineering that shows no more than a 4% impact on local streets by the 'no-thru' option, why not build the 'no-thru', monitor and make corrections later if needed? We find it disturbing that ODOT seemed willing to change their bid package to accommodate a 'partial-thru' design but not the 'no-thru' design – proof that it can be changed. All it needs is a priority from the front office at ODOT!

It is important that the greater good be served here. We are speaking about the investment of over $260m in State and Federal funds that directly benefit Newberg (and Dundee). Building a 'thru-thru' intersection that turns Wilsonville Rd. into a de facto extension of the Bypass is unconscionable. With over 200 driveways and side streets, few shoulders, four schools, six-plus active farms (both sides) and is already a dangerous, albeit scenic, rural road. A coalition of Yamhill County & Clackamas County Commissioners, the City of Wilsonville, the West Linn-Wilsonville School District (along with the LHNA) will not sit idly by and watch one City's concern about a few more cars on local streets overshadow the immediate and real public safety & capacity concerns along 12-plus miles of road in multiple jurisdictions.

Bottom Line: *While we remain supportive of the entire Bypass Project, this coalition will take every possible action to ensure that the safety of Wilsonville Rd. is not compromised. The impact of funneling Bypass traffic into the City of Wilsonville will also severely impact the intersection at Boones Ferry Rd. and Exit 283 at I-5, both already at capacity. If it becomes*

necessary for a Federal Judge to force a resolution that addresses the issues with the EIS, the case could take years to resolve. The good news is this situation is absolutely avoidable since there is no sound reason for this public safety issue to exist.

Our traffic engineer specifically found that the 'no-thru design' had, at worse, marginal impact on other Newberg local streets and was the best alternative among all those analyzed. And, he found that there were more important problems regarding OR219 that Newberg may want to focus on. We are hopeful that the Newberg City Planning Commission and the City Council will reach the same conclusions and support the jointly developed ODOT/LHNA 'no-thru design' for this intersection – without any delay in completing the implementation of this important Bypass Phase 1 Project.

In conclusion, Mayor Andrew's said to us on 23 April that "this wasn't personal", referring to his stated concerns. For the many 1,000's of coalition families, however, this is very personal – as it directly affects the lives of all those who live on, work on or use Wilsonville Rd. Allowing through traffic in either (or both directions) is unacceptable to Yamhill County Commissioners, the City of Wilsonville, Clackamas County Commissioners, and the West Linn-Wilsonville School District. We see a clear path forward to getting Phase 1 of the Bypass built without any significant and adverse impact in a manner that will allow the parties to avoid litigation, along with the significant expense and protracted delays that are often associated with it. We ask you to join the Region in supporting the 'no-thru design' that has been carefully vetted and approved by ODOT and many others.

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5.06
1 of 3

Declaration of Cole G. Presthus

1. I, Cole Presthus, am at least 18 years of age and I make this statement based on my personal knowledge.

2. I am a local resident that regularly uses Wilsonville Rd. I live at 7045 N.E. Earlwood Rd., Newberg, Oregon 97132.

3. I am an Oregon registered professional and structural engineer. I received my education at Cal Poly San Luis Obispo, CA. I have worked in Oregon as a private consulting engineer for 37 years. I have worked the last 25 years at WDY Engineers, Inc. in Portland Or. I make this statement personally, and not on behalf of my employer or any particular client. I am a volunteer officer of the Ladd Hill Neighborhood Association (LHNA).

4. I make this declaration to set forth the contents of a conversation I had with Tim Potter at the Oregon Dept of Transportation ("ODOT") Open House Public Meeting in City of Newberg on June 12, 2013. I attended the ODOT Informational Open House Meeting held in the city of Newberg for the proposed Dundee-Newberg Hwy 99 By-Pass project. The open house was hosted by ODOT staff and was open to the public. ODOT staff had several large display boards of various maps and plans were on stands and tables around the room for viewing.

5. I attended the ODOT open house on June 12, 2013 so I could ask ODOT staff for more information about the planned 4-way intersection at Hwy 219 with the east end of the By-Pass and Wilsonville Rd.

6. As a resident of Yamhill County, living east of the city of Newberg, I was concerned about the potential traffic volume increase on Wilsonville Rd. as that is the access route to my neighborhood to and from Newberg.

7. Several weeks earlier I had seen on the ODOT website a map of the By-Pass that showed a close-up view of the proposed 4-way intersection of Hwy 219 with the east end of the By-Pass and Wilsonville Rd. I was immediately struck by the fact that the end of the Hwy By-Pass route was aligned directly with the proposed re-location of the beginning of the west end of Wilsonville Rd.

8. I was very concerned that Wilsonville Rd would become the de-facto extension of the new Hwy

5.06
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DECLARATION OF COLE PRESTHUS

By-Pass for people who desire to travel east toward the southern Portland Metro area including Lake Oswego, West Linn, Oregon City, Milwaukie, Clackamas and communities further east. I wanted to ask ODOT staff what their thoughts were regarding the potential increase in traffic to Wilsonville Rd.

9. As I was reviewing one of the maps I started talking with a gentleman standing at the same map about my concerns. I stated my observation and complaint that Wilsonville Rd would became the defacto extension of the new Hwy By-Pass for traffic desiring to reach the southern and eastern Portland Metro area. I then stated that I needed to find one of the ODOT Traffic Engineers so I can talk about my concern. The man replied and said, "Well, actually I'm the one you want to talk with as I'm the ODOT Regional Manager" and he introduced himself, Tim Potter, to me at that time.

10. I re-iterated my concern that with this proposed re-location of Wilsonville Rd. it seemed very obvious to me that Wilsonville Rd would become the extention of the By-Pass Route whether it was planned or not. Tim responded that the traffic that would have traveled north and east through Newberg on the existing Hwy 99 route would want to turn north on Hwy 219 to get back on the existing Hwy 99 route as it leaves the N.E. end of Newberg.

11. I pointed out that because the new By-Pass routes people well to the south (approximately 1 mile) of the existing Hwy 99 route it would present drivers with new choices on how to get to the Portland Metro area. I pointed out that to get back on the existing Hwy 99 route heading to Sherwood, people would have to drive up Springbrook Rd through new traffic signals just to reach existing Hwy 99 and then still have to go through several more traffic signals just to get out of the Newberg city limits.

12. I contended that if drivers were presented with Wilsonville Rd directly in front of them, many drivers would choose to go straight thru the signal at Hwy 219 and take Wilsonville Rd all the way into Wilsonville to connect with I-5 there.

13. I told Tim that I thought many drivers would make the choice to use Wilsonville Road.

14. I asked him if he had ever driven Wilsonville Rd and if he was aware of the country nature of the road with all its sharp turns, elevation changes and narrowness that would pose a danger to drivers, especially commuters and travelers, just trying to make time to get to Interstate Hwy 5 as quickly as possible.

5.06
3 of 3

DECLARATION OF COLE PRESTHUS

15. After going back and forth several times quite animatedly in this discussion with Tim Potter with each of us making our points, he finally physically let his shoulders down and admitted that ODOT had not considered or thought at all on what the traffic volume impact might be on Wilsonville Rd as a result of the proposed 4-way intersection at Hwy 219 with the east end of the new Hwy By-Pass aligned with the beginning of the west end of Wilsonville Rd.

16. After Tim's statement admitting that ODOT had not considered what traffic volume impact might occur to Wilsonville Rd our conversation became much more relaxed and was joined in by Kelly Amador, the ODOT By-Pass project manager, and John Freeman, Co-President of the Ladd Hill Neighborhood Association (LHNA) who was also at the ODOT open house.

17. Kelly Amador suggested that ODOT could have their design consultant look at their traffic modeling to determine what traffic volume impact there might be to Wilsonville Rd.

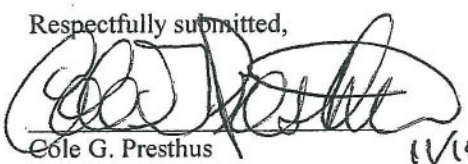
18. John Freeman and I asked Kelly Amador if she could come to one of our LHNA meetings and give a brief overview presentation of the By-Pass project to our members and also bring the large plan displays so members could see the overall project and ask questions.

19. Kelly Amador asked if she should wait to come until after the traffic evaluation of Wilsonville Rd. was done. I said "No, please come to our neighborhood meeting as soon as you can to present an overview of the project".

20. John Freeman suggested Kelly Amador could attend a follow-up meeting later once the traffic evaluation was completed. So Kelly Amador came to our next scheduled neighborhood meeting later that month on June 19, 2013 and presented an overview of the By-Pass project. Kelly Amador also attended a later Sept 18, 2013 LHNA meeting with Tim Potter to present the results of the traffic evaluation of Wilsonville Rd.

I swear under penalty of perjury that the foregoing statement is correct to the best of my knowledge.

Respectfully submitted,



11/18/2015

Cole G. Presthus
7045 NE Earlwood Rd.
Newberg, Oregon 97132

6.01
1 of 2

December 2, 2002

Jim Cox, Interim Manager, Environmental Project Management Unit
ODOT
1158 Chemeketa St, NE
Salem, Oregon 97301

Dear Jim/Project Oversight Steering Team,

This letter is to provide input to the Project Oversight Steering Team regarding the placement of the proposed Newberg/Dundee Bypass. These comments come from the Ladd Hill Neighborhood Association.

The Ladd Hill Neighborhood Assn. is an organization of homeowners living north of the Willamette River, in the rural countryside approximately 5 miles east and west from the Clackamas County/Yamhill County border, and going inland from the river approximately 3 miles. The Clackamas County side of the organization is officially sanctioned by Clackamas County as the Ladd Hill Community Planning Organization (CPO). Yamhill County has no corresponding rural (CPO) organizational structure.

Our comments regarding this bypass focus mainly on the impact such a new highway will have on Wilsonville Road, and the additional traffic on Wilsonville Road by Newberg/Dundee Bypass users as a shortcut, or link, between I-5 and Hwy 99. We are especially concerned with alternatives 3G, 3H, 3I, and 3J, as each of these plans create a major interchange at the intersection of Oregon 219 and Wilsonville Road.

Wilsonville Road is a rural, two-lane road running from Oregon 219 north and east about 12 miles to the city of Wilsonville. Wilsonville Road is the primary east-west artery through our neighborhood.

Wilsonville road, while scenic (it is one of only about 15 designated "scenic roads" in Clackamas County) has many places with poor visibility, frequent areas with narrow-to-no shoulders, and several turns so tight that both Yamhill and Clackamas Counties have posted "No Through Trucking, Local Trucks Only" signs at either end of the road to prohibit commercial trucks attempting to use the road as a connector between I-5 and Hwy 99. Further recognition of the danger and circumstances of Wilsonville Road is the fact that four years ago the official allowable traffic speed on the road was *reduced* to 45 miles per hour.

Wilsonville Road runs through prime farmland and is frequently utilized by farmers on slow tractors and trucks. It is also the location of numerous horse farms with their attendant slow-moving horse trailers. Additionally, because of its designation as a scenic road, Wilsonville Road is often used by bicyclists and slow-driving tourists. All of these are reasons that Clackamas County recognizes Wilsonville Road on a short list of 'most dangerous roads' in the county. Within the last 4 months alone, three separate accidents have resulted in two deaths and one more near-fatality.

Should any of Alternatives 3G, 3H, 3I, or 3J become the final plan, massive increases in traffic on the road will occur as people attempt to connect from I-5 to 99, and vice-versa. These drivers will be taking Wilsonville Road as a shortcut, in order to save time. This doubtless means they will be driving fast and that they will be unfamiliar with the road and its dangers. This increased traffic volume will create serious transportation safety problems, will negatively affect local livelihoods, and will degrade quality of life in the neighborhood.

6.01
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Recommendations

From this point of view, then, and after studying the Draft EIS and having attended the Newberg meeting on Oct. 22, we recommend that none of the eight alternatives provide the best resolution of the serious traffic problem on Hwy 99 from east of Newberg to west of Dundee. Instead, we recommend the following:

1. A plan that has been discussed but was not included in the EIS statement. This plan calls for the direct connecting of McMinnville with I-5 via the existing Donald exit at I-5. This connection would run west from Donald, require a new bridge across the Willamette River, and then tie into Hwy 99 west of Dundee. With this connector, the bulk of through-traffic currently snarling Hwy 99 through Newberg and Dundee -- traffic destined for the coast or for McMinnville - would take the faster, safer route on I-5. While this route requires the building of a new bridge over the river, it eliminates the need for the costly and disruptive bypass through the urban areas of Newberg and Dundee.
2. A second alternative we suggest is also not on the list of eight alternatives in the EIS. This recommendation calls for revising Alternative 3I by removing the interchange at Hwy 219. Instead of having traffic flow to 219 through this second interchange, a short connector from the proposed first interchange of 3I (from the Newberg/East end of the Bypass) down to 219 near the airpark would provide the necessary traffic hook-up. This plan has the advantage of being less expensive (one less interchange to build) and of reducing the possibility that traffic will route back to Wilsonville Road to get across to I-5.

Failing either of these options, our third choice is options 3C, 3D or 4C, as these are: a) the least likely to cause major problems on Wilsonville Road; b) allow limited access to Newberg and Dundee; and c) provide smooth traffic flow around the urban cores.

Thank you for your considerations, and please keep us informed of any and all future actions in regards to the Bypass.

Sincerely,

Dave Leckey

The Ladd Hill Neighborhood Assn, Newberg/Dundee Bypass Subcommittee
Dave Leckey, Chairman
Ben Bole
Paul McMahon
Raul Parez

Return address:
Dave Leckey
34430 SW South Ranch Rd.
Newberg, Oregon 97132
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7425 N.E. Earlwood Rd.
Newberg, Oregon 97132
December 16, 2002

Mr. Jim Cox, Interim Manager
Environmental Project Management Unit
Environmental Services
Oregon Department of Transportation
1158 Chemeketa St., N.E.
Salem, Or 97301

Dear Mr. Cox:

My comments on the Draft Environmental Impact Statement (DEIS) on the Newberg-Dundee Transportation Improvement Project (Key No. 09320) follow.

Cumulative Impacts not addressed.
The DEIS fails to address Cumulative Impacts from the proposed alternatives, as I thought was required under the National Environmental Policy Act (NEPA). The DEIS focuses its concentration on Newberg, Dundee, and Rts. 99 and 219. It does not address concerns expressed at the July public meeting by representatives of the Ladd Hill Community Planning Organization (representing the residents of the south and east sides of Parrett Mt. and beside the Willamette River from near the Wilsonville city limits to approximately 5 miles west of the Yamhill Co. line). Specifically, concerns for increased use of Wilsonville Road between the southern by-pass and I-5 by commuters, tourists, and locals south and east of Portland. Wilsonville road is already one of the most dangerous roads in Clackamas County. I believe that it holds a scenic by-way designation. Neither Yamhill nor Clackamas County budgets allow adequate patrolling for traffic violations. Despite posting of "no thru trucks", "45 mph", and intersection signs, these laws and warnings are commonly ignored. With an interchange at Rt. 219 on the by-pass, I would expect increased pressure to allow thru truck use, including semis, connecting I-5 and the bypass via Wilsonville Road. Such a possibility exacerbates safety problems due to the dangerous curves and excessive speeds.

At the July public meeting in personal conversations, the DEIS "officials" expressed that they did not think these concerns would be realized. Yet, the DEIS does not present any data addressing or analyzing the proposed problem. It seems that this should be part of the Cumulative Impacts of the project. Studies of land use change along Wilsonville Road and its feeder roads, and traffic use (historical trends, present, and future estimates) of this road should be addressed with Clackamas and Yamhill Counties and presented well in the Final EIS.

I did not find a satisfactory analysis of the range of expectable development facilitated by the interchanges. It seems reasonable to think that land along collector roads feeding interchanges will see an increase in, at least, residential development. Although the DEIS says (p. 2-8) that DOT will encourage development to remain within existing urban

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growth boundaries, there is no reason to believe that DOT's "encouragement" will outweigh pressure on local government by developers. Without some stronger commitment to preclude expansion of the urban growth boundary, I think that cumulative impacts from such increases need to be analyzed. Such increases can make for traffic problems on the by-pass within a few years after it is completed, not to mention impacts to existing residents and land owners.

Willamette Greenway Ordinance. There is no mention of compliance with the Yamhill Co. Willamette Greenway Ordinance (Zoning Ordinance 902). This can be an issue especially considering cumulative impacts.

Broader coordination needed. In the listing of transportation projects (page 1-5) there is no mention of projects planned by Wilsonville or in the vicinity of I-5 and the Wilsonville area. Land use changes and traffic associated with projects at these two ends of Wilsonville Road will likely have a synergistic effect. Advance coordination between the By-pass planning effort, the City of Wilsonville, Clackamas Co, and any ODOT staff addressing I-5 changes at Wilsonville would provide for an improved transportation network with cost savings to the taxpayers.

Storm Water and Floodplains inadequately considered. I found these sections (pp. 4-44 through 4-46) unrelated and seriously deficient. The storm water section merely presented calculations of increased paved surface but did not address the range of increase of storm water from the paved surface. It failed to address impacts to the local streams receiving such storm water as well as the cumulative impacts to flood conditions. The Floodplains section discussed the present 100-yr. and 500-yr. floodplains. However, there was no analysis of floodplain changes or what could be affected by increased storm flows due to the increase of impervious surface of the bypass. Nor did it address the likely increase in impervious surface in developments facilitated by the presence of the by-pass. It would seem that the unexpected flood damage in Tualatin in the 1996 flood was because the increased impervious surface areas were not periodically reviewed and analyzed for the affect on floodplains and the carrying capacity of the local streams. I think the EIS should do a more comprehensive and cumulative analysis of the impacts of the by-pass on flooding.

Threatened and Endangered Plants inadequately presented. Page 3-42 ("the reconnaissance") indicates that only one survey was done for rare plants, yet it lists species which are identifiable at widely different times. Further, no date was given for this single survey, so the public has no indication of its effectiveness. In the Final EIS, please provide the dates of survey, the target species, and a brief discussion of suitable habitat found, as well as the size and quality of any populations found.

Recommendation. I would prefer none of the given alternatives. Alternatives connecting I-5 to Rt. 18, such as withdrawn Alternatives 2 A and B would be preferred.

Given my concerns about quality of life, wetlands, wildlife, noise, social justice, traffic pattern changes, and cost, as well as addressing the existing traffic problems (which do

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need to be changed), Alternative 3J, with modification, seems to be the more reasonable of those presented. My three problems with it are: 1) the high amount of agricultural land to be utilized, 2) cumulative impacts on lands presently zoned agricultural or rural residential in areas that can be made accessible to the by-pass , and 3) likely increases in traffic on Wilsonville Road. I don't know how to address the first concern. Addressing concern 2, a binding agreement, ordinance, or law associated with funding the by-pass project could be prepared to preclude changes in zoning and the Urban Growth Boundary within a certain distance (3 or 5 miles?) of the by-pass. The third concern can be addressed by configuring the interchange to preclude access to the bypass to/ from Wilsonville Rd. at the interchange connecting Rts. 219 and 99.

Thank you for the opportunity to comment.

Sincerely,

Cheryl McCaffrey

6.0
1 of 2

John C. Freeman
29090 Heater Road
Sherwood, OR 97140
503-625-1732

November 14, 2013

City of Newberg
Mayor Andrews
City Council Members

Re: Transportation System Plan for Phase 1 of the By-Pass

Dear Mayor and Council Members,

I am the President of a Clackamas County CPO, which goes by the name of Ladd Hill Neighborhood Association (LHNA). Our area is comprised of both Clackamas County residents and Yamhill County residents, and so we also have a Yamhill County President, Stan Halle. Our area encompasses more than 300 homes, from the Willamette River on the South, to Parrett Mtn Road on the North, Bell Road on the East and about 2-3 miles West of Ladd Hill Road on the West.

I offered public testimony at your November 4th meeting regarding the By-Pass project.

As I previously commented, we are in favor of the By-Pass project.....we do not object to the project.....we support the project.

We only object to the tremendous increase in traffic on Wilsonville Road, which will result should the planned alignment of the East end of the By-Pass connect directly to the West end of Wilsonville Road. There are no plans at ODOT to fund and construct Phase 2 of the By-Pass during the next 20 years, so any decision made will have a long-term impact.

The LHNA first met with ODOT in June of 2013, when we discovered that all of the input which we provided 10 years ago into the design of the project was forgotten and/or being ignored. As a result of the June Meeting, ODOT responded with a copy of the attached Memorandum dated July 1, 2013 wherein William Criz provides a Summary of a Traffic Study showing that traffic will not increase on Wilsonville Road.

We believed that the conclusion of no increase in traffic on Wilsonville Road was illogical and un-believable, so the LHNA hired a very respected engineering firm, MacKenzie Company, to meet with the consultants which ODOT hired to conduct their traffic analysis. We asked MacKenzie to review the analysis which was done on behalf of ODOT, and advise us if the assumptions and conclusions were reasonable. Brent Ahrend, a traffic engineer with MacKenzie met first with Bill Criz of Parametrix, and then had a meeting with the project representatives at Kittelson Associates. Kittelson did the actual traffic studies. Attached is the Review Report from MacKenzie, dated November 14, 2013.

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MacKenzie found that the data and conclusions provided to the LHNA were based on data assuming that the Wilsonville Road western terminus would be un-changed from the actual configuration that exists today; ie, the study was based on Wilsonville Road terminating into Springbrook Road. ODOT did no traffic analysis based upon Wilsonville Road being a defacto extension of the By-Pass, as they have illustrated in the drawings as proposed to the City of Newberg. So, ODOT's contention that traffic would not increase on Wilsonville Road is bogus. They do not know there would be no increase, because they never commissioned a study to evaluate it!

Furthermore, at your November 4th Council Meeting which we attended, Kelly Amador of ODOT advised you that to make the following two changes, would delay the overall project:

1. Change the configuration of Wilsonville Road to meet up with Wynooski Road.
2. Change the By-Pass to cross Highway 219, and turn directly into the Southern end of Springbrook Road.

We believe that her comment that it would delay the overall project is mis-leading, just as she attempted to mis-lead the LHNA with respect to future Wilsonville Road traffic.

Kelly advised you at the November 4th Council Meeting that the Contract for the Improvements on Springbrook Road and the Improvements along Highway 219 would happen in 2015. If that contract is going to be bid and signed in 2015, ODOT has 12 to 18 months to make the two relatively minor changes that we are requesting. That certainly will not delay the overall project. And, the overall cost of the project should not be significantly impacted because they save the cost ($500,000 or more?) of a second traffic signal and intersection.

Changing the Wilsonville Road connection to Highway 219 will alleviate all traffic considerations on Wilsonville Road, and the City of Wilsonville.

Changing the connection between the By-Pass and Springbrook Road will make the traffic flow on and off those two roads much easier, and Eastbound By-Pass traffic will be less inclined to be mis-directed North on Highway 219 back into Newberg.

So we ask please, in your final deliberations and approval of the Transportation System Plan for Phase 1 of the By-Pass, please make your approval contingent upon ODOT's agreement to implement these 2 changes to the plan.

Thank you for your time and consideration,

John Freeman
Co-President
Ladd Hill Neighborhood Associaton

TSP Amendment – Feedback
(ODOT-FHWA-LHNA Meeting 24 Aug 2015)

1. **Overall:** this Draft TSP Amendment represents a solid effort to move forward with the 'no-thru' design. It is an essential, but not sufficient step in resolving a significant public safety issue.
2. **Background Paragraph 2:**
   a. *'... LHNA believes ...'* – This should read: *' ... Yamhill County, Clackamas County, the City of Wilsonville, the West Linn-Wilsonville School District, and the LHNA all believe ...'* ODOT has been aware of this broader 'coalition' of jurisdictions for months.
   b. The last sentence is factually WRONG. It continues to echo the misrepresentation made numerous times publically that *"Our modeling and analysis show little or no impact on Wilsonville Road."* We have several direct statements made by Tim Potter, ODOT model support staff, and ODOT's Bypass Consultants (Kittleson) that the model was insufficient and unable to determine the impact on Wilsonville Road. When Phase 1 plans were modified to realign Wilsonville Road across from the eastern terminus of the Bypass, after the FEIS-ROD was signed June 2012 by the FHWA, no Supplemental EIS was generated. It was discovered by our traffic engineer that the model being utilized for the Bypass analysis was inadequate. This is the NEPA violation we notified ODOT about at least a year ago. Since we are not aware of any additional analysis, we suggest either:
      i. Deleting 'Wilsonville Road' from the last sentence; or
      ii. Deleting the entire last sentence.
3. **Goal 1 (Citizen Involvement)** – We would argue that this goal was not met due to limited or no participation by several jurisdictions that would have immediate and real impact if the 'thru-thru' design were implemented in Phase 1 construction. Namely: Clackamas County, Wilsonville, & the West Linn-Wilsonville School District.
4. **Goal 2 (Land Use) 2nd paragraph** – *"Part I also required coordination with affected governments and agencies, evaluation of alternatives and an adequate factual base."* Here is another example of the above jurisdictions being left out of the discussions to mitigate the immediate and real impact on public safety. Also, this amendment (as was the previous amendment), is a land use change, and, therefore, comes under the jurisdiction of LUBA.
5. **Goal 6 (Air, Water & Land Resources Quality)** – what about the immediate failures of intersections at Springbrook Rd./99W as well as Fernwood/2nd St./Springbrook Rd.?
6. **Goal 12 (Transportation)** – same point as Goal 2. Also what does this mean: *"... the Wilsonville Rd. intersection reflect final design decisions that are necessary to address traffic operation and safety to implement Phase1G of the project."*
7. **Bottom Line:**
   a. We've always supported the Bypass – and have worked hard to make sure it benefits the whole region, not just one jurisdiction.
   b. We appreciate ODOT's effort to implement the 'no-thru' design. The key next step is to change the construction drawings in the bid package so that it will be ready when the TSP amendment passes, without impacting the Phase 1 Bypass schedule.
   c. This is an opportunity for Newberg's Mayor & City Council to be true statesmen – embracing the 'no-thru' design as the best option for the Region.

Provided to the House Transportation & Economic Development Committee on Sept. 30, 2015

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Newberg-Dundee Bypass – UPDATE 2015-09-29 (Revised)
(prepared by the Ladd Hill Neighborhood Assoc. "LHNA" Bypass Impact Committee)

BOTTOM LINE UPFRONT

There is a significant inter-jurisdictional issue that has emerged between the City of Newberg and several surrounding counties, cities and schools being directly impacted by the current design of the Phase 1 Bypass.

- Newberg is acting independently using their Comprehensive Plan (Transportation System Plan, specifically) to hold ODOT hostage by moving toward rejecting a TSP Amendment that ODOT needs passed in order to:
  - Avoid making Wilsonville Rd. the de facto extension of the Bypass as a short-cut to and from I-5;
  - Align Newberg's TSP with ODOT's current bid package and planned change order re this disputed intersection; and
  - Resolve a potential NEPA violation, which otherwise, may result in a Federal District Court ruling that requires a Supplement EIS be prepared at significant cost and delay.
- Newberg's impending action runs counter to the public safety goals (and traffic congestion) in the Comprehensive Plans of the City of Wilsonville, Clackamas and Yamhill Counties, etc.

We ask the HTED to identify the pathway it recommends to resolve this inter-jurisdictional issue.

RELEVANT HISTORY

Newberg has jurisdiction over, and is responsible for public safety on, a few 100 yards of Wilsonville Road versus Yamhill County, which has 6+ miles, Clackamas County another 6+ miles and City of Wilsonville over 1.5 miles (OR219 to I-5).

- ODOT's engineering staff worked with LHNA's traffic engineer from Mackenzie Engineering over a period of four months to design the 'no-thru' option. It was approved by Bob Pappe', ODOT's top State Roadway & Traffic Engineer. This design meets ODOT's criteria: (a) staying within budget & schedule, (b) using the same right-of-way footprint, (c) technically sound, and (d) not requiring any new environmental permits.
- ODOT and LHNA have responded to the specific concerns Mayor Andrews has expressed with respect to ODOT's no-thru design:
  - *Keeping spillover traffic to a minimum on a few local streets.* City staff were provided a 154 page report that shows at most a 2-4% increase, (according to a credible engineering study commissioned in response to Newberg's concern).
  - *Public safety vehicle movement.* Communication with police and fire revealed this was a non-issue, since all emergency vehicles have a traffic signal over-ride that would allow them to cross OR219 in either direction.
- ODOT Director Garrett has personally committed to Mayor Andrews that ODOT will monitor and mitigate any presently unknown and unpredicted impacts from the no-thru design after the Bypass opens. This commitment is specifically written into ODOT's proposed TSP Amendment.

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CURRENT SITUATION

- Mayor Andrews is now saying that *"If it's only 2-4% increase on local streets, why isn't it the same marginal increase for Wilsonville Rd. if the 'through-through' design were to be built?"*
    - Mackenzie Engineering did an extensive analysis, based on the available traffic volume data provided by ODOT and their consultants (Kittelson and Parametric). This analysis showed that the 'no-thru' design had at most, a 2-4% impact on local Newberg Streets, meaning a maximum of 25 additional cars per peak hour – less than one every two minutes. In fact, it was the best alternative evaluated (from the list given to ODOT & LHNA by Newberg Staff). In addition, the no-thru design *actually improves* the efficiency of the Bypass traffic flow in both directions – primarily because there is more time from a signal sequence perspective for traffic to flow to/from Springbrook Rd.
    - The major immediate & real impact on Wilsonville Rd. (e.g., many 100's of vehicles/hour) would come from the significant diversion of eastbound traffic that should be using Springbrook Rd. back to 99W. And more & more westbound thru-traffic & commuters, etc. would also choose Wilsonville Rd. as a short-cut ***to I-5*** rather than the intended use of 99W/Springbrook Rd.
- *BOTTOM LINE: Wilsonville Rd. is a winding, unsafe, rural scenic road that must NOT become a de facto extension of the Bypass. This is a major public safety threat.*
- Without any substantiation of his latest concerns regarding the no-thru design, Mayor Andrews has positioned the City of Newberg as being unreasonable and selfish. In the process, he has placed the City at odds with the following, each of which strongly support the no-thru design (aka 'Coalition'):
    - Director of ODOT, Matt Garrett;
    - St. Rep. John Davis, (R. Wilsonville) and Vice-Chair, House Committee on Transportation & Economic Development;
    - Office of Gov. Kate Brown
    - Clackamas County Commissioners
    - 2 of 3 Yamhill County Commissioners
    - City of Wilsonville
    - West Linn/Wilsonville School District
    - Congresswoman Bonamici
- All of these leaders have major concerns with public safety on an already unsafe road, utterly unsuited for taking any significant part of 99W traffic.
- Newberg is the big winner from a $192 million state investment (2009 JTA), yet Mayor Andrews conveys the impression of indifference to the legitimate concerns of neighboring local governments, each of which benefit far less (if at all) than Newberg from the Phase 1 Bypass.
- Clackamas County's, the City of Wilsonville's and the West Linn-Wilsonville School District's concerns with public safety is longstanding. Those concerns were heightened once it became clear that: (a) ODOT was planning to realign Wilsonville Rd. to be directly across from the eastern end of the Bypass; (b) had not done sufficient (and required) analysis or modeling on Wilsonville Road; and (c) ODOT was flying blind with respect to traffic increases on an already unsafe road.
- ODOT and the FHWA realize:
    - Because of the inadequate assessment of the impacts on Wilsonville Road,

ODOT/FHWA likely has violated the National Environmental Policy Act (NEPA). This means that the Bypass (where it terminates at OR219 and Wilsonville Road) is subject to an immediate injunction issued by a U.S. District Court Judge, i.e. up to a 4-year delay, 2 for litigation and appeals, and 2 to prepare a Supplemental EIS;

- There are also grounds for a Land Use Board of Appeals ('LUBA') action should Newberg City Council ('NCC') decide to reject the no-thru design, another significant and completely avoidable delay.
- Mayor Andrews will be blamed for a 2-4 year delay, and rising costs, because if he persuades the Newberg City Planning Commission ('NCPC') and the NCC to reject ODOT's no-thru design – he will have persuaded City officials to reject a design that would have made the NEPA violation MOOT and allow the project to proceed on time.

- Such an outcome would leave Newberg – on whom the State of Oregon has lavished a huge amount of money – a 'pariah local government' in Salem and in the region for years to come.
- Mayor Andrews is right to defend his city's interests. But Newberg is getting all the benefits and seems willing to dump their traffic problems on neighboring jurisdictions. Numerous independent entities have concluded the public safety and budget concerns of Yamhill County, Clackamas County, City of Wilsonville and the West Linn-Wilsonville School District greatly outweigh the legitimate but comparatively minor points Andrews mentions. For the City of Newberg's sake, it is time for Mayor Andrews to take the long view and be a statesman. A legacy-establishing fork in the road is right here in front of him.

EXPECTED TIMING

- 9/2/2015 – ODOT's proposed TSP Amendment presented to Newberg Staff. The Staff will submit their analysis to the NCPC.
- 9/21/2015 – NCC meeting referred this amendment to the NCPC (aka 'initiating the review process'); barely passed 4-3-0. ***Nearly all Councilors stated they would not pass the no-thru design, even before it had been studied & vetted by the NPCC.***
- 11/12/2015 – Earliest date for public input meeting. NCPC must notify the public of a hearing 35 days prior. We assume the NCPC is working on the proposed TSP Amendment between meetings. NCPC meets once per month. *We need a solid showing, written & verbal testimony of Bypass Impact Coalition representatives at this meeting.* This is also the earliest date for NCPC to make recommendations re adoption or modification of the proposed TSP Amendment back to NCC. Any delay here may delay the rest of the schedule by same amount, e.g. waiting for next NCPC meeting to act.
- 11/16/2015 – Next NCC meeting, although NCPC's TSP recommendation may not make the NCC Agenda due to timing which needs to be posted prior week. This would be the 'first reading' of the Proposed Amendment and a time for public input/comments. *We need a solid showing, written & verbal testimony of Bypass Impact Coalition representatives at this meeting.*
- 12/7/2015 – Earliest date for a second reading of the proposed TSP amendment and NCC vote. *We need a solid showing, written & verbal testimony of Bypass Impact*

Coalition representatives at this meeting. Based on the vote taken, the LHNA would be prepared to immediately file the NEPA complaint and/or a LUBA appeal.

CONTACT INFO

- LHNA Bypass Impact Committee Chair – Stan Halle (o) 503-625-1265; (c) 503-319-3011; eMail change1@mindspring.com
- LHNA Past Co-President representing Yamhill County – Cole Presthus (c) 503-819-5146; eMail cole56presthus@gmail.com

RECENT PHOTOS

Wilsonville Rd, already crowded with many blind curves; school buses twice a day; mail delivery six days a week; and garbage & recycle trucks twice a week.

Is frequently used by wide and slow farm equipment.

We already have too many accidents; we don't need more.

6.08
1 of 3

Public comments at the Newberg City Planning Commission 8 Oct 2015
Brent Ahrend, PE, Senior Associate, Assistant Department Head, Transportation Planning, Mackenzie Engineering, Portland, OR:

My name is Brent Ahrend. I am here today (8 Oct) before the Newberg City Planning Commission to provide a rebuttal to several points Mr. Bliss made at the Newberg City Council 21 Sept 2015 meeting during the Public Comments period with respect to *Newberg Resolution 2015-3218 initiating an amendment to the TSP for changes to the road and lane configuration of Highway 219 and the Highway 219/Phase 1 Bypass/Wilsonville Road intersection.* As members of the City Planning Commission, you each need accurate and current information for preparing your analysis and recommendations back to the City Council on this matter. My comments are also being submitted to the City Planning Commission in writing along with a verbatim transcript of Mr. Bliss' public comments.

I do wish to make one important clarification first. There has been much confusion with respect to our analysis, using ODOT and Kittleson data, that shows that the 'no-thru' design would cause a MAXIMUM increase in traffic on Newberg local streets of 3-4%. This means that these streets might only see an additional 25 cars per peak hour ('no-thru' vs. 'thru-thru'). That's less than one car every two minutes. Wilsonville Rd. could see many 100's of vehicles per hour in both directions with the 'thru-thru' design, due to commuters, beach traffic, and others seeking a 12+ mile short-cut to/from I-5 who want to avoid 99W. With a 'thru-thru' intersection in place, Garmen GPS, Google Maps, Wayz, etc. would point straight-ahead despite any signage otherwise.

With all due respect to Mr. Bliss, who has had a long career as a civil engineer, traffic engineers are the ones who figure out traffic flow, lane configurations and intersection control. Civil engineers, like Mr. Bliss, prepare the final design, right-of-way needs and construction documents. Specifically:

NO THRU DESIGN ORIGIN & VETTING:

- The no-thru design originated from ODOT to address major public safety and concerns along Wilsonville Rd. The State Highway and Traffic Engineer, Mr. Bob Pappe has reviewed and approved the 'no-thru' design concept back in March, 2015. Thus, this design has been vetted at the highest levels in ODOT.
- In fact, the 'no-thru' design has been shown to <u>increase</u> the efficiency of traffic flow at the Bypass intersection by allowing a longer time per signal sequence for traffic to go from the Bypass north to Springbrook Rd.

TRAFFIC IMPACT ON LOCAL STREETS:

- Drivers traveling between west Yamhill County and Wilsonville Road may choose to use Fernwood, Coral Creek, and Renne Road, but more likely would continue to use Hwy 99W through Newberg as they currently do.
- Mr. Bliss notes some traffic to and from Wilsonville Road is from Hwy 219. This will still be directly allowed from 219 South to make a left onto Wilsonville Rd. or 219 North to make a right onto Wilsonville Rd. The only restriction will be traffic traveling on the Bypass (existing Hwy 99W traffic that is traveling through Newberg).

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THE NO-THRU DESIGN IS NOT A 'PORK CHOP":

- It is not relevant to compare the proposed intersection configuration with a right turn driveway restriction using a "pork chop". The medians proposed are much different than a "pork chop" used at a driveway.
- I agree with Mr. Bliss that a driveway restriction using only a pork chop is known to be ineffective at prohibiting left turn movements – a raised median in the through street is needed to effectively restrict left turn movements. However, this is not relevant for the Bypass/OR219/Wilsonville Road signaled intersection.
- Mr. Bliss states he has designed similar intersections, but only provides examples of driveways with pork chops, not signalized intersections with channelization.

BOTTOM LINE:

- The no-through restriction will be implemented through a combination of channelization, medians, striping, signing and traffic signal control. There is no need for a raised median on Hwy 219 as Mr. Bliss implies. Illegal cross 219 traffic (east of west) will be mitigated by both Wilsonville Rd. westbound and the Bypass eastbound left turns occurring simultaneously.

Verbatim Transcript: Gary Bliss Public Comments: Newberg City Council Meeting 21 Sept 2015

Mayor Andrews: Mr. Gary Bliss

Gary Bliss: Mr. Mayor, Councilmen, my name is Gary Bliss. As some of you know, I am chair of the Planning Commission, but not here in that capacity this evening. I am here as a resident and as a retired civil engineer. I have reviewed this plan and think it does not merit further study or cost by the City for a plan that will not function as it is intended. In my 45 years as a civil engineer, I built many arterial roads. One is Evergreen Road in Hillsboro, Cornell Rd. in Beaverton, Walker Rd. in Beaverton, and 158th just to name four. And, when I've dealt with that, I've been imposed by ODOT as well as Washington County to construct intersections very similar to what's being proposed tonight. And that is a right-in, right-out, denying cross-traffic or left turns. And that's through what is known as a 'pork chop'. And the pork chop is supposed to divert traffic left or right. It's been my experience that they don't work. People ignore signs. They ignore traffic lines or arrows. I had an instance on Cornell Rd. at an intersection at a major shopping center. We tried a pork chop – it was the State's design. We found that people ignored it. They made illegal turns constantly. So we put in a median that was raised about 6". People drove over it. They ignored signs. We put in rubber bollards; they ran through those. Finally, the only result since this was a T-intersection, was to put in a raised concrete curb. Obviously, in this alignment, in this design, a vertical curb is not going to work, because you have a left turn off of southbound 219 traffic to get onto Wilsonville Rd. I use Wilsonville Rd. quite often to visit my grandson in Wilsonville and, yes, there's traffic on Wilsonville Rd. and people travel too fast. And a lot of the traffic I find comes from the intersection of 219 and Springbrook Rd. to the intersection of Springbrook Rd. and Wilsonville Rd. When this proposal cuts that off, it eliminates cross-traffic, so that anyone in West Yamhill County, West Newberg or North Newberg, is not going to have access to Wilsonville Rd. unless they travel Fernwood Rd., then go to Coral Creek Rd. and then turn on that to Renee Rd.,

which is about 16' wide, very narrow and has horrendous curves in it, in order to reach Wilsonville Rd. In my many trips over Wilsonville Rd., I have absolutely never seen any difficulty at any intersection, of any sub-division, or any of the County roads. Wilsonville Rd. is a County road for the purpose of joining communities. This is denying it. I do not understand that the State for years have taken the Bypass as a local issue. It's not a local issue, it's a regional issue. All of a sudden now, we are into a regional issue because we have Clackamas County and homeowners in Clackamas County dictating to Newberg what we should do to throw transient traffic off the Bypass or off 219 onto our local roads. Several years ago, this Council, or the City, at least, have approved the allowance of golf-carts on Brutscher and on Fernwood Rd. Now we are suggesting that we introduce transient traffic to mix with that. There are four neighbors within my neighborhood which is 55 homes that have golf-carts to go to the golf course.

Mayor Andrews: I need you to wrap up please.

Gary Bliss: They use Fernwood Rd. There are 250 homes in the proximity of the golf course that could use that same road with golf carts. So I suggesting that the City not expend money or proceed with considering this design. Thank you.

7.01

Oregon
John A. Kitzhaber, M.D., Governor

Department of Transportation
Office of the Director
355 Capitol St NE
Salem, OR 97301
Phone: (503) 986-3289
Fax: (503) 986-3432

January 27, 2015

Ladd Hill Neighborhood Association
Attention: Stan Halle and Cole Presthus
7045 NE Earlwood Road
Newberg, Oregon 97132

Dear Mr. Presthus and Mr. Halle:

Thank you for your letter of January 17, 2015, expressing concerns about potential safety and operational impacts to Wilsonville Road associated with Oregon Department of Transportation's upcoming interim connection of the Newberg Dundee Bypass to OR219.

My staff has reviewed the information you provided. I asked them and the project team to re-examine the design in this area to determine what, if any, changes can be made to discourage the through movement from the Bypass to Wilsonville Road. The project team is in the process of completing this task, and I expect them to report their finding back to me. As the project team works on alternatives, there will likely need to be more conversations with the community about impacts of each alternative and needed funding.

I have asked ODOT's Regional Manager, Sonny Chickering, to work these issues with the community to come to a solution that best fits the overall needs of the area.

Sincerely,

Matthew L. Garrett
Director

cc: Kelly Armador, ODOT Senior Project Leader
Ralph Bloemers, Crag Law Center
Sonny Chickering, ODOT Region Manager
Phillip Ditzler, FHWA Division Administrator
Michelle Eraut, FHWA
Paul Mather, ODOT Highway Administrator
Phil and Rosemary Morton, LHNA
Tim Potter, ODOT Area Manager
Henry Richmond, LHNA

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U.S. Department of Transportation
Federal Highway Administration

Oregon Division

530 Center Street NE, Suite 420
Salem, Oregon 97301
503-399-5749
503-399-5838 (fax)
www.fhwa.dot.gov/ordiv

January 29, 2015

In Reply Refer To:
HDA-OR
File:
Project K# 09320

Mr. Cole Presthus, Co-President
Mr. Stan Halle, Director
Ladd Hill Neighborhood Association
PO Box 2556
Wilsonville, OR 97070

Dear Messrs. Presthus and Halle:

We have received your January 17, 2015, correspondence regarding the Newberg Dundee Bypass project and concern for increased traffic on Wilsonville Road. We appreciate your outreach to us and are currently reviewing the information you have provided. The Federal Highway Administration (FHWA) has, and will continue to work closely with the Oregon Department of Transportation (ODOT) on this project. We understand that ODOT is currently reexamining the design in this area, in an effort to better understand options for addressing the concern raised.

FHWA is committed to ensuring project commitments are fulfilled and that the concern you raise is addressed. If you have any question, please contact Mike Morrow, Senior Operations Engineer via telephone at 503-316-2552 or e-mail at Mike.Morrow@dot.gov.

Sincerely,

Phillip A. Ditzler
Division Administrator

cc: Matthew Garrett, Director, ODOT

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ODOT RESPONSES
to
CONCERNS
of
LOCAL GOVERNMENT OFFICIALS AND CITIZENS
regarding
TRAVEL IMPACTS OF PHASE 1, NEWBERG DUNDEE BYPASS

I. CLACKAMAS COUNTY

1. August 16, 2013:

Email from: Kelly Amador, KellyLAmador@odot.state.or.us
Senior Project Leader, ODOT
Mid Willamette Valley
503.986.2874

To: Nancy Kraushaar, PE, Director of Community Development, City of Wilsonville,
Larry Conrad, Principal Planner, Clackamas County

"To support the Phase 1 construction efforts, Kittelson & Associates, Inc. worked with TPAU to analyze both year 2016 (year of opening) and year 2035 conditions assuming construction of only Phase 1 of the Bypass. Like the FEIS process, the analyses compared the "with bypass" conditions to the No Build.

In response to questions raised by the City of Wilsonville and residents in Clackamas County, some key findings of the Phase 1 analyses, specifically related to Wilsonville Road, are provided below.

"Today, Wilsonville Road carries approximately 3,500 vehicles per day to the south of Springbrook Road. In 2016, traffic volumes could increase to approximately 4,000 vehicles per day, by 2035, Wilsonville Road could carry upwards of 6,000 vehicles per day. Of this traffic, approximately 75 percent in the pm peak hour is oriented to/from the north along Oregon 219." (Emphasis supplied)

2. August 27, 2013

Email from: MikeBez@co.clackamas.or.us
Mike Bezner, Manager, Transportation Engineering,
Clackamas County
150 Beavercreek Road
Oregon City, Oregon 97046

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503.742.4651

To: Kelly Amador

"Kelly,

"Just following up on my meeting request to discuss impacts to County roads due to the Newberg Dundee bypass. Our commission are expecting for this to be discussed ASAP. Thanks, Mike"

3. August 27, 2013

Email from: Kelly Amador
To: Mike Bezner:

"In July we met with Larry Conrad, Principal Planner with Clackamas County and Nancy Kraushaar, Community Director with the City of Wilsonville to discuss the Bypass project. The meeting also included our consultant, Kittelson and Parametric who worked on the traffic studies and the Environmental Impact Statement (EIS). ***Our traffic studies and the EIS indicate that the Bypass will have little impact on Clackamas County roads.***

"I have attached a documents [sic] that we prepared for Nancy and Larry that discusses the project and the traffic impacts. After you review them, if you still have questions or concerns, we can arrange a meeting time.

Kelly" (emphasis supplied)

4. August 27, 2013,
Email from: Mike Bezner
To: Kelly Amador

"Kelly-

"I do still have questions. I read the document when Larry gave me a copy. ***It shows that the traffic volumes with and without the bypass on Wilsonville Road are exactly the same in 2016. This does not seem possible*** and I wonder what the traffic model looks like. Regardless, our Commissioners want me to discuss this with you.

Mike Bezner, Manager"
(Emphasis supplied)

5. September 5, 2013,
Email from: Kelly Amador
To: Mike Bezner

"Julia Kahn from Kittelson performed the traffic analysis and modeling for our environmental documents and the project. I forwarded your question/concern to her and

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this is her response:

> 'Both Clackamas County staff and members of the public have raised questions regarding the potential for the Bypass to change the traffic volumes (i.e., 'induce demand') on roadways that enter into the Newberg Dundee area. We worked with ODOT as part of the EIS to assess this possibility. Here's a little background:
>
> 'ODOT maintains a 'statewide' model that can help to determine whether adding significant new roadways like the Bypass might change the traffic volumes on other roadways that span multiple jurisdictions, like ORE 99W. This statewide model is different but complementary to the model we and ODOT have used for the Bypass EIS calculations which only includes the Newberg Dundee area. If we only used the model for the Newberg-Dundee area, we may not be able to ascertain whether traffic volumes on how the Bypass may or may not change the volumes on roadways entering and exiting the Newberg Dundee area. Use of the statewide model by ODOT allows for this possibility.
>
> 'Based on the use of the statewide model, ODOT determined that adding the Bypass would not measurably change the traffic volumes on Highway 99W, Wilsonville Road, or other roadways entering/exiting the Newberg Dundee area. The statewide model was used for the year 2035 analyses ***but we can conclude the same result for 2016, that traffic volumes on Wilsonville Road will not change as a result of the Bypass.***
>
> 'Please let me know if you need any additional information.
>
> Julia'
>
> "Let me know if this addresses your question. We can arrange a time to discuss this further if you would like.
>
> Kelly" (emphasis supplied)

(HRR Question: meeting ever happen? Further emails between Amador and Bezner?)

II. CITY OF WILSONVILLE

1. September 23, 2013,
   Email from: Nancy Kraushaar, PE
   Community Development Director
   City of Wilsonville
   29799 SW Town Center Loop, E
   Wilsonville, OR 97070
   503.570.1562

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To: Kelly Amador, ODOT

"Hi Kelly: I received the attached letter from the Clackamas County Commission Chair John Ludlow today. Just a heads up for you.

"I will be questioned about our meeting, correspondence, and the memo you sent in August (also attached). Upon reading your memo, I have a couple of questions about the following section:

"Traffic Analysis of the Newberg Dundee Bypass Phase 1 at Wilsonville Road
To support the Phase 1 construction effort, Kittelson & Associates, Inc. worked with TPAU to analyze both year 2016 (year of opening) and year 2035 conditions assuming construction of only Phase 1 of the Bypass. Like the FEIS processes, the analyses compare the "with bypass" conditions to the No Build.

"In response to questions raised by the City of Wilsonville and residents in Clackamas County, some key findings of the Phase 1 analyses specifically related to Wilsonville Road, are provided below.

"Today, Wilsonville Road carries approximately 3,500 vehicles per day to the south of Springbrook Road. In 2016, traffic volumes could increase to approximately 5,000 vehicles per day; by 2035, Wilsonville Road could carry upwards of 6,000 vehicles per day. Of this traffic, approximately 75 percent in the PM peak hour is oriented to/from the north alone Oregon 219.

"Near the Wilsonville Road intersection, Springbrook Road carries approximately 7,000 vehicles per day now; without the Phase 1 Bypass, the traffic volumes could increase to 8,000 vehicles per day in 2016 and 13,000 vehicles per day in 2035. If Phase 1 of the Bypass is constructed, the volumes on Springbrook Road could increase to 14,000 vehicles per day in 2016 and more than 21,000 vehicles per day in 2035.

"1. Do the traffic counts provided for Wilsonville Road above represent the No-Build or "with bypass?"
"2. Could you please elaborate on "approximately 75 percent in the PM peak is oriented to/from the north along Oregon 219"? What does that mean relative to the concerns that have been expressed about increased traffic on Wilsonville Road: safety, etc.

"Thank you. -Nancy"

(Questions: What is in Amador's August memo to NK? What did 9/23/13 Ludlow memo say?)

2. September 27, 2013, email from Amador to Kraushaar.

"Hi Nancy,

"I am working on responses to your questions. You refer to an attached letter from John Ludlow but your email did not have an attachment. Can you forward that letter/email to me.

"Thanks. Kelly"

3. October 14, 2013, email from Nancy Kraushaar to Amador

"Hi Kelly: Have you had a chance to reply to my questions below? Thank you. - Nancy"

4. October 14, 2013, email from Amador to Kraushaar

"Hi Nancy:

"Sorry about the delay in responding to you. Here are the responses to your questions.

"1. **Do the traffic counts provided Wilsonville Road above represent the No-Build or with bypass?**

"The daily traffic volume estimates for Wilsonville Road are essentially the same for both the No-Build and with the Phase 1 Bypass. As part of our analysis, it has been important to understand whether adding the Bypass to the roadway system would change the destinations and/or routes chosen by regional travelers. Previously, we've received questions as to whether the bypass would "induce" demand on any of the roadways leading into and out of the Newberg-Dundee area. To help answer that question we worked with ODOT as part of the EIS process to assess the potential for the Bypass to change the traffic volumes (i.e., "induce demand"). ODOT used their "statewide" model to determine whther adding the Bypass would change the traffic volumes on other roadways that span multiple jurisdiction, like Oregon 99W. The statewide model is different but complementary to the model we used for the Bypass EIS calculations, which only includes the Newberg Dundee project area. If we only used the model for the Newberg Dundee project area, we may not be able to ascertain whether the additional capacity provided with the Bypass would change the traffic volumes on roadways entering and exiting the Newberg Dundee project area. Using the statewide model allowed ODOT to assess the possibility of changes in traffic volumes on roadways that enter the Newberg Dundee project study area.

"Based on the output's [sic] from ODOT's statewide model, we determined that adding the Bypass would not measurably change the traffic volumes on Oregon 99W, Wilsonville Road, or other roadways entering/exiting the Newberg Dundee project area. The statewide model was used for the year 2035 analyses but we can deduce the same findings for 2016. ***We can conclude that traffic volumes on Wilsonville Road would not change measurably as a result of the Phase 1 Bypass.***

"2. **Could you please elaborate on the "approximately 75 percent in the PM peak is oriented to/from the north along Oregon 219"? What does that mean relative to the concerns that have been expressed about increase traffic on Wilsonville Road: safety, etc.**

"When we looked where travelers from Wilsonville Road are headed in the PM peak hour in 2016 and 2035 with the Phase 1 Bypass in place, we noted that 75% are coming from or going to the north, along Oregon 219 when engineering into the Newberg area. This traffic pattern can be used to deduce that many of the 4,000 vehicles per day in 2016 on Wilsonville Road are destined for Newberg or areas to the northeast or northwest of Newberg rather than more regional destinations toward the coast or further west to Lafayette or McMinnville. Trips toward the coast or further west to Lafayette or McMinnville would use the Phase 1 Bypass.

"As noted in the response to your first follow-up question above, ***the Bypass modeling determined that traffic volumes on Wilsonville Road would not measurably change as a result of the Phase 1 Bypass.*** The Bypass modeling does not show measurable changes in traffic volumes on Oregon 99W, Wilsonville Road, or other roadways

entering/exiting the Newberg Dundee project area therefore ***it does not support the concerns and opinions expressed by the Ladd Hill OPO, the City of Wilsonville, and Clackamas County about increased traffic volumes or safety problems on Wilsonville Road.***

"I hope provides you with the information/clarification you are looking for. Kelly"

(Emphasis supplied)

November 18, 2013 Comments at Meeting of Wilsonville City Council

As reported by Josh Kulla, "Some Fear Bypass will Heap Traffic Onto Wilsonville Road," ***Wilsonville Spokesman***, November 27, 2013

"'The Oregon Department of Transportation is very much convinced that having Wilsonville Road be part of a signalized intersection, there really is a belief that the creation of the bypass increase traffic on Wilsonville Road,' Wilsonville Community Development Director Nancy Kraushaar told the Wilsonville City council on November 18."

"Extensive ODOT modeling done before the first shovel ever hit dirt also concluded the bypass would not measurably impact traffic on the Wilsonville Road, which joins Wilsonville with Newberg." (reporter's statement in published story.)

" 'It seems like it boils down to whether you have confidence in the modeling or not,' said Councilor Richard Goddard."

With respect to ODOT's offer "to take traffic counts now and take them after the bypass is completed and see if if models were correct or not. And if that's not the case, do something,"

Wilsonville Mayor Tim Knapp's response:

"It seems to me it would make sense to evaluate low-risk mitigation on the front end before you risk millions of dollars building it a certain way. I don't see a downside to considering one of those other options; whereas there is a significant downside to the option they have chosen to focus on. It doesn't seem like it would be hard to answer those questions."

"Kraushaar said she simply doesn't have the data set present to contradict ODOT's projections.

"'My thought is for safety,' she said. 'It's not a safe road. It's narrow and windy, people cut across lanes to do their fancy driving, stuff like that. ***But ODOT continues to stick to their belief that their model is correct*** and that we don't need to do anything.' "

(Emphasis supplied)

(Note: LCDC Goal Exceptions, approved by Yamhill County in 2005 -- before Phase 1 existed? No later exception w/ respect to Wilsonville Road?)

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III. CITY OF NEWBERG

1. November 13, 2013

Letter, Amador to Newberg Planning Division: (Barton Brierly, Jennie N. Pelz)

"Thank you for the opportunity to provide additional information to the City Council regarding the Wilsonville Road TSP Amendment. ODOT was contacted by the Ladd Hill CPO, the City of Wilsonville, and Clackamas County about the Newberg Dundee Bypass Phase 1 realignment of Wilsonville Road in June of this year. They each inquired as to whether connecting Wilsonville Road to the new Oregon 219/Phase 1 Bypass would increase through traffic on that roadway.

"ODOT met with the Ladd Hill CPO twice, in July and in mid-September. ODOT also provided to the Ladd Hill CPO a memo describing the project, the traffic modeling, and answered CPO questions. ODOT also met with City of Wilsonville and Clackamas County staff in July to discuss similar issues. Copies of memos and email exchanges are listed at the end of our testimony and are attached for your reference.

"Based on a review of the questions received from the three groups, ODOT reviewed the technical analyses conducted to date on the Bypass project and determined that the concerns and opinions expressed by the Ladd Hill CPO, the City of Wilsonville, and Clackamas County about increased traffic volumes on Wilsonville Road cannot be substantiated by the technical data. For this reason, ODOT cannot validate nor agree with the issues raised by these three groups. Specifically, the analyses show that:

1. Adding the Bypass would not measurably change the traffic volumes on Oregon 99W, Wilsonville Road, or other roadways entering/exiting the Newberg Dundee project area in the future."

(Note: "Determination can not be substantiated by the technical data."

IV. MARION COUNTY

Ben Williams

Marion County is concerned that I-5 exit 278 (Donald/Aurora) is over capacity now, and that with the Bypass terminating at 219 and Wilsonville, a considerable volume of 99W traffic at 219 and Wilsonville Road going to I-5 will travel over McKay/Ehlen Roads, thus making congestion at I-5 Exit 278 worse.

Marion County Farm Bureau

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V. LADD HILL NEIGHBORHOOD ASSOCIATION

1. June, 2013: LHNA expression of concern about traffic to _____name?_____ at ODOT. Email? Letter?

   2013: After strenuous discussion, June 2013 statement of ODOT Region 2 Director, Tim Potter to Cole Pr___?____, "We didn't look at Wilsonville Road."

2. July 1, 2013: ODOT gives LHNA a copy of a 7-page July 1, 2013 memo William Criz, Parmetrics Co., attaching a traffic study concluding that traffic will not increase on Wilsonville Road (get study; quote it).

3. August 11, 2014: Email, Amador to Dr. Marion Dresner

"The Gen. 1 model result showed that the Bypass would not induce a measurable amount of travel growth onto these ("roads" from I-5 to Yamhill County."). [Marion Co.]

	Vehicles Per Day	
	Without Bypass	**With Bypass**
Springbrook		
Now	7,000	
2016	8,000	14,000
2035	13,000	21,000
Wilsonville Road		
Now	3,500	
2016	4,000	4,000
2035	6,000	6,000

April 29, 2014:

Email: from Christina A. McDaniel-Wilson, P.E., Senior Transportation Analyst
ODOT Planning Analysis Unit
555 13th Ave., NE, Ste. 2
Salem, OR 97301-4128
503.986.3501

To: Brent Ahrend, PE
Senior Associate
Traffic Engineer

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McKenzie, Inc.
River East Center
1515 SE Water Ave., Suite 100
Portland, OR 97214
503.224.9560 (o)
? (C)

Refuses to provide Ahrend a copy of ODOT's Newberg Traffic Demand Model, but offers "to rerun the model to reflect different connections and provide the travel model output to you."

May 1, 2014: Email, Ahrend to McDaniel-Wilson
Requests an opportunity to discuss the project.

May 1, 2014: Telephone conference, Ahrend and McDaniel-Wilson

May 6, 2014: Email, Ahrend to McDaniel-Wilson

In providing this summary of phone conversation, the first two points of which state:

"The model used for the Phase 1 bypass does not extend to I-5 or Wilsonville."

"An expansion of the model area would be a significant effort."

May 22, 2014: Email, McDaniel-Wilson to Ahrend

"Thank you for this summary -- is that in this email?"

Model run will be given to you tomorrow. [this is all after the record is closed.]

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Oregon
Kate Brown, Governor

Department of Transportation
Area 3 Manager
885 Airport Road SE, Building P
Salem, Oregon 97301-4788
Telephone (503) 986-2900
Fax (503) 986-2881

Clackamas County Commission Chair John Ludlow
2051 Kaen Road
Oregon City, OR 97405

Oct. 20, 2015

Subject: Wilsonville Road Impacts

Dear Chair Ludlow

I have been asked by Director Garret to respond to your letter of Oct. 14, concerning the meeting held in the Director's office on Oct. 7.

ODOT shares your concern that the connection of Wilsonville Road to OR219 function correctly with respect to both safety and operations. These attributes are always the objective and commitment of our Department. In an ongoing attempt to assure that we meet that objective, we would gladly join with Clackamas County, Yamhill County and other affected jurisdictions to assess the impacts. As we said in the meeting, the impacts of many alternatives have been presented in the Final Environmental Impact Statement. ODOT will be presenting a comprehensive summary of all the examined alternatives to the Newberg Planning Commission to support the TSP amendment we are requesting. The exact scope of any future analysis needs to be determined, and agreed to by all parties, so that the analysis is not duplicative, and is effective but not excessive. It would be a necessity that such analysis would help determine any safety or operation improvements that could be made to mitigate any unintended impacts.

I would like to suggest that the traffic conditions along Wilsonville Road are not the sole responsibility of ODOT. As noted at the meeting, there are several critical intersections along the route between Newberg and Wilsonville, with significant traffic as well, that contribute to the issues. Traffic from Ladd Hill Road, Earlwood Road, Edministon Road and other local roads contribute several hundred cars per day to the traffic along Wilsonville Road. While the west end of Wilsonville Road currently has a crash rate below the state average for similar roads throughout the state and we share the Counties desire to improve it, it should not be entirely the responsibility of ODOT to fund a study to find cost effective methods to improve this road. Our Director has committed to funding necessary mitigation for additional impact caused to both the City of Newberg and to Wilsonville Rd as a result of Phase 1 of the bypass. Discussion and analysis for improvements would need to take in to account impact from all sources.

I look forward to the discussions to establish the scope of the analysis and with whom we should work to further this effort.

Best Regards,

James T. Potter, PE
Area 3 Manager
cc. ODOT Director Matthew Garrett
ODOT Region 2 Manager Sonny Chickering

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ODOT/LHNA Meetings – 2015 Agendas & Minutes
*3 Feb, 12 Feb, 23 Apr**, 15 May, 1 Jun, 2 July**, 24 Aug*
*(** with Newberg Staff)*

The following is a copy of relevant eMails between LHNA and ODOT (in order from oldest to newest):

From: Stan Halle (HHCG) [mailto:change1@mindspring.com] Sent: Monday, February 02, 2015 4:26 PM To: CHICKERING Sonny P; POTTER James T * Tim; AMADOR Kelly L; John Freeman; Cole Presthus; Mackenzie Cc: GARRETT Matthew L * ODOT; Sharon Halle Subject: 3 Feb 11:30-2pm Meeting Agenda Importance: High

All:

I've put together an Agenda (below) for tomorrow's meeting. Looking forward to seeing you.

Thanks,
Stan
PS: 36450 NE Wilsonville Rd., Newberg OR
(503) 625-1265
Lunch will be available

AGENDA
1. Get the dialog going between ODOT and LHNA – revisit LHNA support for the Bypass Phase I and Bypass goals
2. Are there any further studies of the potential impact on Wilsonville Rd?
3. What is the status of any work re the planned Phase I realignment of Wilsonville Rd. with the eastern Bypass terminus?
4. What is ODOT's intent going forward with LHNA (level of participation and expected timeline)?
5. What alternatives is ODOT currently considering as per Director Garrett's instructions?
6. What alternatives is LHNA currently considering?
7. Discussion of #5 & 6 – seeking common ground
8. Agree on next steps, deliverables, and timing

On Feb 2, 15, at 5:09 PST, CHICKERING Sonny P <Sonny.P.CHICKERING@odot.state.or.us> wrote:

Thanks for providing some structure for the discussion tomorrow.

I look forward to meeting in person to discuss your issues, and potential measures to eliminate, reduce, or mitigate them.

Sonny P.A. Chickering, PE Northwest (Region 2) Manager 541-517-1955

On Feb 5, 15, at 3:07 PST, CHICKERING Sonny P <Sonny.P.CHICKERING@odot.state.or.us> wrote:

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Just wanted to drop a note of thanks for your hosting of our meeting on Tuesday - Lunch was very much appreciated. As promised, I am sharing my takeaways from the meeting to ensure a common understanding of our respective commitments moving forward:

Points of Agreement

- Both parties support ultimate construction of the full bypass.
- Both parties agree we want to discourage use of Wilsonville Rd. as an extension of the interim bypass connection to OR219.

Options Discussed

- Various realignments of the Wilsonville Rd. connection to OR219.
- Various channelization changes to the new four way intersection currently in our design.

Proposal by ODOT

Modify the new four way intersection at OR219 to preclude thru movements eastbound from the bypass to Wilsonville Road. ODOT made the case that this type of design modification within the existing ROW, and without the need for planning actions, environmental justice review, ROW acquisition, and achievable within the existing project budget was a reasonable solution.

Counter proposal – The neighborhood association is also concerned about populations on the east side of I-5 choosing to use Wilsonville Rd. to access the eastern end of the interim bypass (avoiding Hwy 99 congestion). Requested we examine the possibility of precluding through movements in either direction to / from Wilsonville Rd. and the interim bypass alignment. In summary, full movements north and south on OR219. Right or left only from the bypass, and from Wilsonville Rd.

This solution would isolate Wilsonville Road residents from direct access to the bypass, but there are reasonable local road connections that would provide alternate routes to the bypass via OR219 from the north.

Next Steps

- ODOT designers will layout intersection channelization concepts.
- ODOT will develop a list of internal approvals and external stakeholder outreach actions.
- ODOT will provide their engineer with a base condition layout of the four-way intersection so they can provide channelization suggestions for our consideration.
- ODOT and the neighborhood association will share and compare notes about these discussions and outcomes.
- The association will allow ODOT to review any newsletter or other materials concerning these discussions prior to distribution so our level of commitment is not unintentionally overstated or misrepresented.

The association members seemed pleased with our willingness to discuss options, and I would describe the discussions as amicable and productive.

We have already started work on the "next steps" listed above, and look forward to continuing these discussions next week.

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Sonny P.A. Chickering, PE
Northwest (Region 2) Manager
541-517-1955

From: Brent Ahrend [mailto:BAhrend@mcknze.com]
Sent: Wednesday, February 11, 2015 11:07 AM
To: CHICKERING Sonny P; AMADOR Kelly L
Cc: change1@mindspring.com; 'Cole Presthus' (cole56presthus@gmail.com); Sharon Halle (hallesfarm@frontier.com); 'John Freeman' (johnfreeman97140@gmail.com)
Subject: Wilsonville Road Intersection Configuration a Hwy 219/By-Pass

Sonny & Kelly,

On behalf of the LHNA, I am providing this intersection channelization concept plan for the By-Pass/Highway 219/Wilsonville Road intersection. This plan is in response to our discussion on February 3, 2015, regarding the prohibition of through traffic in both east and west directions on Wilsonville Road and the By-Pass.

We reviewed a number of options before arriving at this concept, including various median treatments and an offset alignment of the approaches. We believe this represents a solution that could be acceptable to the LHNA, ODOT and local jurisdictions.

All intersection approaches would remain on the currently proposed alignments and only widening on the south side of the By-Pass approach would be needed.

Left turns on the Wilsonville Road and By-Pass approaches would be channelized and curved towards the receiving lane, similar to an approach at a roundabout. Curving the approaches provides a number of benefits including:

- slowing traffic as it approaches the intersection
- aligning the left turn lane with the travel path through the intersection
- improving efficiency of the left turns through the intersection and thus improving efficiency
- reinforcing the through movement restriction on each approach

Raised medians are proposed to channelize the lanes as shown at the following locations:

- Between the left turn lanes and adjacent opposing through lanes on Highway 219 and the By-Pass
- Along the northbound and southbound Highway 219 left turn lanes. This helps to discourage through movements from the right turn lanes on Wilsonville Road and especially on the By-Pass approach.
- Between the left and right turn lanes on Wilsonville Road and the By-Pass where a through lane would normally be located. This helps to reinforce through movement restriction.
- In the center of the intersection to physically restrict vehicles from using the left turn lane for through movements.

The phasing of the traffic signal can also be used to reinforce the through movement restrictions on Wilsonville Road and the By-Pass by running a conflicting movement with both the left and right turn movements.

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- Providing a common green for the left turn movements from Wilsonville Road and the By-Pass (shown in blue travel paths). This discourages the through movement from the left turn lane as it conflicts with the opposing left turn movement.
- Right turn movements from Wilsonville Road and the By-Pass would operate with the complementary left turn movements on Highway 219 as shown in the red travel paths for the By-Pass and orange travel paths for Wilsonville Road. These movements may all occur at the same time). Left turns from Highway 219 conflict with a through movement from a right turn lane on Wilsonville Road and the By-Pass.
- Pedestrians crossing Highway 219 would have their own signal phase or could be coordinated with specific non-conflicting movements. For example, a pedestrian crossing the south leg of the intersection concurrent with left turns from the By-Pass.

Please share this with your designers, and feel free to contact me if you have any questions about this concept plan ahead of our meeting tomorrow.

Thanks,

Brent T. Ahrend, PE
Senior Associate | Asst Department Head – Transportation Planning
Architecture · Interiors · Engineering · Planning
P 503.224.9560 W mcknze.com C vcard
RiverEast Center
1515 SE Water Ave, Suite 100
Portland OR 97214

On Feb 11, 15, at 11:53 PST, CHICKERING Sonny P <Sonny.P.CHICKERING@odot.state.or.us> wrote:
Thanks for sharing this information in advance Brent – we will give it a look this afternoon in preparation for tomorrow's meeting.

Sonny P.A. Chickering, PE
Northwest (Region 2) Manager
541-517-1955

On Feb 13, 15, at 5:49 PST, CHICKERING Sonny P <Sonny.P.CHICKERING@odot.state.or.us> wrote:
Thank you again for hosting our meeting yesterday afternoon. I am encouraged by the progress made since our last meeting on Feb. 3rd, and look forward to reviewing the next iteration of design concepts.

Review of Initial Intersection Concept
Brent Ahrend of Mackenzie presented the key features and characteristics of his conceptual layout for the intersection of the Bypass, OR219 and Wilsonville Road. Lane alignments, island layouts and traffic signal phasing were explained and discussed in some detail, as well as the

possibility of quicker progression through the "S" movement from the Bypass to Springbrook Rd. in both directions. By modifying the phasing of the movements through the signals, and adjusting the shape of the islands it may in fact be possible to clearly convey to drivers that they cannot make through movements to or from Wilsonville Rd. and the Bypass.

Initial Feedback from ODOT Staff

Because the proposal was schematic only (not precisely to scale) it was not possible to confirm the size of the islands prior to this meeting. To demonstrate the necessary island shapes, ODOT staff did provide an overlay of truck turning movements over the schematic drawings that indicates some modification will be required. ODOT staff also has concerns regarding the potential number of Wilsonville Rd. vehicles that will proceed north and attempt a U-Turn at the Springbrook traffic signal in order to access the Bypass. Finally, any proposed changes to traffic signal phasing at the Bypass intersection must consider the effect on traffic signal phasing and operations at the signals to the north. All signals from the Bypass to Hwy 99 will be interconnected.

Outreach and Socialization of these Discussions

ODOT shared a list of internal approvals and external stakeholder communications that would be required before any project design changes are made. Both the neighborhood association and ODOT have already contacted a few of the individual key stakeholders to inform them of the ongoing discussions, however, the group agreed that the current proposal is not yet ready for distribution. The issue of whether and when to begin a formal outreach process will be discussed at the next meeting after a review of the updated design proposal.

Next Steps

The neighborhood association will authorize Brent to revise and refine his intersection concept to address the ODOT feedback items. Revisions will be drawn electronically and to scale, and shared with ODOT staff for review and comment. Both parties agreed to target a third meeting to occur on Feb. 26th, where progress can once again be reviewed and discussed.

Sonny P.A. Chickering, PE
Northwest (Region 2) Manager
541-517-1955

From: Brent Ahrend [mailto:BAhrend@mcknze.com]
Sent: Friday, February 20, 2015 2:23 PM
To: AMADOR Kelly L
Cc: CHICKERING Sonny P; change1@mindspring.com; Sharon Halle (hallesfarm@frontier.com); 'John Freeman' (johnfreeman97140@gmail.com); 'Cole Presthus' (cole56presthus@gmail.com); POTTER James T * Tim; Katie Atkins
Subject: RE: Summary Notes of our Meeting on Feb. 12th

Kelly,

Here are pdf's of the current intersection configuration concept, both with and without the truck turns shown. There are still some details to work out, but the concept works. Please distribute to your staff, and if you have any further questions let us know. We can provide the electronic drawings, but wanted to get out first, as there is still some effort to prepare the

drawings for you. Also, if you need anything else shown, we can prepare that on the electronic drawings as well.

Please include Katie Atkins in any responses back to us, as she is assisting me in the drawing the layout.

Thanks,

Brent

From: AMADOR Kelly L [mailto:Kelly.L.AMADOR@odot.state.or.us]
Sent: Thursday, February 19, 2015 7:19 AM
To: Brent Ahrend
Subject: RE: Summary Notes of our Meeting on Feb. 12th

Brent:

Can you please provide us with your design file so we can look at your layout electronically.

Thanks, Kelly

Kelly Amador, Sr. Project Leader
kelly.l.amador@odot.state.or.us
Mid-Willamette Valley Area
Marion, Polk, Yamhill Counties
Phone: 503-986-2874 Fax: 503-986-2881

From: Brent Ahrend [mailto:BAhrend@mcknze.com]
Sent: Wednesday, February 18, 2015 3:19 PM
To: CHICKERING Sonny P; Stan Halle (HHCG) (change1@mindspring.com); Sharon Halle (hallesfarm@frontier.com); John Freeman (johnfreeman97140@gmail.com); Cole Presthus (cole56presthus@gmail.com)
Cc: POTTER James T * Tim; AMADOR Kelly L
Subject: RE: Summary Notes of our Meeting on Feb. 12th

Sonny, Kelly & Tim,

As discussed, we are revising our intersection concept to address truck turns while meeting the intent of the alignment to prohibit through trips between Wilsonville Road and the Bypass and have a few assumptions to confirm.

We are using a WB-67 design vehicle. Note that the attached diagram shows the current intersection plan also requires one of the trucks to encroach on the southbound left turn lane on Hwy 219. Our design will either match or improve upon this encroachment.

For the horizontal curves we are assuming a radius of a minimum 573-ft for vehicles approaching the intersection. A minimum 200-ft radius will be used for the second curve leading up to the stop bar. We believe these radii will slow vehicles as they approach the signal

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and prepare to turn.

We are using 12-ft lane widths and a minimum 2-ft offset from raised medians. Other than that, the lane widths and offsets will be dictated by truck turn requirements.

We intend to provide a more detailed electronic and scaled plan this week. I just wanted to remind you that because the neighborhood has a limited budget our efforts to are intended to show the feasibility of the concept and not serve as a final design. It is understood that ODOT staff will still be preparing the final design for any changes to the intersection configuration.

ODOT has asked us to provide updated intersection capacity calculations and to address how the concept affects the interconnected signal system. We do not have any information on the signal coordination plans, but what we have found is the proposed concept operates better (lower v/c) and would not require any reduction in green time for either Highway 219 or the Bypass movements. Based on this, we believe this change can easily be incorporated into ODOT's planned signal system. See the attached capacity calculations comparing the planned and proposed intersection configurations. Note we have assumed through trips become either eastbound left turns or westbound right turns.

Questions have been raised about the routing of vehicles with the through movement prohibition. These volumes are estimated to be 40 eastbound and 35 westbound in the modeling provided to us, so the volume anticipated to reroute is relatively low. As noted above, we have assumed these vehicles still travel through the intersection. For vehicles approaching on Wilsonville Road, they have the opportunity to use other local streets such as Fernwood and Renne to approach the Bypass from the north. Should a driver arrive at the intersection with Hwy 219, they still have the option of traveling through Newberg on Highway 99W as they currently do. Finally, some drivers may choose to loop around using E 2nd Street, but this volume is expected to be very low. For vehicles approaching on the Bypass and intending to travel on Wilsonville Road, they can still use Fernwood and Renne, or plan ahead and travel through Newberg on Highway 99W as they currently do. We do not expect vehicles would make a U-turn at the Springbrook intersection.

Brent T. Ahrend, PE
Senior Associate | Asst Department Head – Transportation Planning
P 503.224.9560 W mcknze.com C vcard
RiverEast Center
1515 SE Water Ave, Suite 100
Portland OR 97214

On Mar 6, 15, at 11:42 PST, CHICKERING Sonny P <Sonny.P.CHICKERING@odot.state.or.us> wrote:

Thank you for making the trip down to Salem for our meeting.

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Review of Second Generation Intersection Concept

Brent Ahrend of Mackenzie provided advance copies of the Associations revised intersection design proposal. ODOT staff had reviewed the drawings prior to the meeting, and the resulting comments were presented and discussed by the group. Kelly Amador of ODOT provided clarifying remarks and answered questions from the Association and Mr. Ahrend.

Presentation of Potential ODOT Modifications to Concept

During review of the Associations intersection concept, one of ODOT's designers was inspired to propose a modified configuration that not only accommodated truck turning templates with more standard shy distances and shoulder widths, but included more drastic geometric changes intended to prevent illegal thru movements around or between the islands shown in prior concepts. The resulting footprint would be significantly larger, and begin to resemble the configuration of a Single Point Diamond, as currently in place at the I-5/Market Street Interchange. While this alternative may be feasible, more conversation would be required to determine whether such a facility would be consistent with the character and location of the intersection.

Next Steps

Following review and discussion of the various design concepts, the Association and Mr. Ahrend expressed a willingness and desire to continue iterating their design in the hopes of addressing all of ODOT's technical concerns. Their offer included arranging a venue for Mr. Ahrend to discuss the design issues directly with Region 2 engineers.

Sonny Chickering suggested the Association and Mackenzie staff had expended sufficient capital and time to demonstrate that a reasonable concept for an intersection that would prevent thru movements to and from the Bypass and Wilsonville Road could be found. Rather than place additional burden on the Association at this time, Chickering committed to take the concept(s) in their current form to the State Roadway and Traffic Engineer for his review and comment. This conversation is consistent with the list of approval steps provided by ODOT at an earlier meeting, and is necessary to determine whether further investigation of the concept(s) is warranted.

Chickering will work this week to schedule an internal meeting with the State Roadway and Traffic Engineer, then contact the Association to inform them of the schedule, and set a tentative date for this group to meet again.

Sonny P.A. Chickering, PE
Northwest (Region 2) Manager
541-517-1955

On Mar 20, 15, at 3:24 PDT, CHICKERING Sonny P <Sonny.P.CHICKERING@odot.state.or.us> wrote:

First, thank you for patiently awaiting an update – it was a rough week for all three ODOT'ers.

We were able to meet with the State Roadway & Traffic Engineer on Friday March 13th as planned. Tim reviewed the project history, current design, LHNA concerns, and the iterative intersection design discussions that have been occurring for the past couple of months. He also

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shared the approval process list and explained our purpose in meeting to discuss the project. After considerable discussion, the State Roadway and Traffic Engineer indicated he agreed the concept of modifying the intersection design to preclude through movements to/from the Bypass and Wilsonville Rd. is viable, subject to further refinement of the lane channelization islands.

Our next step is to hold a broader internal discussion with our designers to bring them up to speed on the State Roadway and Traffic Engineers response, and to address any remaining concerns or issues. The date of this meeting has not yet been confirmed, but I will update you once I have a firm date selected.

Finally, we are now comfortable committing to jointly attending the April Parkway Committee with LHNA representatives to begin a public discussion of the redesign proposal. Tim and Kelly will also begin communications with Newberg City staff regarding the venue and timing for getting the concept in front of the City Council.

I hope you agree that a major milestone has been achieved, and that we are making good progress in fully vetting a modification to the intersection design. Thank you again for your patience, and I will send you an update when our internal meeting date is confirmed.

Sonny P.A. Chickering, PE
Oregon Dept. of Transportation
Northwest (Region 2) Manager
541-517-1955

On Mar 23, 15, at 10:18 PDT, CHICKERING Sonny P <Sonny.P.CHICKERING@odot.state.or.us> wrote:

Internal ODOT meeting has been scheduled for tomorrow March 24th.

Sonny P.A. Chickering, PE
Oregon Dept. of Transportation
Northwest (Region 2) Manager
541-517-1955

From: Stan Halle (HHCG) [mailto:change1@mindspring.com]
Sent: Friday, March 20, 2015 4:11 PM
To: CHICKERING Sonny P
Cc: Sharon Halle (hallesfarm@frontier.com); John Freeman (johnfreeman97140@gmail.com); Cole Presthus (cole56presthus@gmail.com); Mackenzie (BAhrend@mcknze.com); POTTER James T * Tim; AMADOR Kelly L
Subject: Re: Update on ODOT Meeting with State Roadway & Traffic Engineer

Hi Sonny:

Thanks for the update and the good news. As I said on the phone just now, we commit to working side-by-side with your team at each venue as you present this 'viable concept'. This will go a long way in showing the 'alignment' between our two organizations.

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Once it's gone thru the rest of the internal hoops, we should sit down to discuss the steps ahead to both solidify the concept and ensure that there's a clear collaborative process, should any future changes (eg: traffic flow revisions) need to be considered.

Happy first day of Spring!
Stan

Sent from my iPhone:

Stan Halle, Managing Director & PCO -- HHCG
(O) 503-625-1265
(C) 503-319-3011

On Mar 26, 15, at 11:25 PDT, CHICKERING Sonny P <Sonny.P.CHICKERING@odot.state.or.us> wrote:

Tim, Kelly and I met as planned with our internal design team on Tuesday the 24th. The purpose of the meeting was to bring them up to speed on the State Roadway and Traffic Engineers response, and to address any remaining concerns or issues. After considerable discussion and brainstorming, the team began work to prepare an ODOT intersection design consistent with the no-thru-movement concept.

I am anticipating the ODOT design will be very similar to prior iterations provided by Brent Ahrend and Mackenzie with additional tweaks to the lane alignments and island configurations. We will share our design with you as it nears completion so you can confirm that it meets the primary purpose (no thru-movements), and secondary conditions (no new Right of Way, Environmental Permits, etc.) we have discussed and agreed to. Our intent is to complete the design within two weeks, so it can be presented to local elected officials and the public next month as planned.

Thank you again for your cooperation and patience through this process, and I look forward to rolling this concept out for review and comment by the local elected officials and general public.

Sonny P.A. Chickering, PE
Oregon Dept. of Transportation
Northwest (Region 2) Manager
541-517-1955

On May 19, 15, at 10:56 PDT, CHICKERING Sonny P <Sonny.P.CHICKERING@odot.state.or.us> wrote:

Stan Halle representing the Ladd Hill Neighborhood Association (LHNA) requested a meeting with Director Garrett at the ODOT HQ building in Salem. Director Garrett assigned Region 2 Manager Sonny Chickering, and Area 3 Manager Tim Potter to attend. Sonny was able to attend in person, while Tim called in to the meeting.

Mr. Halle provided an overview of his goals for the meeting, and then presented a variety of information. Each topic was followed by a period of discussion and questions, some resulting in

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outcomes or direction to staff by Director Garrett.

LHNA Analysis of Local Street System Impacts

Initial conversations with the Parkway Committee and City of Newberg staff generated several questions about the potential for traffic diverted due to "no through movements across OR219" to negatively affect operations on the local street system. The effect of the proposed intersection geometry on emergency service providers was also raised as a potential concern.

In response to these issues, LHNA has authorized their traffic engineering consultant to model likely traffic flow should the no through movement design be implemented. While the analysis was not yet complete, initial results indicate only minimal volume to capacity (v/c) impacts on the local street network. The final analysis may include some recommended low cost mitigation at specific intersections, but those results are not yet confirmed. Mr. Halle indicated the final analysis is expected on or around May 21st.

In addition to these local street impacts, the analysis to date indicated performance issues on the state system as well, such as a failing v/c on Hwy 99 at Springbrook, and at the intersection of Springbrook and OR219. Sonny indicated the situation at Hwy 99 was known by ODOT, the City and other partners and had been accepted as an interim condition for an intersection that was already failing in the peak hour. The situation at Springbrook and OR219 was not known to ODOT. The LHNA analysis to date indicates the situation may be due to the current project only including one southbound approach lane on OR219, rather than the two shown in the project EIS.

Mr. Halle indicated their final traffic analysis would be shared with ODOT upon its completion.

Discussion of the Proposed "Compromise" Solution

Mr. Halle explained to Director Garrett that the ODOT proposal to consider reducing the "no through movement" design, to a no through design in the eastbound direction was not acceptable to LHNA. The association feels they have demonstrated the potential for increased westbound traffic from I-5 to the bypass, and that there is significant risk to residents of Wilsonville Rd. as a result. For this reason, the association is unwilling to consider a compromise design. Also of concern is that introduction of a compromise solution could undermine continuing efforts to reach concensus in support of the current no through movement design.

ODOT Continuing Toward Contract Bid Let on Current Schedule

Director Garrett informed Mr. Halle of his recent direction to the Region that the Springbrook phase of the Bypass (1G) should be put out to bid on schedule, regardless of the current discussions about the Wilsonville Rd. connection. It is imperative that the department deliver the project in accordance with commitments and expectations of the state legislature, who specifically authorized funding for the project as part of the Jobs and Transportation Act.

Sonny explained that in order to assure meeting this obligation and direction, he has directed the project team to proceed toward ad, bid and award of the project as currently designed (with the Wilsonville Rd. connection). The Region will continue, on a parallel track to work with the LHNA and the City of Newberg to identify a mutually acceptable solution to the associations concerns. Should such a solution be reached, the project plans, specifications and estimates will be modified by addendum or contract change order to allow construction of the final agreed

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upon design.

Continued Collaboration on Mutually Agreeable Solutions
Director Garrett encouraged the Region to continue facilitating and participating in meetings with the City of Newberg or others to pursue a resolution. He also encouraged Mr. Halle and the association to be open to compromise solutions should they continue to encounter resistance to the no through movement proposal. The next anticipated step in the process will be review of the LHNA traffic analysis results and sharing of this information with City staff. Tim Potter will continue to be ODOT's lead representative in discussions with the City.

Assignments to Staff Related to Friday's Meeting
On Monday May 18th, Sonny spoke to Kelly Amador and gave her the following assignments:

- Review project records to determine how and why a decision was made to construct only one southbound lane approaching the intersection of OR219 at Springbrook.
- Discuss with planning staff the criteria that should be used to determine whether a TSP amendment would be triggered by the no through movement design, or by any accompanying mitigation on the local street network.

Sonny P.A. Chickering, PE
Oregon Dept. of Transportation
Northwest (Region 2) Manager
541-517-1955

On May 19, 15, at 12:01 PDT, CHICKERING Sonny P <Sonny.P.CHICKERING@odot.state.or.us> wrote:
I agree that all four of your additions below are specifics that were a part of the meeting discussions.

Sonny P.A. Chickering, PE
Oregon Dept. of Transportation
Northwest (Region 2) Manager
541-517-1955

From: Stan Halle (HHCG) [mailto:change1@mindspring.com]
Sent: Tuesday, May 19, 2015 11:41 AM
To: CHICKERING Sonny P
Cc: Sharon Halle; John Freeman; Cole Presthus; Brent Ahrend; POTTER James T * Tim; AMADOR Kelly L; Ralph Bloemers; Henry Richmond; Spike Smith; matthew.l.garrett@odot.state.or.us.readnotify.com
Subject: IMPORTANT ADDITIONS Re: Summary Notes of May 15 Meeting with Director Garrett
Importance: High

Hi Sonny:

Thanks for drafting the Summary Notes from our discussion the the Director last Friday. You have accurately captured the essence of our one hour meeting, however, a few important points of our discussion need to be added:

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1. The Director proposed to Mr. Halle that ODOT could construct a no-thru eastbound, all-thru westbound intersection at Wilsonville Rd./OR219/Bypass (east terminus), monitor traffic volumes before and after opening and then take any needed mitigation actions. Mr. Halle made a counter-proposal, saying that given that LHNA's traffic engineer's study of the ripple-effect impacts on other local Newberg streets was minimal (<4%), ODOT should instead build the no-thru movement intersection as jointly designed by ODOT & LHNA, monitor traffic volumes before and after opening and then take any needed mitigation actions. Mr. Halle expressed that this counter-proposal made more sense based on the analysis and that he asked that ODOT support that potential resolution in upcoming discussions with ODOT/Newberg Staff and LHNA.

2. Mr. Halle informed the Director, Mr. Chickering and Mr. Potter that PHNA's traffic engineer was holding a phone-con with Ms. Kaaren Hofmann, City of Newberg Engineer to review the analysis verbally in response to Newberg Staff requests made at the 23 April meeting with ODOT and LHNA.

3. Mr. Halle agreed with the Director's desire not to cause any unnecessary delay's in the project schedule, indicating that such delay's could emanate from (i) Newberg Staff insisting that a new TSP amendment was needed and the the DLCD would also have to review/approve such an amendment – likely to cause 90-120 day delay; or (ii) that the LHNA may be forced to take other actions necessary to prevent the thru-movement Option 1 from being implemented. He reiterated that it was in everyone's best interests to reach agreement with Newberg and ODOT soon, so as to ensure that the project moves forward in a timely manner.

4. Mr. Halle also indicated to the Director that the concerns being expressed by the LHNA did not just represent the 100's of local Yamhill & Clackamas County families using Wilsonville Road (including several active farms), but also echoed the concerns expressed in letters sent to ODOT & the FHWA from Clackamas County Commission Chair, the City of Wilsonville, the West Linn-Wilsonville School District, and all three Yamhill County Commissioners. He also mentioned that I-5 Exit 283 and the Boones Ferry Rd./Wilsonville Rd. intersection were already at or near capacity – another reason why LHNA, et al. could not support a partial thru-movement design.

Stan

Stan Halle, LHNA Director, Chair-person Bypass Impact Committee (o) 503-625-1265 (c) 503-319-3011

On Jul 11, 15, at 1:20 PDT, CHICKERING Sonny P <Sonny.P.CHICKERING@odot.state.or.us> wrote:

I have incorporated all of Stan's comments below.

Brent, I am thinking the general statement in third paragraph covers your much more detailed first comment.

First, I would point out ODOT stated they believe a Newberg TSP amendment is needed because of the changes to the Hwy 219/Springbrook intersection that are different than the detailed

diagram included the City's December 2013 TSP amendment (single southbound lane vs two southbound lanes). It was noted by LHNA that the Hwy 219/Bypass/Wilsonville Road intersection is also different, and would need to be included in the TSP amendment as well (single through lane with a single right turn lane vs two through lanes and two right turn lanes).

Terry, Do you agree with Brent's second comment, and including it in the summary notes?

Second, I did not see any mention of an exception to ODOT's operational standards with the single through lane on Hwy 219 at Springbrook as noted by Terry. I also recall Terry mentioning a need for an amendment to the Oregon Highway Plan.

Version 2 – July 1 Meeting Summary Notes (ODOT & LHNA)

Stan Halle representing Ladd Hill Neighborhood Association (LHNA) requested a meeting to discuss the June 24 written response from the City of Newberg. The letter contains the City's assessment and concerns regarding additional detailed traffic information developed by Mackenzie and submitted by LHNA. In attendance were Stan Halle, John Freeman and Brent Ahrend representing LHNA, and Sonny Chickering, Tim Potter, Kelly Amador, Terry Cole, Senior Region 2 Transportation Planner, and Jim West – Region 2 Tech Center Manager representing ODOT.

The group discussed the significant points contained within the City's response:

- **Although Mackenzie and the LHNA assert impacts to the local street system are "minor", there are impacts.**
- **No documentation has been provided to show "significant impacts" to Wilsonville Road.**
- **If the intersection design at Wilsonville Rd. is to be revisited, the City requests a third scenario be modeled – leaving Wilsonville Rd. connected to Springbrook Rd., but adding a traffic signal.**
- **The proposed no-thru movement intersection form differs materially from the approved City TSP and therefore a modification of the project design will require a TSP amendment.**

ODOT and LHNA also concluded that:

- **The current ODOT intersection designs at OR219 and Springbrook Rd. and OR219 and Wilsonville Rd. also differ from the approved City TSP and therefore will require a TSP amendment(s) prior to construction.**

During the conversation ODOT acknowledged that the current design does deviate from the existing TSP and ODOT will need to process an amendment prior to bid let in December 2015.

There was considerable discussion regarding the timing and form of the TSP amendment(s). LHNA requested that ODOT include the no-thru movement intersection design in any amendment application to the City. Doing so would demonstrate ODOT's support of the alternative design, and be consistent with our ongoing collaborative discussions.

Terry Cole (ODOT) provided information on the process and potential alternatives for submitting TSP amendment(s). In addition to the all-inclusive application supported by LHNA, other options

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would include:

- Fast tracked submission of the amendments necessary to bid and construct the project (stay on schedule), and a separate submission for a change in the Wilsonville Rd. intersection design.
- An application that does not stipulate the specific intersection design and therefore allows either.
- An application submittal that allowed for a line item veto by the City.

Complicating the choice is the fact that the City's TSP is currently being updated and is expected to be adopted this fall – would the design changes be processed as amendment(s) to the current TSP, or changes to the draft update document? The group thought that keeping any amendment or amendments uncoupled from the TSP comprehensive update made sense, so as to not add another complicating factor that could impact schedule.

LHNA also inquired as to whether the change(s) in project design would require modification of the project Final Environmental Impact Statement. Terry Cole replied that they would not, since the FEIS is essentially a "30% solution" and the design is expected to evolve.

Next Steps:

- LHNA will be meeting with City of Newberg staff on July 2nd to go over the response letter.
- ODOT will meet asap with Dept. of Justice attorneys to discuss process and strategies for submission of the TSP amendment(s).

Sonny P.A. Chickering, PE
Oregon Dept. of Transportation
Northwest (Region 2) Manager
541-517-1955

From: Brent Ahrend [mailto:BAhrend@mcknze.com] Sent: Monday, July 13, 2015 5:44 PM To: CHICKERING Sonny P Subject: Newberg TSP Amendment

Sonny,

I had the opportunity to meet with Matt Garrett earlier today. He shared the direction he provided to you regarding keeping the Bypass project on schedule and working with the City and LHNA to reach a resolution regarding Wilsonville Road. He understands the potential for project delay through the TSP amendment process, and noted concern that meetings were occurring without all parties involved. He really believes we should be working together and in an open manner.

I shared this with Stan and he mentioned the two of you had communicated by text on Friday about the upcoming ODOT/Newberg meeting regarding the TSP amendment, and that you mentioned it would be better to not have LHNA there so Newberg staff would be more forthcoming. Instead of an LHNA representative attending, I would propose that only I attend, as a traffic engineer, to help with the process and requirements for an amendment.

I understand Mayor Andrews has suggested a right in/out option for Wilsonville Road at Springbrook be considered. The option was addressed in our May 22 letter to the City, and I believe LHNA will be providing you their comments and concerns.

Please consider including me in the upcoming meeting with the City of Newberg. I really believe we can come to an agreement much more quickly with involvement by all parties. It is important that any TSP amendment be supported by LHNA as well as the City and ODOT, and my involvement could help to make that happen.

Thanks for your consideration, and should I be invited, please let me know ASAP the time and location of the meeting.

Brent T. Ahrend, PE
Senior Associate | Asst Department Head – Transportation Planning
P 503.224.9560 W mcknze.com C vcard RiverEast Center 1515 SE Water Ave, Suite 100 Portland OR 97214

On Jul 14, 15, at 6:03 PDT, CHICKERING Sonny P <Sonny.P.CHICKERING@odot.state.or.us> wrote:

Brent – thank you for the communication and update on your conversation with Director Garrett.

We remain committed to facilitating a mutually agreeable solution to the Wilsonville Rd. Connection, and will continue working with you and LHNA toward that end.

Regarding the upcoming meeting with the City of Newberg, it is common practice in the public sector for ODOT staff to sit down with staff from the agency of jurisdiction prior to submitting application for a TSP amendment. It is an informal venue for the exchange of information, and receipt of advice regarding various strategies for submitting a successful application. I see it as no different than the meeting LHNA chose to have with the City on July 2nd to discuss the City's letter of response to your traffic analysis. LHNA had no need for ODOT to be there, and you may have had a much more in depth and open conversation than if ODOT had been in the room.

Our intent is to meet with you and LHNA very soon after our meeting with City staff. At that time, we can share the various pieces of information gathered and discuss alternatives for moving forward. My hope is that LHNA will see a TSP amendment path that satisfies their primary goals while allowing ODOT and the City to fulfill our obligations to the legislature and the public - move forward to construction of Phase 1G – without further delay or controversy. I hope you will continue to play a part in moving us all to such a conclusion.

Tim will be in touch soon after his meeting with the City. I remain away from the office on business for most of this week, and I have not heard whether the meeting has been scheduled yet.

Sonny P.A. Chickering, PE
Oregon Dept. of Transportation

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Northwest (Region 2) Manager
541-517-1955

On Jul 14, 15, at 6:11 PDT, CHICKERING Sonny P <Sonny.P.CHICKERING@odot.state.or.us> wrote:
Thanks for this added perspective Stan. We'll be in touch soon.

Sonny P.A. Chickering, PE
Oregon Dept. of Transportation
Northwest (Region 2) Manager
541-517-1955

From: Stan Halle (HHCG) [mailto:change1@mindspring.com]
Sent: Tuesday, July 14, 2015 12:29 PM
To: CHICKERING Sonny P
Cc: POTTER James T * Tim; AMADOR Kelly L; Brent Ahrend; Cole Presthus; John Freeman; Henry Richmond; Ralph Bloemers; Sharon Halle
Subject: 'Right In, Right Out' Only Option for Wilsonville/Springbrook Intersection

Hi Sonny:

While we are pleased that Mayor Andrews took the initiative to call ODOT suggesting that the City would support the 'Right In, Right Out' Only Option for Wilsonville/Springbrook Intersection, we wanted to provide you with some feedback before this option gets any traction:

1. The analysis (ref: 22 May 2015 memo from Mackenzie Engineering to Newberg staff) that Brent did shows in considerable detail that:
    a. Leaving Wilsonville Rd. as currently configured, but with a 'Right In, Right Out' Only configuration at Springbrook Rd. actually *increases traffic* on local streets when compared to the 'No-thru' Option at Wilsonville Rd/Hwy 219, opposite the bypass.
    b. The situation is further exacerbated with to the 'Right In, Right Out' Only at 2nd Street East and Hwy 219, which then requires drivers to travel considerably farther on local Newberg streets.

2. Our biggest concern is that the 'Right In, Right Out' Only Option at Wilsonville Rd. & Springbrook turns Wilsonville Rd. into a *preferred alternative* to traffic coming from the Bypass attempting to go back to Hwy 99W via Springbrook. As traffic backs up from both the Springbrook Rd./99W and Springbrook/Fernwood/2nd St. signals, turning right onto Wilsonville Rd. will look better and better.

3. An additional concern is that Wilsonville Rd. residents and farmers won't be able to get to and from Hwy219 and points south unless they use Renee-to-Corral Creek-to-Frenwood-to-Springbrook or travel through the intersection of Hwy 99W/Hwy 219/Villa Road.

BOTTOM LINE: Newberg should be more concerned about the increase in traffic on local streets from this 'Right In, Right Out' Only Option than would be the case with the 'No-Thru' Design. The City of Wilsonville, Clackamas County, Yamhill County, the West Linn-Wilsonville School District and the LHNA cannot support an option that ends up

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making Wilsonville Rd. an obvious alternative to avoid congestion that is already expected on Springbrook Rd.

We continue to feel that the Bundled TSP Amendment approach including the 'No-Thru' Design is the best path forward for all concerned. We look forward to resolving this with you, Newberg, etc. as soon as is practicable.

Stan
PS: Please feel free to share this summary with Newberg staff, ...

Stan Halle, LHNA Director, Chair-person Bypass Impact Committee (o) 503-625-1265 (c) 503-319-3011

On Jul 25, 15, at 4:40 PDT, CHICKERING Sonny P <Sonny.P.CHICKERING@odot.state.or.us> wrote:

Stan Halle representing Ladd Hill Neighborhood Association (LHNA) requested a meeting to discuss the June 24 written response from the City of Newberg. The letter contains the City's assessment and concerns regarding additional detailed traffic information developed by Mackenzie and submitted by LHNA. In attendance were Stan Halle, John Freeman and Brent Ahrend representing LHNA, and Sonny Chickering, Tim Potter, Kelly Amador, Terry Cole, Senior Region 2 Transportation Planner, and Jim West – Region 2 Tech Center Manager representing ODOT.

The group discussed the significant points contained within the City's response:

- Although Mackenzie and the LHNA assert impacts to the local street system are "minor", there are impacts.
- No documentation has been provided to show "significant impacts" to Wilsonville Road.
- If the intersection design at Wilsonville Rd. is to be revisited, the City requests a third scenario be modeled – leaving Wilsonville Rd. connected to Springbrook Rd., but adding a traffic signal.
- The proposed no-thru movement intersection form differs materially from the approved City TSP and therefore a modification of the project design will require a TSP amendment.

ODOT and LHNA also concluded that:

- The current ODOT intersection designs at OR219 and Springbrook Rd. and OR219 and Wilsonville Rd. also differ from the approved City TSP and therefore will require a TSP amendment(s) prior to construction.

During the conversation ODOT acknowledged that the current design does deviate from the existing TSP and ODOT will need to process an amendment prior to bid let in December 2015.

There was considerable discussion regarding the timing and form of the TSP amendment(s). LHNA requested that ODOT include the no-thru movement intersection design in any amendment application to the City. Doing so would demonstrate ODOT's support of the

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alternative design, and be consistent with our ongoing collaborative discussions.

Terry Cole (ODOT) provided information on the process and potential alternatives for submitting TSP amendment(s). In addition to the all-inclusive application supported by LHNA, other options would include:

- Fast tracked submission of the amendments necessary to bid and construct the project (stay on schedule), and a separate submission for a change in the Wilsonville Rd. intersection design.
- An application that does not stipulate the specific intersection design and therefore allows either.
- An application submittal that allowed for a line item veto by the City.

Complicating the choice is the fact that the City's TSP is currently being updated and is expected to be adopted this fall – would the design changes be processed as amendment(s) to the current TSP, or changes to the draft update document? The group thought that keeping any amendment or amendments uncoupled from the TSP comprehensive update made sense, so as to not add another complicating factor that could impact schedule.

The LHNA also asked if the lane reductions on OR 219 would impact ODOT mobility standards. Terry replied that ODOT was already planning to request that the OTC amend the OHP to establish alternative mobility targets along OR 219 and on OR 99W in Newberg, regardless of the design at 219 and Springbrook, as it and many other locations in Newberg would not meet the current OHP mobility targets at the end of the 20 year planning horizon. He added that this was an essentially administrative "clean-up" issue that ODOT would deal with as a package OHP amendment after the TSP update is adopted.

LHNA also inquired as to whether the change(s) in project design would require modification of the project Final Environmental Impact Statement. Terry Cole replied that they would not, since the FEIS is essentially a "30% solution" and the design is expected to evolve.

Next Steps:

- LHNA will be meeting with City of Newberg staff on July 2nd to go over the response letter.
- ODOT will meet asap with Dept. of Justice attorneys to discuss process and strategies for submission of the TSP amendment(s).

Sonny P.A. Chickering, PE
Oregon Dept. of Transportation
Northwest (Region 2) Manager
541-517-1955

On Aug 27, 15, at 4:31 PDT, CHICKERING Sonny P <Sonny.P.CHICKERING@odot.state.or.us> wrote:

Thank you for taking a turn at creating meeting minutes – you are much more timely than I am.

Generally, your notes are spot on. I have suggested a few edits, and clarifications below.

Regarding your questions:

1. mike.morrow@dot.gov, Tom is too new, I've never communicated with him before or since.
2. Kelly Amador and Tim are working with the consultant to incorporate the modifications we discussed. We have not received feedback on the first draft from the City, and are reaching out to them today to see if we can get it.
3. Matt will be discussing the issue with Mayor Andrews and Comm. Springer at 3:30 tomorrow afternoon. I can confirm he committed to calling you afterward, but don't know what time.

Sonny P.A. Chickering, PE
Oregon Dept. of Transportation
Northwest (Region 2) Manager
541-517-1955

From: Stan Halle (HHCG) [mailto:change1@mindspring.com]
Sent: Wednesday, August 26, 2015 8:32 PM
To: CHICKERING Sonny P
Subject: DRAFT Minutes for the ODOT/FHWA/LHNA/CC Meeting Monday 24 Aug

Hi Sonny:

I thought I'd send these for your review before broadcasting them. A couple of questions:

I. Do you have eMail addresses for Tom and Mike from FHWA?
II. When will we be seeing the next revision of the TSP Amendment? The sooner the better in terms of Newberg having a 'correct version' to analyze pre-City Planning Commission.
III. What time is Matt Garrett's conference call with Allen Springer and Bob Andrews Friday? What time is he planning on calling me?

Thanks,
Stan

FINAL MINUTES Meeting in Conf Rm 149 Directors Office ODOT 1pm Monday 24 Aug 2015 (based on ODOT Feedback)

PRESENT:

FHWA – Phil Ditzler (Division Administrator), Tom Goldstein (Asst. Div Admin), Mike Morrow (Field Ops Team Leader)

ODOT – Matt Garrett (Director), Sonny Chickering (Region 2 Manager), Tim Potter (Areas 1&3 Manager)

Clackamas County – Mike Bezner (Transportation Engineering)

LHNA – John Freeman (Director), Stan Halle (Director, Bypass Impact Committee Chair)

SUMMARY:

1. John Freeman & Stan Halle asked several questions about the current situation in Newberg and the Draft TSP Amendment:

a. ODOT indicated that Newberg Engineering & the Mayor were made aware of ODOT's intention to go with the 'no-thru' design in the Draft TSP Amendment prior to its submission to Newberg & LHNA last Friday (so no surprises). ODOT had not gotten any reaction as yet from

Newberg as of 1pm Monday.

b. *ODOT had inserted language into the Draft TSP Amendment so that local traffic near both the OR219 southbound single lane and 'no-thru' configurations, etc. would be monitored and mitigated, if necessary.*

c. ODOT does not know how the Newberg City Planning Commission (NCPC) or Newberg City Council (NCC) will vote on this Amendment. They could pass it or make some modifications to it.

d. To continue ODOT's effort to pre-sell the Draft TSP Amendment & 'no-thru' design, Matt Garrett has a conference call set up for this Friday 28 Aug with Mayor Andrews and Yamhill County Commissioner Allen Springer (who has been working in the background to help 'settle this matter').

e. Stan Halle suggested that Matt Garrett add another 'selling' point to his talks with Andrews/Springer: *'By serving the greater good for the Region, Newberg would effectively enlist the coalition's help to muster the political will power & broader support for getting the Legislature to find the funding to finish the Bypass.'* Matt Garrett liked the idea. He also indicated that he is positioning the 'no-thru' design as 'blunting the potential trauma of the Bypass terminating at Wilsonville Rd.' and was committing ODOT to Newberg to monitor and remove any significant 'deficit', e.g., increased traffic on local streets.

f. Matt Garrett agreed to call Stan Halle on Friday following this conference call with his take on the outcome. He also mentioned that, if needed, ODOT would host a meeting with all parties/jurisdictions in the room.

2. LHNA asked about ODOT's plan/commitment to change the construction drawings in the bid package:

a. ODOT's plan is make these changes after the TSP has been approved. This would be through a Contract Change Order to the construction contract itself utilizing existing construction bid line items – much simpler and less costly than adding new work items to the Contract.

b. ODOT has already changed the bid package so that the build-sequence on this *fourth & final* part of Phase 1 (called Contract 1G) puts the Wilsonville Rd. intersection last. That way, no work or purchase of unneeded materials, signage, etc. would be made prior to the changeover to the 'no-thru' design.

c. ODOT also indicated that the internal process necessary to run a parallel track or make the change to 'no-thru' now is too resource-constrained and runs the risk of losing a whole 'construction season'.

d. ODOT said that once Newberg City Council passes the TSP Amendment (in whole or modified), it then gets rolled up into *the City Comprehensive Plan* – without any opportunity to override it. On the other hand, the LUBA appeal process, assuming both standing and grounds for a land use issue, is an option at that stage.

3. LHNA then walked through its feedback on the Draft TSP Amendment point-by-point:

a. All references to 'LHNA believes, ...' need to be changed to include the members of our coalition. Mike Bezner indicated his agreement.

b. Need to change the factually wrong reference to ODOT analysis showing no impact, ... LHNA handed Tim Potter eMails documenting that both ODOT staff and its consultants (Kittelson/Parametric) are on record admitting that impact Wilsonville Rd. could not be determined by existing modeling or wasn't even considered.

c. Matt Garrett then directed Sonny Chickering and Tim Potter: "You need to make sure this Draft TSP Amendment is accurate & factual."

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5. John Freeman then showed ODOT & the FHWA folks LHNA's Complaint: *Note: neither ODOT nor FHWA reviewed the document. He held it up so we could see the document existed.*

a. Indicating that without knowing what NCPC or NCC will do with the Amendment 60-90 days from now, we are quickly running out of options and are ready to file our complaint & seek an injunction.

b. Stan Halle asked Matt Garrett what he would do were he in LHNA's shoes. He indicated 'do what you have to' but that ODOT was trying to do everything in its power to get the 'no-thru' design implemented.

Stan

Stan Halle, LHNA Director, Chair-person Bypass Impact Committee;
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MACKENZIE.

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MEETING MINUTES

PROJECT NUMBER:	2130551.03	**ISSUE DATE:**	April 28, 2015
PROJECT NAME:	Wilsonville Road Alignment Assistance		

RECORDED BY:	Brent Ahrend, PE – Traffic Engineer
TO:	FILE
PRESENT:	Jessica Pelz, Doug Rux, Kaaren Hofmann – City of Newberg Tim Potter, Kelly Amador – ODOT Stan Halle, Cole Presthus – Ladd Hill Neighborhood Association Brent Ahrend – Mackenzie

SUBJECT: **Meeting Minutes #1 (April 23, 2015)**

INFORMATION ITEMS

Stan Halle gave a short intro as to why we were having this meeting, citing Mayor Andrews' statement at the Yamhill County Parkway Committee (YCPC) last week suggesting that we needed to work with the Newberg Staff to address his (and others') concerns about the ODOT/LHNA no-through movement option. He also explained who the LHNA was and that they've been actively following and communicating with ODOT regarding the evolution of the Bypass from 2002 through the present. He noted neighborhood concerns greatly increased when the Newberg City Council passed an amendment to the City Transportation System Plan December 2013 that allowed the Bypass to terminate directly across from a reconfigured Wilsonville Road.

Tim Potter provided some history from mid-2013 forward, when he/ODOT acknowledged to LHNA at a Newberg Open House that ODOT had not considered the potential impact on Wilsonville Road. He also indicated that their intention was not to adversely impact any local street (including Wilsonville Road), and that the Bypass was designed to relieve traffic congestion along the 99W corridor without undue negative impacts elsewhere. He briefly mentioned the difficult challenge that ODOT had in applying limited capital funds to build a four mile section (aka Phase 1) of a 15+ mile Bypass – limited by the State Legislature.

Brent Ahrend provided a summary of his involvement since late 2013, and concerns that Wilsonville Road would be used by a significant number of drivers as an extension of the bypass. Through an initial review of the modeling prepared for the bypass, it was discovered the currently planned configuration of Wilsonville Road was not modeled and that the model assumed a fixed volume at the east edge of Newberg, such that the volume would not change regardless of the road alignments within Newberg. It is his opinion that in order to properly model the volume changes on Wilsonville Road from this alignment, the model would need to extend to I-5 from Hwy 99W to the Aurora interchange.

Brent Ahrend then provided a summary of the alternative alignment options that had been considered and discussed between ODOT and LHNA since January, prior to ODOT suggesting the proposed no through movement option. Figures showing the rerouted volumes as compared to the current "option 1" proposal were presented. He noted the volumes are those that assume no increase in traffic on Wilsonville Road, which are likely appropriate for scenarios with no direction connection for through

vehicles. When asked by Newberg staff why the current proposal was not brought to the City sooner, it was noted ODOT needed to go through their internal reviews to confirm the proposal addresses the needs for traffic signals, freight movement, and operations. LHNA provided a copy of the letter dated January 17, 2105, that was sent to ODOT Director Matt Garrett and FHWA Oregon Division Administrator Phillip Ditzler, and had been copied to Mayor Andrews of Newberg at that time. Discussion followed regarding the issues with each option:

1. Leaving Wilsonville Road as it is currently connected to Springbrook. ODOT's analysis indicates the intersection would need to be limited to right-turns, and a traffic signal could not be installed due to spacing and queuing from the signal planned at Hwy 219. The LHNA had suggested keeping this alignment for now, monitoring traffic conditions at the opening of the bypass, and make adjustments accordingly. ODOT pointed out that the biggest risk here was the unlikely availability of funds and the time it would take to secure funding, design a fix, and implement it (at least 3-5 years).

2. Building the intersection with a configuration halfway between the current "Option 1" full movement configuration and the no-through movement option, by allowing westbound traffic from Wilsonville Road onto the Bypass. LHNA is very concerned that this kind of halfway configuration would too easily create a pent-up demand for the two-way flow and draw Bypass traffic from I-5 through Wilsonville, adding trips to the interchange which is already at capacity. Clackamas County and the City of Wilsonville have also expressed their concerns about the potential impacts of this scenario.

3. Disconnecting Wilsonville Road from the Bypass altogether using Adolf Road down to Highway 219 at Wynooski, per ODOT's final preferred full Bypass plan. ODOT reiterated that this was too costly and would delay the Bypass significantly due to needing new right-of-way acquisition and realigning the junction of Adolf Road with Hwy 219. The LHNA concurred. It was also noted the alignment would still not be at the ultimate full bypass planned location. Tim Potter noted TIGER funding for the bypass was to provide a merge lane from the bypass to Hwy 219 southbound and a free right from Hwy 99W to the bypass, but was insufficient to fund an Adolf Road alignment as suggested by Doug.

4. A combination of the current Wilsonville Road alignment and an Adolf alignment. This option has the same issues as "2" and "3" noted above.

City of Newberg staff expressed several concerns:

1. How much would traffic volume increase on East 2nd Street (between Springbrook and OR219) if the no-through movement option were implemented? How does that compare to the impact of leaving Wilsonville Road as it currently is configured? Kaaren noted the figures prepared by Mackenzie assume left turns from 2nd Street to Hwy 219 and asked these be corrected to reflect the planned median and right turn only configuration.

2. Increased traffic volume through Downtown Newberg countering at least part of the benefit of having a Bypass in the first place. It was noted by LHNA that the reroute of traffic that may stay on Hwy 99W through Newberg was small, and most of the local residents along Wilsonville Road were driving into Newberg anyway, and would not be using the Bypass.

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3. Both the Newberg-Dundee Police Chief and Fire Chief have expressed concern about how the no-through movement option might restrict emergency vehicle access across OR219 in either direction. ODOT pointed out that the turn lanes and median design on the no-through movement option would readily allow emergency vehicles to go straight across either eastward or westward.

4. Newberg staff would like to see an analysis of intersection operation to confirm the proposed intersection configuration would not result in any intersections falling below the City's acceptable standards (Delay and Level of Service). The standards and conditions presented in the EIS will be used as a basis for comparison, and are based on the current City of Newberg Transportation System Plan.

City staff noted the Transportation System Plan would need to be updated for this proposed no-through alignment option only if the Level of Service standard is exceeded. Both 2016 and 2035 conditions need to be analyzed. Brent Ahrend asked if the City has volume standards for each street classification, and if that would be a concern for the Transportation System Plan as well. Staff referred him to the current Transportation System Plan, but did not believe any volume thresholds were listed.

Newberg Staff asked where the City of Wilsonville stood on this matter. Stan Halle explained that not only the Wilsonville Mayor and key City Council members were concerned, but that they were joined by the West Linn-Wilsonville School District (and Wood School PTSA), the Clackamas County Commission Chair (John Ludlow), and all three Yamhill County Commissioners. He provided staff with copies of support letters that had been sent to ODOT.

The group will meet again after the following tasks are completed:

1. Brent Ahrend will update the trip assignment to reflect that no left turns will be allowed at the Hwy 219/2nd Street intersection and review LOS anticipated with the reroutes in traffic volumes to compare with City standards.

2. Tim Potter will research the FEIS to find the specific 'Level of Service' and 'Length of Delay' thresholds that were committed to.

3. Once the updated analysis is provided, and as soon as is practical, this group will come back together to assess where we are and whether or not a new Transportation System Plan amendment is needed.

Every effort has been made to accurately record this meeting. If any errors or omissions are noted, please provide written response within five days of receipt.

c: Present

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Ralph Bloemers
Staff Attorney
ralph@crag.org

October 8, 2015

Via Email to legal@newbergoregon.gov
and Hand Delivery
City of Newberg
City Hall
414 E First St
Newberg, OR 97132

Re: Type of Decision on Oregon Department of Transportation's Newberg Dundee Bypass Transportation System Type IV Application (the "Application")

Dear Ladies and Gentlemen:

This office represents the Ladd Hill Neighborhood Association. My colleague Maura Fahey has spoken to the attorney for the City of Newberg and asked for clarification as to whether the City of Newberg intends to follow the procedures necessary for rendering a quasi-judicial decision and issue the necessary findings of fact and conclusions of law with respect to the application entitled "Newberg Dundee Bypass Transportation System Type IV Application." This application was submitted by the Oregon Department of Transportation to the City of Newberg for its review and approval.

The Newberg City Attorney has informed us that the City intends to treat the matter as a legislative decision, not as a quasi-judicial decision. On behalf of the Ladd Hill Neighborhood Association, I write to ask that the City of Newberg reconsider its position and follow the proper procedures.

As you know, the Application details solutions to traffic and safety issues that have been identified through public participation. The Application was submitted by the Oregon Department of Transportation to meet its obligations under the federal law (the National Environmental Policy Act) and mitigate significant negative impacts that would result from the Phase 1 terminus. Specifically, the Phase 1 eastern terminus was found to increase traffic and decrease safety on Wilsonville Road where the temporary configuration of the eastern terminus of the Bypass feeds into local roads.

To address the safety concerns and as mitigation for the potentially significant negative impacts of the temporary configuration, the Oregon Department of Transportation has proposed that the City of Newberg adopt this second amendment to its Transportation System Plan. State law governing amendment to the TSP requires that Newberg follow a specific process and that Newberg substantively determine that the amendment is consistent with State land use laws and goals.

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Oregon courts use a three-part test to determine whether a county's decision is quasi-judicial, considering: 1) whether the process is bound to result in a decision, 2) whether the decision is bound to apply pre-existing criteria to concrete facts, and 3) whether the action is directed at a closely circumscribed factual situation or a relatively small number of people. Newberg must apply pre-existing land use laws and goals to a proposal to make small modifications to an intersection and the lane configuration in a manner that protects public health and safety, as cited in the Comprehensive Plans and TSPs of all affected cities, counties and the State. The Application seeks closely circumscribed changes to a single intersection and a small segment of the terminus, neither of which requires an amendment to the existing TSP map or right-of-way footprint.

Legal Background.

In *Strawberry Hill 4 Wheelers v. Benton County Board of Commissioners*, 287 Or 591, 601 P2d 769 (1979), the Supreme Court stated the general test to be used in determining whether a local government action is quasi-judicial or legislative for purposes of judicial review pursuant to ORS 34.040. Courts look at: (1) whether the process is bound to result in a decision; (2) whether the decision is bound to apply preexisting criteria to concrete facts; and (3) whether the action is directed at a closely circumscribed factual situation or a relatively small number of persons. *Strawberry Hill 4 Wheelers*, 287 Or at 602-603, 601 P2d at 775. In a subsequent decision, this Court emphasized that quasi-judicial decisions involve application of pre-existing criteria to a discrete set of facts. *See Estate of Gold v. City of Portland*, 87 Or App 45, 51, 740 P2d 812, 815 (1987) (action need not result in decision to be quasi-judicial).

Strawberry Hill involved a decision to vacate a road pursuant to ORS 368.580. ORS 368.580 sets forth specific procedures for the county to follow, including the requirements that the county hold a public hearing and prepare a report in support of the determination that the vacation would benefit the public. *Strawberry Hill*, 287 Or at 605. ORS 368.580 did not, however, set forth any specific substantive criteria other than the criteria that the vacation should benefit the public. The State Supreme Court issued the fundamental opinion governing this determination under Oregon law:

> Generally, to characterize a process as an adjudication presupposes that the process is bound to result in a decision and that the decision is bound to apply preexisting criteria to concrete facts. The latter test alone proves too much; there are many laws that authorize the pursuit of one or more objectives stated in general terms without turning the choice of action into an adjudication. Thus a further consideration has been whether the action, even when the governing criteria leave much room for policy discretion, is directed at a closely circumscribed factual situation or a relatively small number of persons.

Id. at 602-02. In its decision, the Supreme Court focused upon whether the decision applies preexisting criteria to a discrete set of facts. The State Supreme Court held that

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the statute at issue in *Strawberry Hill* was "a hybrid." *Id.* at 606. The Court held that the statute channels the decision "by fact finding procedures and broadly stated criteria" and is therefore "a 'quasi-judicial' function for the purposes of the writ of review." *Id.* The question here is whether either the substantive requirements or the procedural requirements at play here require the City of Newberg to render the decision quasi-judicial for purposes of judicial review. As set forth below, the substantive requirements provide specific statutory criteria that must be met and the procedural requirements in this case demand public involvement and a fact-finding procedure to support the decision.

Legal Analysis.

Factor 1: Newberg is bound to make a decision in this case. The proposed TSP amendment application was submitted by ODOT, rather than initiated by the City of Newberg itself. ODOT has stated very plainly that these changes are needed to ensure the safety of Wilsonville Road and to meet land use goals for transportation. Newberg may not simply ignore ODOT's request. Newberg must issue a decision, unless ODOT withdraws the request or ODOT determines that the City approval is not required.

Factor 2: Here ODOT has set forth a suggested application of statewide planning goals and comprehensive plan provisions. The City of Newberg must investigate these and render a decision in light of these criteria. This decision is not a policy decision that will affect future land use decisions. The application presents a decision to change a temporary configuration of the highway to ensure that ODOT meets federal requirements of the National Environmental Policy Act and state land use requirements to ensure safe transportation. As ODOT explains in the proposal, the change does not require any TSP map (as in right-of-way footprint) or text amendments.

Factor 3: The two proposed changes are both confined changes to a small segment of the intersection at the east end of the proposed bypass. The proposed action is directed at a closely circumscribed factual situation related to a temporary configuration of the east end of the bypass and is designed to ensure safety and functionality of the temporary terminus.

All three of these factors are met here. Newberg must review these proposed technical changes requested by ODOT and ensure they meet the criteria in state land use law and render a quasi-judicial decision.

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Conclusion.

The City of Newberg cannot simply label this decision a "legislative" action when it is plainly is a quasi-judicial decision matter that meets all the above tests. Ladd Hill Neighborhood Association requests that the City of Newberg reconsider its position, confirm the above interpretation and provide the public with a legally compliant process for rendering a determination on the quasi-judicial determination that is before it, which includes a hearing and decision by a neutral body of decision-makers and the issuance of findings of fact and conclusions of law. Please feel free to contact me if you have any questions, and we look forward to hearing from you.

Sincerely,

Ralph O. Bloemers

Ralph O. Bloemers
Staff Attorney
Tel. (503) 525-2727

City of Newberg

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October 26, 2015

Ralph Bloemers
Crag Law Center
917 SW Oak Street, Suite 417
Portland, OR 97205

Re: Type of decision for ODOT Type IV application for a Comprehensive Plan amendment

Ralph,

We received your letter regarding whether the city's review process should be quasi-judicial or legislative for the Oregon Department of Transportation (ODOT) application for a Type IV Comprehensive Plan amendment. This is a process authorized in Newberg Municipal Code (NMC) 15.100.060, which plainly states that Type IV Actions are Legislative. The City will follow the requirements of the municipal code.

I appreciate your analysis on the issue; however, the three-pronged analysis laid out by the courts for a quasi-judicial decision has not been met. As you note, the three prongs are:

1) *Is the process bound to result in a decision?* The answer to this is "yes," the NMC requires that an application be processed and a decision rendered.

2) *Is the decision bound to apply preexisting criteria to concrete facts?* The answer to this is not as clear cut. Oregon Administrative Rule 660 Division 12 governs TSPs, and does not specifically spell out criteria for amendments. The applicable portions of OAR 660 Division 12 to this matter are the following:
   - 660-012-0015(4): Cities and counties shall adopt regional and local TSPs required by this division as part of their comprehensive plans. Transportation financing programs required by OAR 660-012-0040 may be adopted as a supporting document to the comprehensive plan.
   - 660-012-0045(1)(c): In the event that a transportation facility, service or improvement is determined to have a significant impact on land use or to concern the application of a comprehensive plan or land use regulation and to be subject to standards that require interpretation or the exercise of factual, policy or legal judgment, the local government shall provide a review and approval process that is consistent with OAR 660-012-0050. To facilitate implementation of the TSP, each local government shall amend its land use regulations to provide for consolidated review of land use decisions required to permit a transportation project.
   - 660-012-0050(5): If a local government decides not to build a project authorized by the TSP, it must evaluate whether the needs that the project would serve could otherwise be satisfied in a manner consistent with the TSP. If identified needs cannot be met consistent with the TSP, the local government shall initiate a plan amendment to change the TSP or

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the comprehensive plan to assure that there is an adequate transportation system to meet transportation needs.

You state in your letter that "State law governing amendment to the TSP requires that Newberg follow a specific process and that Newberg substantively determine that the amendment is consistent with State land use laws and goals." The state law clearly says that the city may determine the approval process for the TSP/comprehensive plan amendment. There are not clear and objective criteria for a comprehensive plan amendment; rather, the amendment must meet comprehensive plan goals and policies and statewide planning goals, which are more aspirational in nature than clear and objective criteria tailored to concrete findings of fact. Your letter additionally states that "The application presents a decision … to ensure that ODOT meets federal requirements of the National Environmental Policy Act and state land use requirements to ensure safe transportation"; however, you do not list any applicable fact based criteria the city would be required to use for a decision. If you have additional information on this subject that you believe the City should consider, please provide that immediately.

3) *Is the action directed at a closely circumscribed factual situation or a relatively small number of persons?* The answer to this question is clearly "no," for several reasons. First, the situation is an intersection in the city's transportation network, and changes to the framework of the intersection have ripple effects throughout the transportation network in that region of the city. Second, due to the ripple effect of the potential transportation network, hundreds of city residents may be impacted by increased traffic through their neighborhoods. Third, the Ladd Hill Neighborhood Association themselves often reference their coalition, which includes Clackamas County, City of Wilsonville, and West-Linn Wilsonville School District, as well as their assertion that the intersection design will impact the 12-plus miles of road in multiple jurisdictions, all the way up to the I-5 interchange in Wilsonville. Fourth, as described in number 2 above, there is not a closely circumscribed factual situation that is easily addressed with clear and objective criteria, but rather a situation requiring analysis of data using professional judgment.

It is clear that any decision made on the intersection potentially impacts a large cross-section of people as well as the regional transportation network, exceeding the bounds for a quasi-judicial decision. In addition, there are not clear and objective criteria tailored to concrete facts that can be relied upon for a quasi-judicial decision. For these reasons, the decision must follow the city's legislative process for a decision on the TSP/Comprehensive Plan amendment.

Please contact me with any questions or if you have additional information you would like to share. We will continue to keep you informed of any actions taken with this application.

Sincerely,

Jessica Pelz, AICP
Associate Planner

cc: Truman Stone, City Attorney; Doug Rux, Community Development Director; Kelly Amador, ODOT Project Manager

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WILSONVILLE ROAD – UNSAFE ALREADY
BYPASS traffic WILL ONLY MAKE IT WORSE

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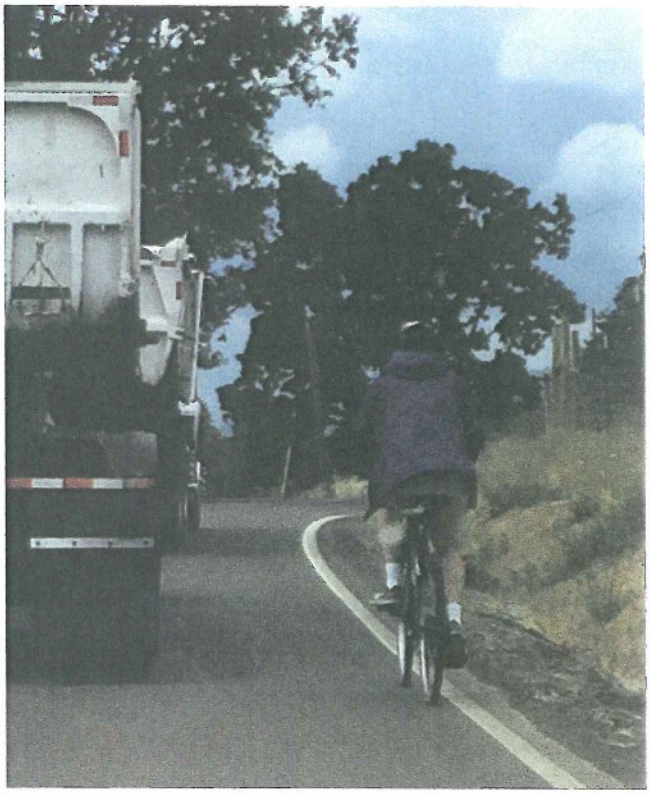

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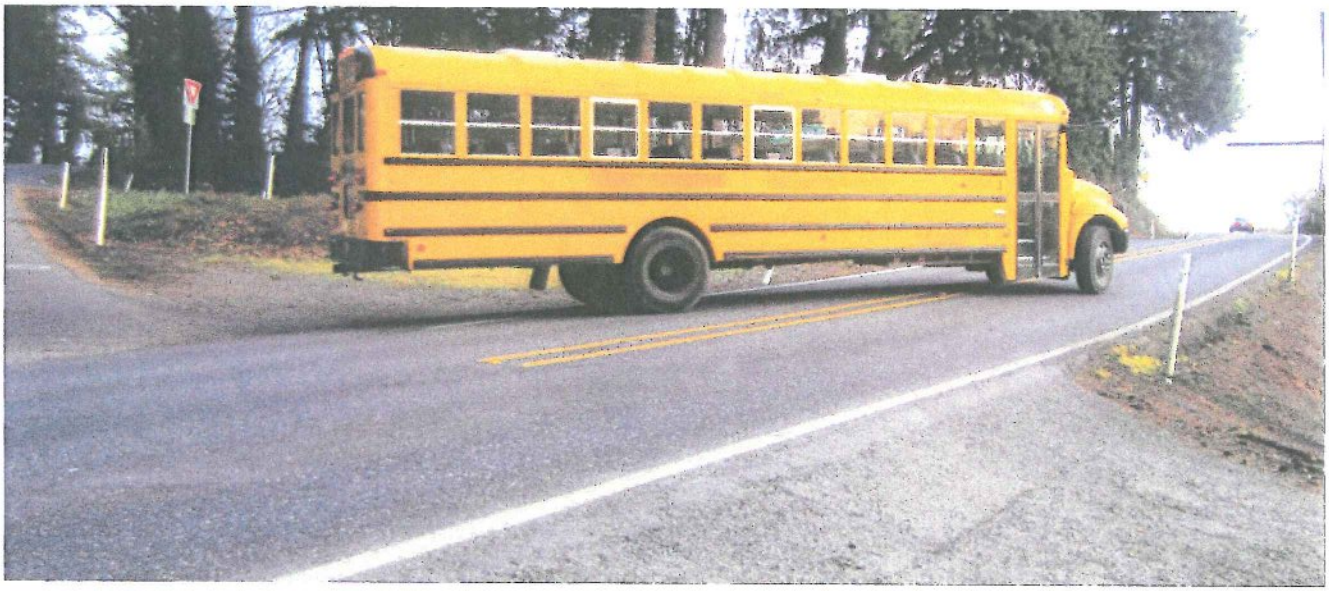

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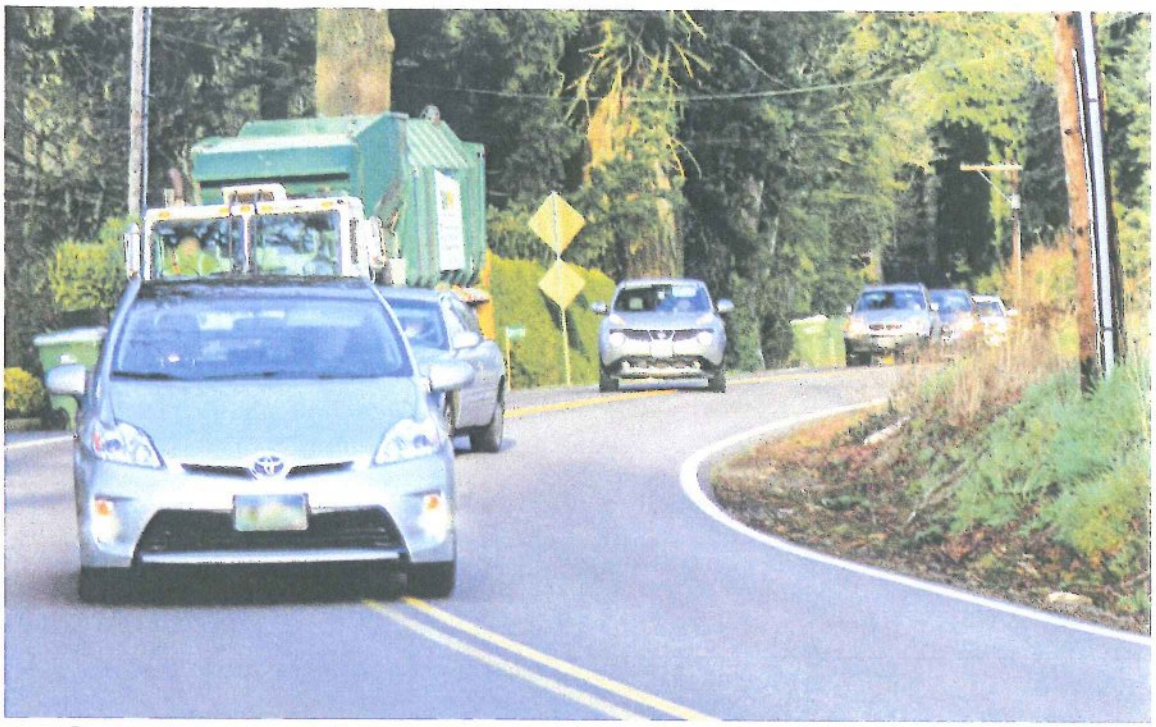

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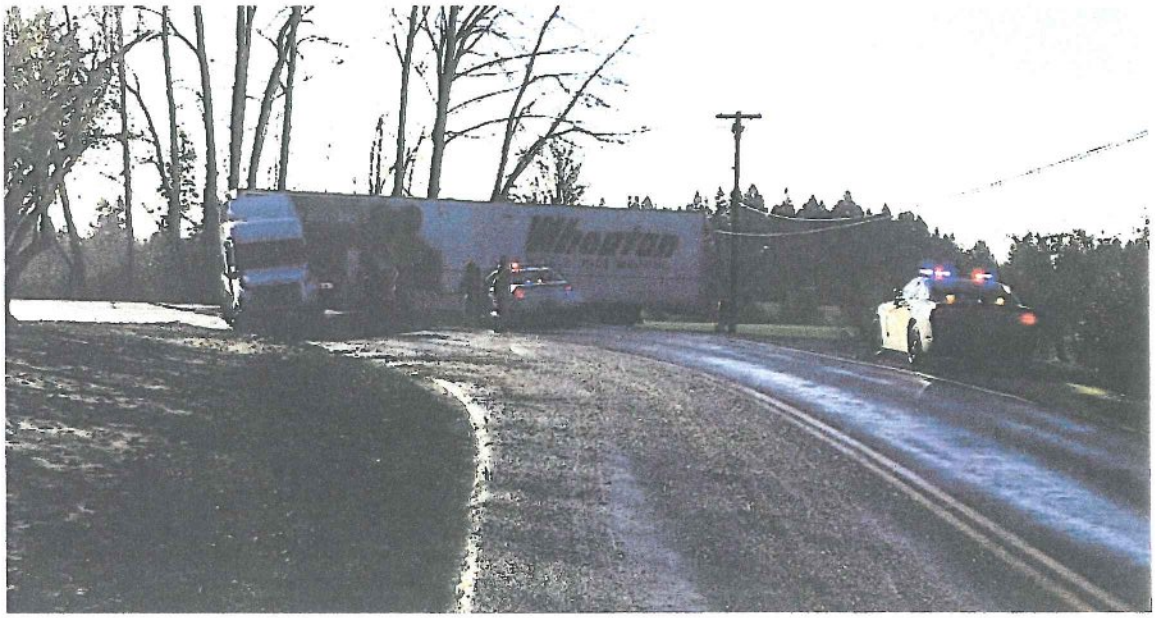

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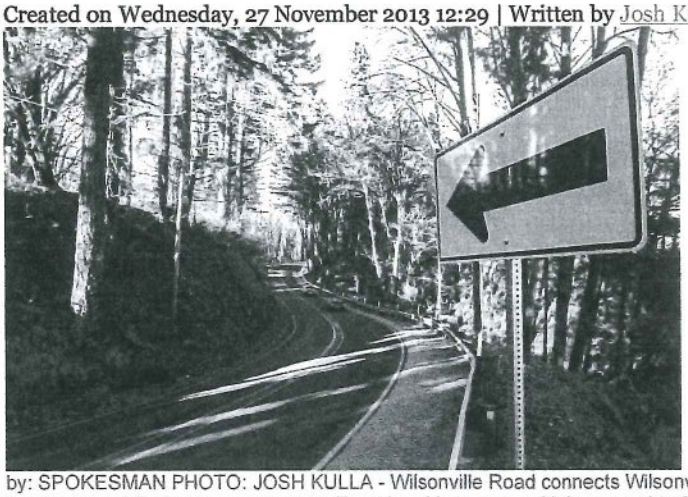
Some fear bypass will heap traffic onto Wilsonville Road

Created on Wednesday, 27 November 2013 12:29 | Written by Josh Kulla |



by: SPOKESMAN PHOTO: JOSH KULLA - Wilsonville Road connects Wilsonville with Newberg to the west. Its also a narrow, two-lane road that many now worry will not be able to cope with increased traffic from a planned Newberg-Dundee bypass.

For a project that's been decades in waiting, the Newberg-Dundee bypass highway is not getting a lot of public attention.

Work on the first phase of the planned 11-mile bypass highway around the state's most notorious traffic bottleneck got underway last fall to relatively little fanfare. Now, however, the project is getting the attention of Wilsonville city officials and others concerned about the potential impact on Wilsonville Road traffic.

"(The Oregon Department of Transportation is) very much convinced that having Wilsonville Road be part of a signalized intersection, there really is a belief that the creation of the bypass won't increase traffic on Wilsonville Road," Wilsonville Community Development Director Nancy Kraushaar told the Wilsonville City Council on Nov. 18.

As designed, the $288 million first phase of the bypass would extend 4 miles from a new Oregon 219/Wilsonville Road intersection to the junction of Oregon Route 99W and Oregon Route 18 south of Dundee.

LaDuke Construction is carrying out the initial stage of construction, which includes building embankments for bridge approaches and preparing the area for roadways, which will be built next year.

by: PAMPLIN MEDIA GROUP / GARY ALLEN - Construction on the Newberg-Dundee bypass got started last fall. This photo shows the eastern terminus of the first phase of the bypass, where it will attach to Highway 219 south of Newberg near the junction with Wilsonville Road.

When completed in 2016, the first phase of the bypass will, according to ODOT, reduce traffic volumes by around 20 percent in Newberg and 40 percent in Dundee.

Extensive ODOT modeling done before the first shovel ever hit dirt also concluded the bypass would not measurably impact traffic on the Wilsonville Road, which joins Wilsonville with Newberg.

But many remain unconvinced this will actually be the case. They say motorists, including more heavy trucks, are more likely to be directed onto Wilsonville Road once linked with the bypass road.

And if traffic counts are markedly increased on Wilsonville Road, that could have a direct impact on the west side of Wilsonville itself, which already experiences significant traffic congestion at peak hours at intersections around the Interstate 5-Wilsonville Road interchange.

"It seems like it boils down to whether you have confidence in the modeling or not," said Councilor Richard Goddard.

Closer to the project, members of the Ladd Hill Neighborhood Association, a community planning organization, or CPO, that covers parts of rural Yamhill and Clackamas counties, are among those who do not. At a Sept. 19 meeting, ODOT officials met with the group to try and assuage their concerns about the impact on Wilsonville Road.

According to minutes from that meeting, ODOT representatives claimed traffic would likely increase on Wilsonville Road from around 3,500 to 4,000 trips per day, significant but not enough to warrant concern. However, the minutes state, "Many more LHNA speakers simply could not believe in the accuracy of the ODOT estimate."

Those who live on Wilsonville Road testified to the number of traffic accidents on the road and emphasized that drivers seeking a shortcut to Interstate 5 may be more tempted to use Wilsonville Road once it is connected directly to Oregon Route 219.

Phase one plans call for the construction of a signalized junction that would join Route 219 and Wilsonville Road with Springbrook Road in a three-way intersection. In the fourth phase of construction, the terminus of Wilsonville Road would be moved to the south to meet up with Route 219 at Wynooski Road next to the Newberg Wastewater Treatment Plant.

Ladd Hill Neighborhood Association members suggested that perhaps Wilsonville Road could be connected with Wynooski Road as part of phase one instead.

"The Ladd Hill CPO is really worried about it," Kraushaar told the council. "When I first started getting calls from the CPO, I also contacted Clackamas County. The county met with the CPO and the county's thought was that what's important is to take traffic counts now and take them after the bypass is completed and see if models were correct or not. And if that's not the case, do something."

What could be done after the fact remains a matter of conjecture.

"It seems to me it would make sense to evaluate low-risk mitigation on the front end before you risk millions of dollars building it a certain way," said Wilsonville Mayor Tim Knapp. "I don't see a downside to considering one of those other options; whereas there is a significant downside to the option they've chosen to focus on. It doesn't seem like it would be that hard to answer those questions."

Kraushaar said she simply doesn't have the data at present to contradict ODOT's projections.

"My thought is for safety," she said. "It's not a safe road. It's narrow and windy, people cut across their lanes to do their fancy driving, stuff like that. But ODOT continues to stick to their belief that their model is correct and that we don't need to do anything."

For more information on the project, visit

10.01
3 of 3

BLOG (Nov 27, 2015):

Beth Neal:

My plea to ODOT: Please do not further erode public confidence in government. Respond to the Ladd Hill CPO's independent traffic engineer's report that the model ODOT used to determine that the increase in traffic on Wilsonville Road would be minimal was not based on the current design! Better yet, why not just avoid the problem altogether and implement the Phase 4 alignment option?

- **Concerned** 2 years ago

  The ODOT engineers are openly obstructive to safe alternatives in favor of completing their project and moving on. Their modeling is decades old and the consultant responsible for it could not comment regarding its validity. Drivers and residents on this road face numerous safety issues already. The current design will be disastrous and afterwards the question will be "How did this happen?". The answer will be that numerous bureaucracies just didn't listen or care. The most cost effective solution is to adopt the Phase 4 alignment now before construction begins and avoid the inevetible catastrophe. ODOT admitted that the Phase 4 alignment will probably never occur since there is no funding for it and Newberg has already made plans to rezone the area making a later change improbable. Stay tuned for the next article titled "Carnage on Wilsonville Road."

  John Freeman 2 years ago

  The Ladd Hill Neighborhood Association hired a traffic engineer to evaluate ODOT's traffic studies, and the engineer's report states that the modeling which ODOTused did not include the current design with a direct connection of the By-Pass to Wilsonville Road. So ODOT's contention that traffic will not increase is bogus!

  Name 2 years ago

  Wilsonville Road is favored by bicylists and increased traffic would be even more hazardous for them. Also the two lane road was not designed for truck traffic and it is difficult for trucks to stay in their lane making for dangerous situations on some of the tight curves. The speed limit was lowered to 45 mph years ago but most drivers exceed that speed. We have lived in the area for 30 years and have known of many accidents on this road.

10.02
1062

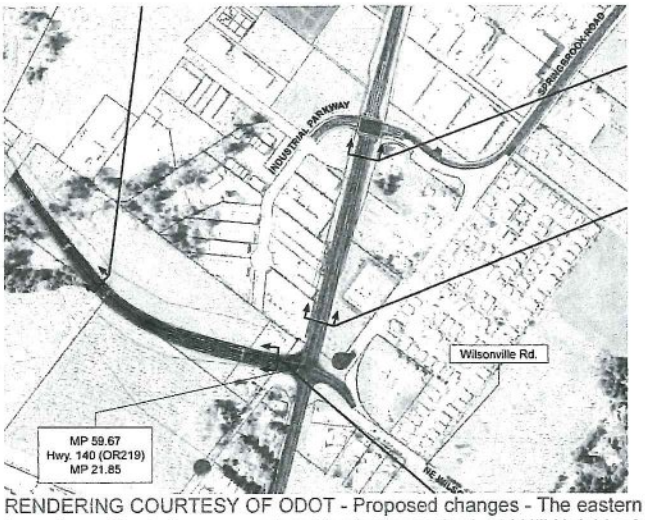
Bypass route may undergo revision

Created on Wednesday, 05 August 2015 01:00 | Written by Colin Staub |

Transportation — Wilsonville Road neighbors agree with ODOT on direction for Highway 219/Wilsonville Road intersection

While construction on the Newberg-Dundee bypass project continues full bore across south Newberg, the design for its eastern terminus at the intersection of Highway 219 and Wilsonville Road remains uncertain following the opposition of a neighborhood association further down Wilsonville Road.

As is, the bypass is designed to intersect with Highway 219, where it will direct traffic northward on the highway until its intersection with Springbrook Road, where bypass traffic will be directed up that road to reach Highway 99W.



RENDERING COURTESY OF ODOT - Proposed changes - The eastern terminus of the Newberg-Dundee bypass project has been the subject of some consternation between the Ladd Hill Neighborhood Association and the Oregon Department of Transportation.

Where the bypass intersects with Highway 219, another connection has been planned between Wilsonville Road and the highway for a number of years, a connection that would allow motorists to travel to and from Wilsonville Road directly via the highway rather than traveling north to the likely-congested Springbrook Road intersection.

But neighbors in the Ladd Hill neighborhood, which Wilsonville Road travels through for nearly five miles, are concerned about the increase in traffic that could result from that connection and therefore the road's intersection with the bypass.

"There is a significant and avoidable safety issue on Wilsonville Road if the current configuration that ODOT is planning to go to bid in December continues," said Stan Halle, director and chairperson of the bypass impact committee for the Ladd Hill neighborhood association, at a July 13 traffic safety commission meeting. "This would essentially bring the bypass directly into a reconfigured Wilsonville Road and, to quote one of the traffic engineers from Clackamas County, essentially it would be a 'cannon' for traffic going straight down Wilsonville Road to avoid the Springbrook Road congestion and 99, heading toward I-5."

Neighbors are taking issue with the potential of Wilsonville Road, a narrow and winding 45 mph route, to become a de facto shortcut for motorists exiting the bypass and traveling toward the freeway.

Halle gave a timeline of the events leading up to the current state of affairs, explaining that the Ladd Hill neighborhood has been following the bypass plans since 2002.

With a transportation system plan (TSP) amendment passed in 2013 that allowed for a highway to end at a local road, the neighborhood concern grew stronger. The neighborhood took issue with ODOT's traffic impact analysis, which ODOT area manager Tim Potter said indicated a minimal impact on Wilsonville Road traffic, so neighbors contracted an independent traffic analysis.

Since that time ODOT and the Ladd Hill neighbors have convened to discuss amenable solutions.

"We've met several times with representatives from the neighborhood association and we've come to an agreement on a design," said Tim Potter, area manager for ODOT.

That design centers on a "no-through" intersection configuration, which would prevent traffic moving directly from Wilsonville Road to the bypass and vice versa.

"It uses channelization by islands to restrict straight-through movement so all right turns and all left turns are fully functional, but the way the islands work you are precluded from going straight across," Potter explained.

Halle stated at the July 13 meeting that, in the opinion of the neighborhood association, "if anything but this no-through design were to occur we're looking at some significant safety issues along the road."

According to a traffic engineer contracted by the neighborhood association, the no-through intersection would generate an additional 2 to 4 percent increase in traffic on Newberg city streets, especially Second Street, Halle wrote in minutes for a May association meeting. Because the engineer posited that when the bypass opens the immediate influx of traffic into the intersections of Springbrook Road and both Highway 99W and Highway 219 would cause those intersections to technically "fail" traffic ratings, the neighborhood association viewed the mild increase by the no-through intersection as "minor."

But that minor increase could be seen otherwise by the city of Newberg, which will also get a chance to weigh in before the design is finalized: While the neighborhood and ODOT have come to an agreement, reconfiguring the intersection at Wilsonville Road will also require city approval in the form of a TSP amendment.

"They have concerns about traffic that might be diverted through, that otherwise wants to get to the bypass but can't off of Wilsonville Road," Potter said.

Those discussions will take place first at a planning commission meeting and, should commissioners approve a recommendation, to the City Council for final approval. The date for consideration at the planning commission has not yet been finalized.

10.03
1 of 2

Laad Hill, Wilsonville look for highway bypass amendment

Created on Wed, 12 Aug 2015 01:00 by Andrew Kilstrom | 503-636-1281 ext. 112

Phase One construction of the Newberg-Dundee bypass is well under way across south Newberg and is heading closer and closer to the intersection of Highway 219 and Wilsonville Road that has been under much scrutiny since 2013 — an intersection that could potentially prove somewhat problematic for the city of Wilsonville.

Laad Neighborhood, which surrounds a five-mile stretch of Wilsonville Road, is concerned that the connection at the road's intersection with the bypass will result in excess traffic on Wilsonville Road.

"It's a big public safety issue," said Stan Halle, Laad Hill neighborhood association director/chairperson. "It's a very windy, curvy road and there are no shoulders. The last thing you want to do is increase traffic by substantial numbers. ... (Newberg) apparently looks to Wilsonville Road as a de facto extension of the bypass given the expected congestion on Springbrook Road northbound as it connects back to Highway 99W."

Under its current plan the bypass is designed to intersect with Highway 219, where it will direct traffic northward until intersecting with Springbrook Road, where bypass traffic will be directed up toward Highway 99W.

SPOKESMAN FILE PHOTO - Wilsonville Road is narrow and windy, creating concerns about the potential danger from additional traffic that could come from the Newberg-Dundee bypass.

There is another planned connection where the bypass intersects with Highway 219 and Wilsonville Road, which would allow motorists to travel to and from Wilsonville Road directly using the highway as opposed to traveling north toward the Springbrook Road intersection — one that will likely be congested.

"The way that it's currently designed, for this current phase of construction, we have similar concerns about increased traffic on Wilsonville Road, and therefore we are working with ODOT and the neighborhood association to find a design that mitigates those concerns," added Wilsonville City Engineer Nancy Kraushar.

Additional traffic could have an impact all the way to the Wilsonville city limits, putting more pressure on Wilsonville Road, and by extension, the Wilsonville and Boones Ferry exits on Interstate 5 which are already at capacity. There are roughly 200 houses, six farms and four schools if you follow Wilsonville Road all the way into Wilsonville from Newberg.

Halle and the Laad Hill neighbors have been following the construction of the bypass since 2002, and became especially concerned when a transportation system plan passed in 2013 allowing for a highway to end at a local road — what is now the plan at Wilsonville Road.

Initially, ODOT's traffic impact analysis concluded that the impact on Wilsonville Road traffic would be minimal, but the neighborhood association disagreed, hiring an independent engineer for traffic analysis.

"Originally ODOT thought that putting signage up would deter people from taking Wilsonville Road," Halle said. "But people are just going to look at their GPS and see that Springbrook Road is stopped and that Wilsonville is the faster route."

10.03
292

The independent engineer found that there would in fact be additional traffic on Wilsonville Road, prompting Halle and the neighborhood association to go back to ODOT, where the two began working on a new plan to solve the issue.

SPOKESMAN PHOTO: ANDREW KILSTROM - The Boones Ferry Exit on Interstate-5 is one of the areas that could see an increase in traffic because of the Newberg-Dundee bypass.

After a few productive meetings, the two sides agreed on a "no-through" design, which would prevent traffic moving directly from Wilsonville Road to the bypass and vice versa, which is a stark contrast from the current design in place which is essentially a "through-through" design.

"The most recent plan is satisfactory to Wilsonville," Krausharr said. "Wilsonville Road has a lot of safety concerns because it is a narrow, rural road. We're concerned about any additional traffic so to see it alleviated is ideal."

ODOT has presented a TSP amendment to implement the new plan, but needs Newberg officials to approve since they have final say on allowing any alteration.

"It has to go through Newberg's planning commission, and then go to their City Council," said Tim Potter, ODOT district manager. "The staff will provide a report, they have some questions we're working on, but we're hopeful they'll approve the plan."

While the no-through design would greatly benefit Wilsonville Road, it would produce a minor increase in traffic for the city of Newberg — 2 to 4 percent — according to the neighborhood association's traffic analysis. It's not a significant increase, but Halle is worried that Newberg will find it as reason enough to turn down the new plan.

Halle has received letters from Clackamas and Yamhill counties, the City of Wilsonville and the West Linn-Wilsonville School District backing the neighborhood association's no-through design, but the decision isn't ultimately theirs. While the neighborhood association and ODOT have agreed on a plan, reconfiguring the intersection will need a TSP amendment from Newberg.

ODOT has made a commitment to the Legislature to prepare a bid package by December, and plans to go forward with the original design at that time if Newberg denies the amendment. ODOT could potentially amend the design after the fact, but it would likely require more time and money.

"The through-through design is in the bid package right now, and (ODOT's) intent as they have said is that they will change the bid after the fact to this new (no-through) plan," Halle said. "We're nervous that things will come up and the design won't change, and at that point we wouldn't be able to do anything about it.

"The simple way of saying it is we want this thing fixed. We're all for the bypass, we just don't want people on Wilsonville Road and others put in danger from the extra traffic this design will cause."

Newberg will discuss a potential amendment at its next planning commission meeting Aug. 13. If it approves, a recommendation will be made to the City Council for final approval.

10.04
1 of 3

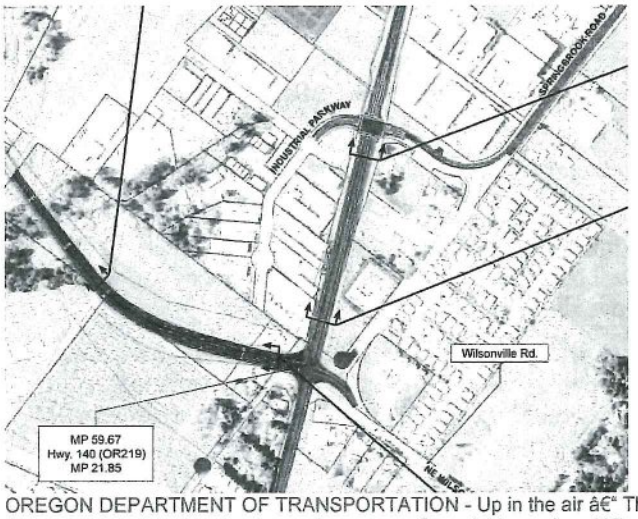
Bypass intersection draws ire of neighborhood association

Created on Wednesday, 02 September 2015 01:00 | Written by Colin Staub |

Wilsonville Road configuration receives support from outside parties, but city has the final say on the issue

Discussion is heating up around the proposed alteration to the Newberg-Dundee bypass design for its eastern terminus at Highway 219, in anticipation of Newberg's planning commission and City Council taking up the issue this fall.

The issue has been followed closely by the Ladd Hill Neighborhood Association over the past 30 months, since a 2013 Newberg Transportation System Plan amendment was passed that allowed the bypass to end at Highway 219 and also included in the amendment that traffic from the bypass would be allowed to cross 219 directly onto Wilsonville Road, as would traffic traveling westbound from Wilsonville Road onto the bypass.



OREGON DEPARTMENT OF TRANSPORTATION - Up in the air â€" The exact configuration of the Newberg-Dundee bypass at its eastern terminus has been a major concern for neighbors along Wilsonville Road as well as other supporters in Clackamas County. Newberg will soon consider a redesigned intersection where the bypass meets Highway 219.

This prompted the LHNA to mobilize and gather support for its present proposal, in which traffic would be barred from traveling straight across Highway 219 from either the bypass or Wilsonville Road, and would instead only be able to turn left or right.

Such a configuration would prevent what LHNA director Stan Halle has described as the major safety concern of traffic "cannonballing" off the bypass onto Wilsonville Road. The solution is particularly attractive, Halle explained, because it does not require any new right-of-way acquisition, nor does it require any additional environmental permitting, it does not change the cost or schedule and only requires some reallocation of materials for curbs and medians.

The intersection being simply controlled by traffic lights means emergency vehicles would still be able to get through.

"This works," Halle said.

However, while the Oregon Department of Transportation has indicated its willingness to reconfigure the intersection to bar through traffic, the city of Newberg will soon get its chance to weigh in — and it has the final say in whether to adopt the redesigned intersection, which would divert at least some motorists into Newberg neighborhoods.

10.04
203

Newberg concerns

"My concern is additional traffic on our residential streets," Mayor Bob Andrews said Monday morning, citing concerns from neighbors in the Springbrook Oaks and The Greens neighborhoods which could experience a ripple effect from the increased congestion near Springbrook Road. "We have some local citizenry that's saying, 'Whoops, that's going to bring that intersection at Second, Springbrook and Fernwood to a near failure."

A traffic study commissioned by the LHNA from engineering firm Mackenzie has indicated there will be a 2 to 4 percent increase in traffic on Newberg's side streets.

"We believe the small addition of traffic volumes on city of Newberg streets would not create a significant impact from either a capacity or safety standpoint, and would certainly be less than other options considered," traffic engineer Brent Ahrend wrote in an April letter to the city of Newberg engineering department.

The converse of that, Andrews said, is that if the traffic impact is minimal on Newberg streets, why is it a problem for Wilsonville Road?

Ladd Hill neighbors' response is that the 2 to 4 percent would be the figure only for traffic that cuts through Newberg side streets to get to Wilsonville Road or the bypass with the no-through configuration, but that if the through-through option goes forward the number on Wilsonville Road would be much higher given the ease of access it would provide to the bypass or the freeway.

The 2 to 4 percent figure consists "essentially of local residents," Halle said. "Quite different from that is hooking up the bypass directly into Wilsonville: it provides for the eastbound traffic a very attractive shortcut to I-5 and points beyond."

No agreement on alternatives

While Andrews said the city is willing to compromise, the neighborhood association has rejected the alternatives that have been brought up so far.

One idea was to alter the reconfigured Wilsonville Road and Highway 219 intersection to block eastbound traffic from the bypass onto Wilsonville Road, but allow westbound traffic. That solution, Halle posited, would only cut the problem in half as traffic from I-5 could still utilize Wilsonville Road as a shortcut onto the bypass, circumventing Highway 99W.

Another hypothetical plan would be to leave Wilsonville Road where it is today without connecting it directly to Highway 219, maintaining its connection with Springbrook Road and reconfiguring that connection with a series of right-in, right-out diverters that would not allow traffic headed south on Springbrook Road to turn onto Wilsonville Road and would not allow Wilsonville Road traffic to turn left onto Springbrook Road toward the bypass.

This solution, as well, was not accepted by the neighborhood association.

"What that does is it sets up Wilsonville Road to be the release valve for all the traffic that will back up on Springbrook Road going north, almost the same as having the eastbound through," Halle said.

Other alternatives that were looked at during the McKenzie study were determined to be cost-prohibitive or have too many strings attached, such as UGB amendments. From the neighborhood association's perspective, though, the issue comes down to safety.

"We feel that we cannot compromise people's lives," Halle said, reiterating the perceived danger that would come from additional traffic on Wilsonville Road. "The public safety issue is critical ... (there are) 60,000 to 70,000 families that are affected by this, and that's a lot more than the local population along those (Newberg) streets."

Change requires TSP amendment

10.04
3 of 3

In 2013, the city of Newberg included the through-through design from the bypass to Wilsonville Road in a TSP amendment, meaning any change to the intersection needs to be in the form of a new amendment.

"Whatever we do, if there is to be any change in what is currently on the plans ... it's got to be in an amendment for our TSP for the city of Newberg," Andrews said. "Our TSP has that as a total crossing and that's in the plan."

Because the issue is in the form of a TSP amendment, the process for city consideration is more involved than other matters, city planner Steve Olson said. There are three steps that must be taken, starting with the initiation of the TSP amendment by the City Council. Following its initiation the amendment will go before the planning commission for consideration, which will then offer a recommendation to the council, which has the final say.

"There are still some discussions going on at the engineering level that need to be explored before we have any kind of discussion about what we're going to adopt," Andrews said.

The initial step will likely be taken at the Sept. 21 council meeting, Olson estimated, which would then trigger consideration by the planning commission either in October or November.

The project goes out for contractor review in early December, ODOT area manager Tim Potter explained last month. If the council has not taken action by that time, the current design would go out to contractors as presented — but, Potter said, the council could still make alterations to the design even after the contractor review has begun.

Even so, "it's a very tight timeline," Halle said. Given the timeframe, the LHNA has a backup plan: Submit a filing to the Land Use Board of Appeals, which could lead to an injunction on bypass work.

In the meantime, the neighborhood association continues to build its case and work on garnering support for the plan. Over the past six months the project has received letters of support from the Clackamas County Board of Commissioners Chairman John Ludlow, Wilsonville Mayor Tim Knapp, West Linn – Wilsonville Schools Director Tim Woodley and all three Yamhill County commissioners.

"We are not alone in this, we have a large coalition," Halle said.

There is enough support behind the proposal that Halle estimates it could be effective in lobbying for additional funding to complete the subsequent phases of the bypass which, if funded and constructed, would negate the Wilsonville Road issue entirely.

But Andrews indicated the increased lobbying for funding, while positive, is not necessarily pertinent to the decision at hand.

"I appreciate his offer, but we'll take things one step at a time," Andrews said, adding that the involvement of county commissioners has moved the issue into the realm of politics.

"It's no longer a matter of practical engineering, it becomes a political issue," he said. "And sometimes politics and reason are not necessarily compatible."

10.05

In Our Opinion: Keep bypass intersection alignment where it is

Created on Wednesday, 23 September 2015 01:00 | Written by (none) |

Council should reject opponents' flawed argument that traffic would access I-5 via Wilsonville Road

"It's no longer a matter of practical engineering, it becomes a political issue. And sometimes politics and reason are not necessarily compatible."

Newberg Mayor Bob Andrews

Andrews' comment couldn't be more on the mark on the subject of changing the alignment of the intersection of the first phase of the Newberg-Dundee bypass with Highway 219 near Wilsonville Road.

Opponents have taken exception to a plan, approved by the city as part of its transportation system plan in 2013 and adopted by the Oregon Department of Transportation, to allow those exiting the bypass to traverse the highway and connect on to Wilsonville Road. They argue that drivers, including long-haul truckers, attempting to access I-5 from the bypass will utilize Wilsonville Road rather than go south to McKay Road or north to Highway 99W.

Sept. 23 editorial

In our view their argument, based on traffic studies they themselves commissioned, are without merit and could unnecessarily delay a project that has been decades in the making.

Anybody familiar with the three accesses to I-5 from Newberg understands that Wilsonville Road is the slowest, most dangerous route available. Long-haul truckers in particular would choose Wilsonville Road only if they had no other choice.

But the opponents, who live on Wilsonville Road far from Newberg on the edge of the county line, have deep pockets and many political connections. They've garnered endorsements from groups ranging from the director of Wilsonville schools to the Clackamas County Board of Commissioners and state Sen. Kim Thatcher.

Missing from that group, however, is pretty much anybody within Newberg, the town that has scrapped and clawed to this point to get the bypass built in a way that is most beneficial to the town's residents.

The council has voted to initiate further consideration of the reconfiguration. The issue will come before the planning commission in the coming weeks, all while construction on the bypass rages on everywhere but that intersection.

Opponents have indicated that if the city sticks with the original alignment they will seek an injunction and even advance the case to the Land Use Board of Appeals (LUBA), endangering the future of the bypass even more.

The opponents to the alignment as it is designed are serving only their own narrow self interest without regard for the damage they would levy on getting the bypass built and relieving Newberg and Dundee of the legendary congestion that plagues our cities.

We call on the council to reject the opponents' argument when it returns in December, keep the alignment as it is designed and get the bypass built now.

10.06
1 of 2

Fractious hearings spur city council training

Created on Wednesday, 14 October 2015 01:00 | Written by Colin Staub |

Government — Council's role and the available options in quasi-judicial hearings clarified by city attorney

In light of the Martell Commons development hearings over the summer that generated frustration on the City Council with the apparent dearth of options available in making a quasi-judicial decision, a work session held last week aimed to clarify that process.

Council agendas indicate which type of hearing is taking place on an issue, whether it's administrative, legislative or quasi-judicial. "Quasi" only applies because councilors are not technically judges, as the process is otherwise akin to a judicial decision.

Those three hearing types are representative of the three branches of government, City Attorney Truman Stone explained. Council is responsible for acting in each capacity, though never at the same time.

With legislative hearings, the planning commission has generally held a hearing on the issue and has forwarded its recommendation to council, which then takes the final action. In these hearings procedures are more flexible, with no limitations on outside contact on the issue between councilors and the public.

A recent example of a legislative hearing was the Sept. 21 council hearing on banning early recreational marijuana sales in the city. Legislative hearings require findings as well as a record, but the requirements are more lenient than a quasi-judicial hearing. Legislative findings and record must indicate that the council is acting within its legal authority, such as demonstrating the allowance in Senate Bill 460 for city governments to ban early pot sales in their own jurisdictions.

In a quasi-judicial hearing, though, things are different.

"In that role you are acting like a judge, you're applying pre-existing law which would be typically in the form of policies or specific criteria, and you're applying that to specific facts that come before you, and those facts are presented to you as evidence," Stone explained.

Council must determine what the law is, determine the facts that make up the evidence, and apply the law to those facts.

"You can't make decisions based on opinion, you can't make arbitrary decisions, you can't change the law in the middle of the process, you can't move the goal posts on people, and you can't add or subtract the criteria," Stone said.

If any of that occurs, the applicant is entitled to due process and can appeal based on an unfair hearing.

Criteria that is applicable for quasi-judicial hearings is located and presented by city staff. In the Martell Commons case, for example, the applicant prepared a traffic analysis and vetted it with city staff; the Oregon Department of Transportation measured it against its own criteria and gave its feedback to city staff; finally, everything was prepared into a staff report.

Because of the large amount of preparation that goes into a quasi-judicial hearing prior to it occurring, the impression can be that council is limited in its ability to approve or deny a project.

10.06
2 of 2

"By the time it gets to the council it has been vetted by staff and typically gone through the planning commission process, so the issues have been winnowed down and the arguments usually at least in theory have been refined enough where you're really dealing with specific issues not the whole amorphous initial application," Stone said.

When the council is considering those specific issues, he continued, it must only consider evidence that is relevant to the criteria in question.

He brought up a hypothetical transportation analysis in which an applicant submits a traffic study showing no significant impact on an intersection. In that case, relevant testimony would be street conditions, widths, number of lanes, accident rates, and so forth.

"People may come in and they may say, 'We don't like this because it will decrease our property value.' Property value is not a criteria under this hypothetical, so that would actually be irrelevant testimony," Stone explained.

Even if the neighbors submit a petition with 300 signatures that ask council not to approve the application, despite that level of support the petition would be irrelevant because it has to pertain specifically to the criteria at hand, that is, whether the proposal would create a traffic hazard or increase congestion. The neighbors could solicit a traffic study of their own and if it found differently than the applicants' study, that could be relevant.

"But if you just have citizens that say, 'I don't like this, I want you to vote it down,' that is not relevance," Stone explained.

The opposition would need to commission its own study of the same point, traffic for example. If that study found differently than the applicant's, the conflicting evidence would need to be considered by council to determine which is accurate.

But Councilor Scott Essin noted the problems in timing if the opposition to a project wants to present alternative findings, citing the Martell Commons proceeding again. He had received the 450-page packet regarding the development on Friday, and barely had time to get through it by the following Monday night's council meeting.

"It seems like there are certain things that ... it's just not physically possible to go through the process in three days," he said.

Stone responded that the city is working to revise the council schedule in an effort to get council packets out earlier for more review prior to meetings.

10.07
1 of 2

By Don Iler • News Editor • October 23, 2015

Bypass corridor left unprotected in Newberg

Construction is on budget and ahead of schedule on Phase One of the Newberg-Dundee Bypass. However, decisions made years ago may prevent the rest of the Newberg section from ever being carried out, at least as originally envisioned.

- Rockne Roll/News-RegisterWorkers prepare to lift a beam into place on a bridge spanning Highway 99W in Dundee Monday night. While bypass work continues, decisions made by Newberg may make completion of the full bypass more expensive or even impossible.

The bypass is designed to run 11 miles, from a Highway 99W junction northeast of Dayton to a Highway 99W junction in the far northeast corner of Newberg. But the first phase only runs four miles, from a Highway 99W junction at the west end of Dundee to a Highway 219 junction in Newberg.

The Oregon Department of Transportation plans to eventually extend the bypass on northeast, from the Highway 219 junction to a Highway 99W junction by the Providence Newberg Medical Center, as well as southwest, to a junction almost to Dayton.

For many years, Newberg's comprehensive land use plan incorporated an overlay preventing further development along the portion of corridor earmarked for the Phase Two extension, pushing on through the city.

However, in 2006, the Newberg City Council passed an ordinance eliminating the overlay if ODOT didn't begin acquiring corridor right-of-way within five years. The cash-strapped agency made no such move, so the overlay disappeared in 2011. And just a few months later, the city got its first application for private development there.

ODOT says it still intends to eventually extend the bypass through the corridor. However, given a growing backlog of bridge and highway projects around the state, and murky funding prospects, completion could be decades from moving forward.

Tim Potter, ODOT's area manager, said the agency is aware that Newberg has opened the corridor for development, making running a roadway through it a more controversial and costly proposition. But he said, "By putting an overlay district in, we are handcuffing private landowners without any compensation," which reflects the crux of the city's thinking.

Newberg City Engineer Kaaren Hofmann said, "We would try to encourage things other than buildings." However, she conceded there are no longer any legal restrictions on the books.

In September 2011, the Werth Family LLC submitted plans to partition a lot and plat a small residential development in the corridor. That stands to force ODOT to displace new construction — something sure to stir opposition and boost costs.

And the Newberg Foursquare Church is currently considering a two-lot corridor site for a new church. A project delegation met with the city planning staff just last week to discuss the possibility.

On its website, the church indicates the site has been donated specifically for new church quarters, but says it will first need to raise the requisite funds to make the project succeed.

Completion of Phase One of the bypass will force motorists aiming to head east on 99W to snake their way over via Springbrook Road, passing through at least six traffic lights along the way. While Springbrook will be expanded to handle extra traffic, planners project it becoming overloaded within 10 years.

"It's not expected to be a permanent solution," confirmed McMinnville attorney Dave Haugeberg, longtime chair of the Parkway Committee. "It will not relieve as much traffic than if Phase Two were constructed."

10.07
2 of 2

As Springbrook becomes increasingly congested, planners expect to see Portland-bound motorists increasingly resorting to workarounds.

Many motorists, for example, may be tempted to turn right on Highway 219, head over the bridge, turn left on McKay Road and catch Interstate 5. And that has the disadvantage of funneling urban traffic through rural farmland.

As currently configured, the bypass' northeaster terminus also allows them to simply wind north on Wilsonville Road.

But that has the Ladd Hill Neighborhood Association up in arms. It says saying the winding rural roadway isn't capable of handling much in the way of additional trffic.

ODOT has responded by recommending Newberg eliminate direct access to Wilsonville Road, which would require it to amend its long-range transportation plan. The city council has agreed to consider the idea, but is worried that it would merely direct more motorists onto Springbrook and Highway 219, both of which lie squarely in its jurisdiction.

With Newberg beginning to allow new construction in the Phase Two corridor, extension of the bypass on to the northeast may seem more fantasy than reality. However, increasing congestion on Willsonville, Springbrook and Highway 219 could help come to the rescue eventually by springing money loose.

"We're hopeful (about) funding from the legislature," Haugeberg said. "Just because Phase One is being built doesn't mean we're sitting back and declaring victory."

Comments

kona

The Newberg-Dundee Bypass was a political win for proponents with limited practical value. Just Phase I will be/is the most expensive ODOT project in history and it is for a 4 mile stretch of two lane highway congested on both ends.

02:41 pm - Fri, October 23 2015

David Bates

The Newberg-Dundee Bypass becomes the Dundee Bypass. Wow.

07:19 pm - Fri, October 23 2015

10.08
1 of 2

City, LHNA debate bypass decision type

Created on Wednesday, 04 November 2015 09:27 | Written by Colin Staub |

Transportation — Intersection issue will continue to be treated legislatively, city says

Last month the Ladd Hill Neighborhood Association requested that the question of reconfiguring the intersection at the eastern terminus of the Newberg-Dundee bypass project be considered quasi-judicially when it comes back before the Newberg City Council, but the city maintains its intent to treat it as a legislative decision.

GARY ALLEN - Conflict looms - Even as progress chugs along on the Newberg-Dundee bypass project, a dispute over the eastern terminus of the highway's first phase threatens to stall progress. City staff and attorneys are discussing whether deciding the fate of the intersection of the bypass and Highway 219 should be considered legislatively or quasi-judicially.

The debate over which type of decision should be made comes shortly after the council held a training session that laid out the differences between the two hearings. A legislative hearing generally occurs when the council is tasked with making policy decisions, while a quasi-judicial decision takes existing policies and laws and applies them to a certain situation.

"In that role you are acting like a judge, you're applying pre-existing law which would be typically in the form of policies or specific criteria, and you're applying that to specific facts that come before you, and those facts are presented to you as evidence," City Attorney Truman Stone explained during the training, later adding that councilors "can't make decisions based on opinion, you can't make arbitrary decisions, you can't change the law in the middle of the process, you can't move the goalposts on people, and you can't add or subtract the criteria."

Furthermore, quasi-judicial decisions have stricter requirements surrounding outside contact between councilors and the public, meaning any discussion outside of the hearing related to the issue would need to be declared as ex-parte contact.

Following numerous discussions and requests from the LHNA and other groups, the Oregon Department of Transportation asked the city to consider a transportation system plan amendment that would alter the proposed design of the intersection at Highway 219, Wilsonville Road and the bypass. The coalition against the current design is primarily concerned that traffic could utilize Wilsonville Road as a shortcut to get to I-5 from the bypass.

In September the City Council initiated consideration of the issue, voting to send it to the planning commission, which will likely visit the issue this month. It will then return before the council with a recommended course of action. How it is considered at that point, though, was the subject of a back-and-forth between the city and legal representation for the neighborhood association.

10.08
2 of 2

The city maintains that under its municipal code, a Type IV action to amend the comprehensive plan (the type of action spurred by ODOT's request) is treated legislatively.

But attorney Ralph Bloemers wrote to the city's legal department on behalf of the LHNA on Oct. 8, laying out a case for why the bypass/Wilsonville Road issue should be handled quasi-judicially.

He explained that Oregon courts consider three factors in determining which type of decision should be made: whether the case is bound to result in a decision, whether the decision will apply pre-existing criteria to concrete facts, and whether the decision focuses on a very specific issue or a small number of people.

He argued that the first criteria for a quasi-judicial decision was aptly met as the city is required to respond to ODOT's request for the council to consider the TSP amendment. The council can't simply ignore the issue.

In a response to Bloemers' letter, city associate planner Jessica Pelz of the community development department agreed that the first criteria was met.

The next two, though, are not as clear. Bloemers posited that the city is not making a policy decision, but rather needs to take statewide planning goals and apply them to the issue at hand, suggesting a quasi-judicial platform would be most appropriate.

The city responded that statewide planning goals are "more aspirational in nature than clear and objective criteria tailored to concrete findings of fact," and therefore do not fit the criteria to spur a quasi-judicial hearing.

Finally, the clearest disagreement was over the third point, regarding the scope of the issue under consideration and how many people are impacted by the outcome. If it's a very specific and limited issue, it's more likely to fall under the quasi-judicial classification.

Bloemers argued that "the two proposed changes are both confined changes to a small section of the intersection at the east end of the proposed bypass."

But the city sees it differently, claiming that changing the intersection at the eastern terminus of the bypass would, like any transportation change, "have ripple effects throughout the transportation network in that region of the city."

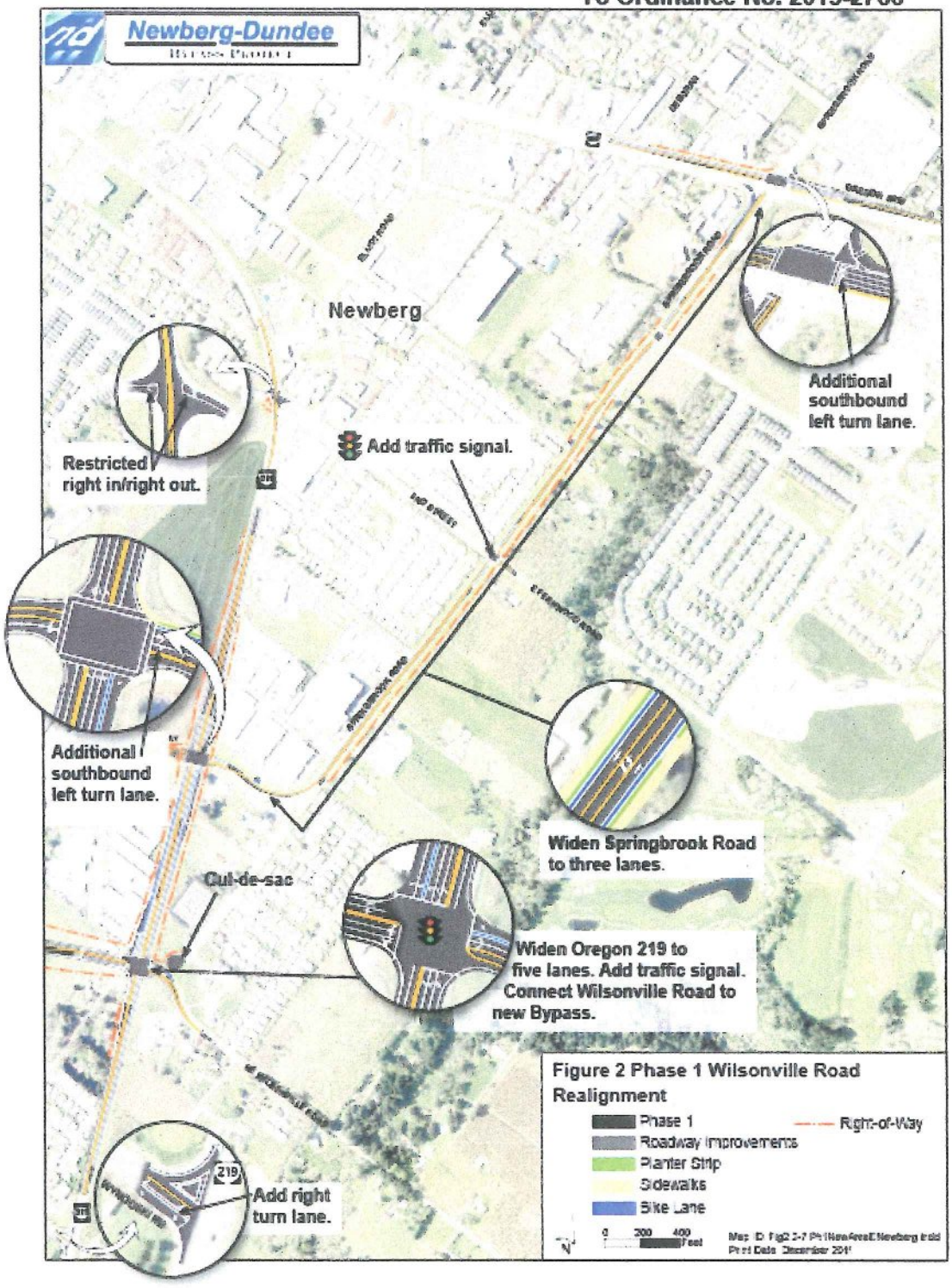
The issue could affect hundreds of Newberg residents, Pelz continued in the city's response, adding that the very number of people and organizations included in the coalition against the current intersection design, as well as the argument that the through-through intersection would impact Wilsonville Road all the way into the city of Wilsonville, suggests the issue is not directed only at a small population.

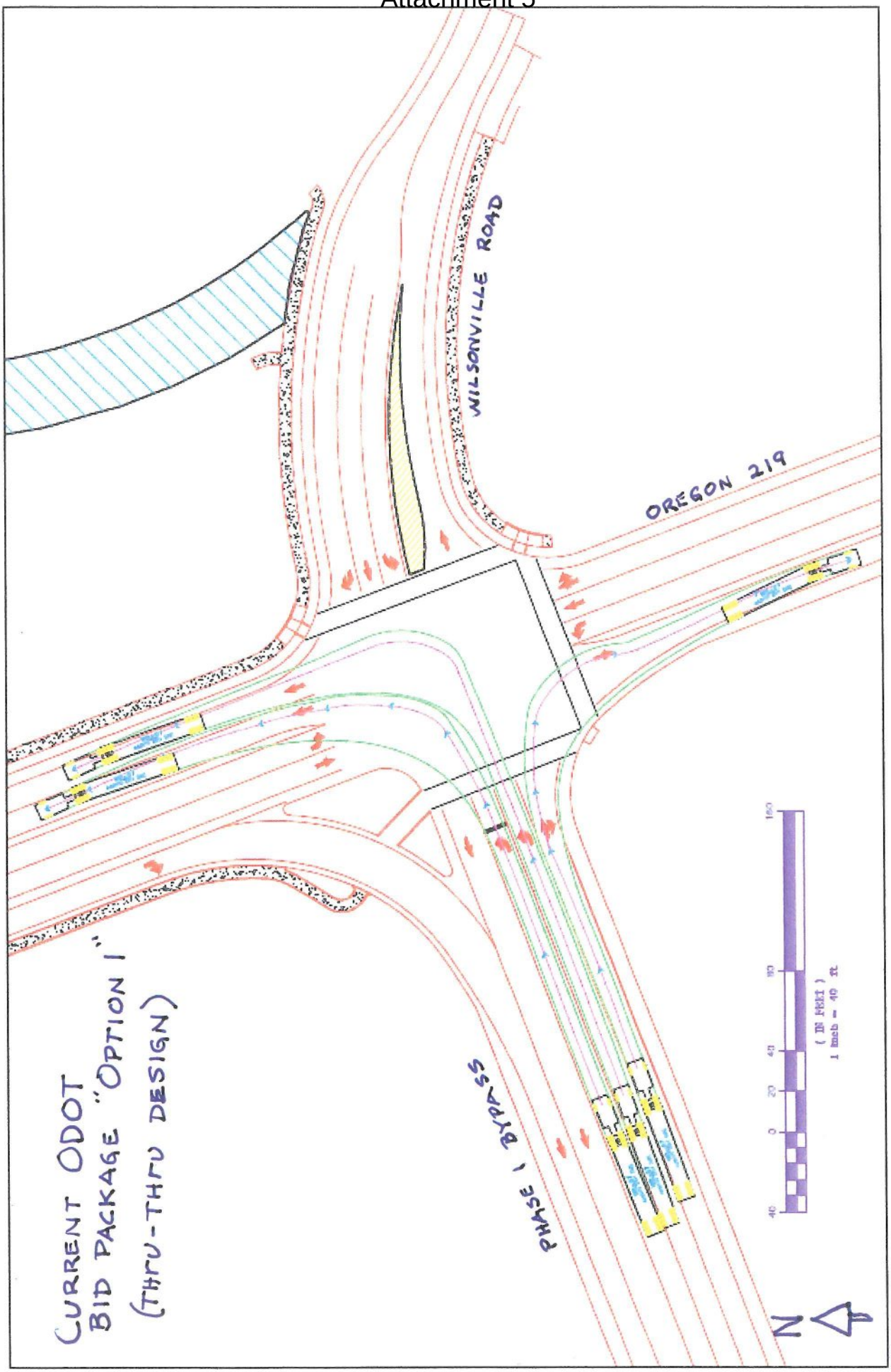
In the end, the city concluded, "The decision must follow the city's legislative process for a decision on the TSP/Comprehensive Plan amendment."

LHNA director Stan Halle deferred comment to Bloemers, who could not be reached by press time Tuesday morning.

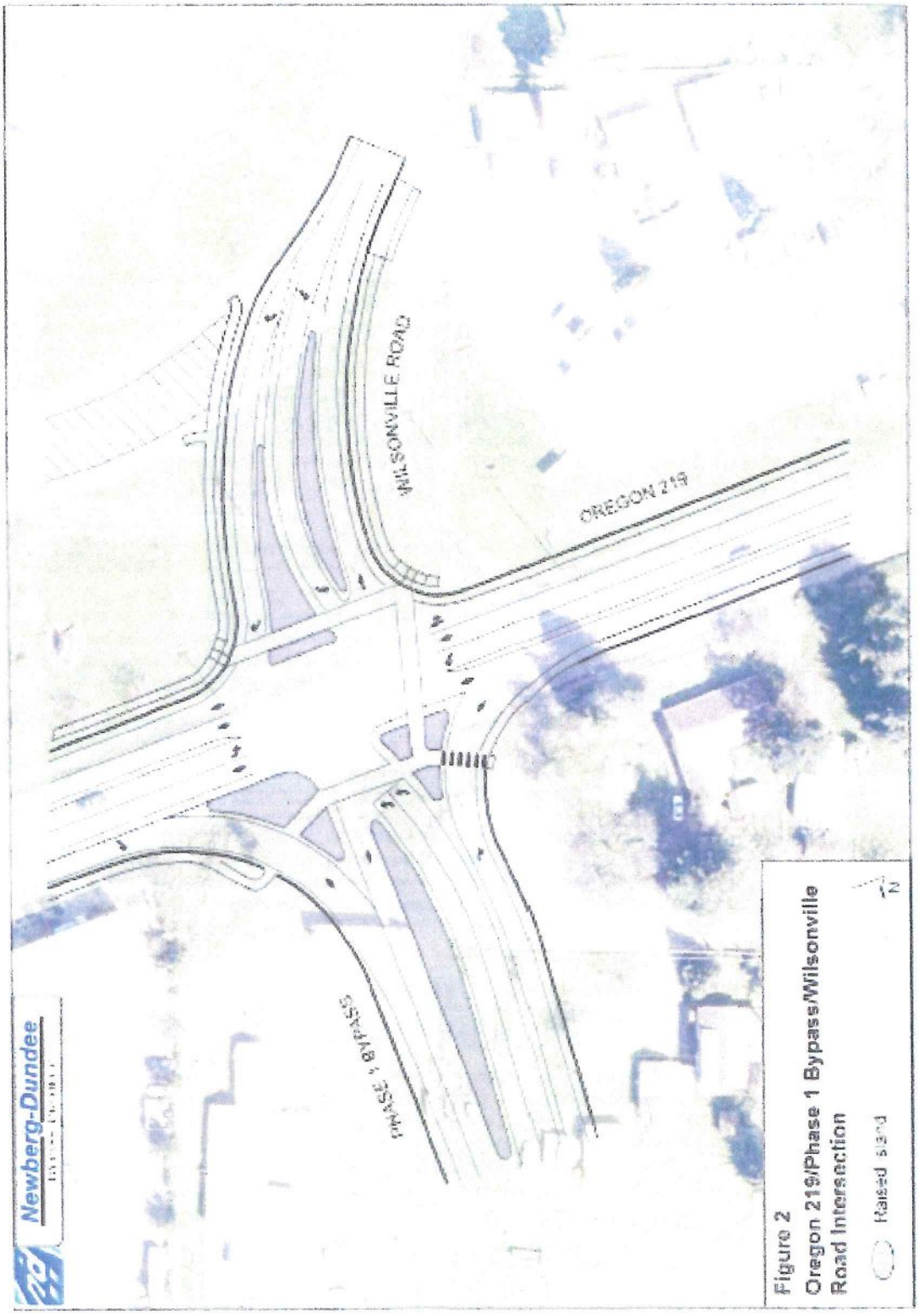
Attachment 5

Exhibit "B"
To Ordinance No. 2013-2766




WILSONVILLE ROAD
OREGON 219
PHASE 1 BYPASS
CURRENT ODOT
BID PACKAGE "OPTION 1"
(THRU-THRU DESIGN)
N

Attachment 5



Video of Wilsonville Road
Prepared by Clackamas County
(on-line)

"Newberg-Dundee Bypass Impacts Wilsonville Road"
URL:
https://www.youtube.com/watch?v=MHEh9JSkhPU&feature=youtu.be

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Ralph Bloemers
Staff Attorney
ralph@crag.org

October 8, 2015

Via Email to legal@newbergoregon.gov
and Hand Delivery
City of Newberg
City Hall
414 E First St
Newberg, OR 97132

Re: Type of Decision on Oregon Department of Transportation's Newberg Dundee Bypass Transportation System Type IV Application (the "Application")

Dear Ladies and Gentlemen:

This office represents the Ladd Hill Neighborhood Association. My colleague Maura Fahey has spoken to the attorney for the City of Newberg and asked for clarification as to whether the City of Newberg intends to follow the procedures necessary for rendering a quasi-judicial decision and issue the necessary findings of fact and conclusions of law with respect to the application entitled "Newberg Dundee Bypass Transportation System Type IV Application." This application was submitted by the Oregon Department of Transportation to the City of Newberg for its review and approval.

The Newberg City Attorney has informed us that the City intends to treat the matter as a legislative decision, not as a quasi-judicial decision. On behalf of the Ladd Hill Neighborhood Association, I write to ask that the City of Newberg reconsider its position and follow the proper procedures.

As you know, the Application details solutions to traffic and safety issues that have been identified through public participation. The Application was submitted by the Oregon Department of Transportation to meet its obligations under the federal law (the National Environmental Policy Act) and mitigate significant negative impacts that would result from the Phase 1 terminus. Specifically, the Phase 1 eastern terminus was found to increase traffic and decrease safety on Wilsonville Road where the temporary configuration of the eastern terminus of the Bypass feeds into local roads.

To address the safety concerns and as mitigation for the potentially significant negative impacts of the temporary configuration, the Oregon Department of Transportation has proposed that the City of Newberg adopt this second amendment to its Transportation System Plan. State law governing amendment to the TSP requires that Newberg follow a specific process and that Newberg substantively determine that the amendment is consistent with State land use laws and goals.

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Oregon courts use a three-part test to determine whether a county's decision is quasi-judicial, considering: 1) whether the process is bound to result in a decision, 2) whether the decision is bound to apply pre-existing criteria to concrete facts, and 3) whether the action is directed at a closely circumscribed factual situation or a relatively small number of people. Newberg must apply pre-existing land use laws and goals to a proposal to make small modifications to an intersection and the lane configuration in a manner that protects public health and safety, as cited in the Comprehensive Plans and TSPs of all affected cities, counties and the State. The Application seeks closely circumscribed changes to a single intersection and a small segment of the terminus, neither of which requires an amendment to the existing TSP map or right-of-way footprint.

Legal Background.

In *Strawberry Hill 4 Wheelers v. Benton County Board of Commissioners*, 287 Or 591, 601 P2d 769 (1979), the Supreme Court stated the general test to be used in determining whether a local government action is quasi-judicial or legislative for purposes of judicial review pursuant to ORS 34.040. Courts look at: (1) whether the process is bound to result in a decision; (2) whether the decision is bound to apply preexisting criteria to concrete facts; and (3) whether the action is directed at a closely circumscribed factual situation or a relatively small number of persons. *Strawberry Hill 4 Wheelers*, 287 Or at 602-603, 601 P2d at 775. In a subsequent decision, this Court emphasized that quasi-judicial decisions involve application of pre-existing criteria to a discrete set of facts. *See Estate of Gold v. City of Portland*, 87 Or App 45, 51, 740 P2d 812, 815 (1987) (action need not result in decision to be quasi-judicial).

Strawberry Hill involved a decision to vacate a road pursuant to ORS 368.580. ORS 368.580 sets forth specific procedures for the county to follow, including the requirements that the county hold a public hearing and prepare a report in support of the determination that the vacation would benefit the public. *Strawberry Hill*, 287 Or at 605. ORS 368.580 did not, however, set forth any specific substantive criteria other than the criteria that the vacation should benefit the public. The State Supreme Court issued the fundamental opinion governing this determination under Oregon law:

> Generally, to characterize a process as an adjudication presupposes that the process is bound to result in a decision and that the decision is bound to apply preexisting criteria to concrete facts. The latter test alone proves too much; there are many laws that authorize the pursuit of one or more objectives stated in general terms without turning the choice of action into an adjudication. Thus a further consideration has been whether the action, even when the governing criteria leave much room for policy discretion, is directed at a closely circumscribed factual situation or a relatively small number of persons.

Id. at 602-02. In its decision, the Supreme Court focused upon whether the decision applies preexisting criteria to a discrete set of facts. The State Supreme Court held that

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the statute at issue in *Strawberry Hill* was "a hybrid." *Id.* at 606. The Court held that the statute channels the decision "by fact finding procedures and broadly stated criteria" and is therefore "a 'quasi-judicial' function for the purposes of the writ of review." *Id.* The question here is whether either the substantive requirements or the procedural requirements at play here require the City of Newberg to render the decision quasi-judicial for purposes of judicial review. As set forth below, the substantive requirements provide specific statutory criteria that must be met and the procedural requirements in this case demand public involvement and a fact-finding procedure to support the decision.

Legal Analysis.

Factor 1: Newberg is bound to make a decision in this case. The proposed TSP amendment application was submitted by ODOT, rather than initiated by the City of Newberg itself. ODOT has stated very plainly that these changes are needed to ensure the safety of Wilsonville Road and to meet land use goals for transportation. Newberg may not simply ignore ODOT's request. Newberg must issue a decision, unless ODOT withdraws the request or ODOT determines that the City approval is not required.

Factor 2: Here ODOT has set forth a suggested application of statewide planning goals and comprehensive plan provisions. The City of Newberg must investigate these and render a decision in light of these criteria. This decision is not a policy decision that will affect future land use decisions. The application presents a decision to change a temporary configuration of the highway to ensure that ODOT meets federal requirements of the National Environmental Policy Act and state land use requirements to ensure safe transportation. As ODOT explains in the proposal, the change does not require any TSP map (as in right-of-way footprint) or text amendments.

Factor 3: The two proposed changes are both confined changes to a small segment of the intersection at the east end of the proposed bypass. The proposed action is directed at a closely circumscribed factual situation related to a temporary configuration of the east end of the bypass and is designed to ensure safety and functionality of the temporary terminus.

All three of these factors are met here. Newberg must review these proposed technical changes requested by ODOT and ensure they meet the criteria in state land use law and render a quasi-judicial decision.

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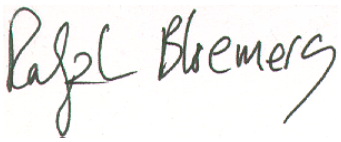
Conclusion.

The City of Newberg cannot simply label this decision a "legislative" action when it is plainly is a quasi-judicial decision matter that meets all the above tests. Ladd Hill Neighborhood Association requests that the City of Newberg reconsider its position, confirm the above interpretation and provide the public with a legally compliant process for rendering a determination on the quasi-judicial determination that is before it, which includes a hearing and decision by a neutral body of decision-makers and the issuance of findings of fact and conclusions of law. Please feel free to contact me if you have any questions, and we look forward to hearing from you.

Sincerely,



Ralph O. Bloemers
Staff Attorney
Tel. (503) 525-2727

City of Newberg

Community Development Department
P.O. Box 970 ▪ 414 E First Street ▪ Newberg, Oregon 97132
503-537-1240 ▪ Fax 503-537-1272 ▪ www.newbergoregon.gov

October 26, 2015

Ralph Bloemers
Crag Law Center
917 SW Oak Street, Suite 417
Portland, OR 97205

Re: Type of decision for ODOT Type IV application for a Comprehensive Plan amendment

Ralph,

We received your letter regarding whether the city's review process should be quasi-judicial or legislative for the Oregon Department of Transportation (ODOT) application for a Type IV Comprehensive Plan amendment. This is a process authorized in Newberg Municipal Code (NMC) 15.100.060, which plainly states that Type IV Actions are Legislative. The City will follow the requirements of the municipal code.

I appreciate your analysis on the issue; however, the three-pronged analysis laid out by the courts for a quasi-judicial decision has not been met. As you note, the three prongs are:

1) *Is the process bound to result in a decision?* The answer to this is "yes," the NMC requires that an application be processed and a decision rendered.

2) *Is the decision bound to apply preexisting criteria to concrete facts?* The answer to this is not as clear cut. Oregon Administrative Rule 660 Division 12 governs TSPs, and does not specifically spell out criteria for amendments. The applicable portions of OAR 660 Division 12 to this matter are the following:
   - 660-012-0015(4): Cities and counties shall adopt regional and local TSPs required by this division as part of their comprehensive plans. Transportation financing programs required by OAR 660-012-0040 may be adopted as a supporting document to the comprehensive plan.
   - 660-012-0045(1)(c): In the event that a transportation facility, service or improvement is determined to have a significant impact on land use or to concern the application of a comprehensive plan or land use regulation and to be subject to standards that require interpretation or the exercise of factual, policy or legal judgment, the local government shall provide a review and approval process that is consistent with OAR 660-012-0050. To facilitate implementation of the TSP, each local government shall amend its land use regulations to provide for consolidated review of land use decisions required to permit a transportation project.
   - 660-012-0050(5): If a local government decides not to build a project authorized by the TSP, it must evaluate whether the needs that the project would serve could otherwise be satisfied in a manner consistent with the TSP. If identified needs cannot be met consistent with the TSP, the local government shall initiate a plan amendment to change the TSP or

the comprehensive plan to assure that there is an adequate transportation system to meet transportation needs.

You state in your letter that "State law governing amendment to the TSP requires that Newberg follow a specific process and that Newberg substantively determine that the amendment is consistent with State land use laws and goals." The state law clearly says that the city may determine the approval process for the TSP/comprehensive plan amendment. There are not clear and objective criteria for a comprehensive plan amendment; rather, the amendment must meet comprehensive plan goals and policies and statewide planning goals, which are more aspirational in nature than clear and objective criteria tailored to concrete findings of fact. Your letter additionally states that "The application presents a decision … to ensure that ODOT meets federal requirements of the National Environmental Policy Act and state land use requirements to ensure safe transportation"; however, you do not list any applicable fact based criteria the city would be required to use for a decision. If you have additional information on this subject that you believe the City should consider, please provide that immediately.

3) *Is the action directed at a closely circumscribed factual situation or a relatively small number of persons?* The answer to this question is clearly "no," for several reasons. First, the situation is an intersection in the city's transportation network, and changes to the framework of the intersection have ripple effects throughout the transportation network in that region of the city. Second, due to the ripple effect of the potential transportation network, hundreds of city residents may be impacted by increased traffic through their neighborhoods. Third, the Ladd Hill Neighborhood Association themselves often reference their coalition, which includes Clackamas County, City of Wilsonville, and West-Linn Wilsonville School District, as well as their assertion that the intersection design will impact the 12-plus miles of road in multiple jurisdictions, all the way up to the I-5 interchange in Wilsonville. Fourth, as described in number 2 above, there is not a closely circumscribed factual situation that is easily addressed with clear and objective criteria, but rather a situation requiring analysis of data using professional judgment.

It is clear that any decision made on the intersection potentially impacts a large cross-section of people as well as the regional transportation network, exceeding the bounds for a quasi-judicial decision. In addition, there are not clear and objective criteria tailored to concrete facts that can be relied upon for a quasi-judicial decision. For these reasons, the decision must follow the city's legislative process for a decision on the TSP/Comprehensive Plan amendment.

Please contact me with any questions or if you have additional information you would like to share. We will continue to keep you informed of any actions taken with this application.

Sincerely,

Jessica Pelz, AICP
Associate Planner

cc: Truman Stone, City Attorney; Doug Rux, Community Development Director; Kelly Amador, ODOT Project Manager

Public comments at the Newberg City Planning Commission 8 Oct 2015
Brent Ahrend, PE, Senior Associate, Assistant Department Head, Transportation Planning, Mackenzie Engineering, Portland, OR:

My name is Brent Ahrend. I am here today (8 Oct) before the Newberg City Planning Commission to provide a rebuttal to several points Mr. Bliss made at the Newberg City Council 21 Sept 2015 meeting during the Public Comments period with respect to *Newberg Resolution 2015-3218 initiating an amendment to the TSP for changes to the road and lane configuration of Highway 219 and the Highway 219/Phase 1 Bypass/Wilsonville Road intersection.* As members of the City Planning Commission, you each need accurate and current information for preparing your analysis and recommendations back to the City Council on this matter. My comments are also being submitted to the City Planning Commission in writing along with a verbatim transcript of Mr. Bliss' public comments.

I do wish to make one important clarification first. There has been much confusion with respect to our analysis, using ODOT and Kittleson data, that shows that the 'no-thru' design would cause a MAXIMUM increase in traffic on Newberg local streets of 3-4%. This means that these streets might only see an additional 25 cars per peak hour ('no-thru' vs. 'thru-thru'). That's less than one car every two minutes. Wilsonville Rd. could see many 100's of vehicles per hour in both directions with the 'thru-thru' design, due to commuters, beach traffic, and others seeking a 12+ mile short-cut to/from I-5 who want to avoid 99W. With a 'thru-thru' intersection in place, Garmen GPS, Google Maps, Wayz, etc. would point straight-ahead despite any signage otherwise.

With all due respect to Mr. Bliss, who has had a long career as a civil engineer, traffic engineers are the ones who figure out traffic flow, lane configurations and intersection control. Civil engineers, like Mr. Bliss, prepare the final design, right-of-way needs and construction documents. Specifically:

NO THRU DESIGN ORIGIN & VETTING:

- The no-thru design originated from ODOT to address major public safety and concerns along Wilsonville Rd. The State Highway and Traffic Engineer, Mr. Bob Pappe has reviewed and approved the 'no-thru' design concept back in March, 2015. Thus, this design has been vetted at the highest levels in ODOT.
- In fact, the 'no-thru' design has been shown to increase the efficiency of traffic flow at the Bypass intersection by allowing a longer time per signal sequence for traffic to go from the Bypass north to Springbrook Rd.

TRAFFIC IMPACT ON LOCAL STREETS:

- Drivers traveling between west Yamhill County and Wilsonville Road may choose to use Fernwood, Coral Creek, and Renne Road, but more likely would continue to use Hwy 99W through Newberg as they currently do.
- Mr. Bliss notes some traffic to and from Wilsonville Road is from Hwy 219. This will still be directly allowed from 219 South to make a left onto Wilsonville Rd. or 219 North to make a right onto Wilsonville Rd. The only restriction will be traffic traveling on the Bypass (existing Hwy 99W traffic that is traveling through Newberg).

THE NO-THRU DESIGN IS NOT A 'PORK CHOP":

- It is not relevant to compare the proposed intersection configuration with a right turn driveway restriction using a "pork chop". The medians proposed are much different than a "pork chop" used at a driveway.
- I agree with Mr. Bliss that a driveway restriction using only a pork chop is known to be ineffective at prohibiting left turn movements – a raised median in the through street is needed to effectively restrict left turn movements. However, this is not relevant for the Bypass/OR219/Wilsonville Road signaled intersection.
- Mr. Bliss states he has designed similar intersections, but only provides examples of driveways with pork chops, not signalized intersections with channelization.

BOTTOM LINE:

- The no-through restriction will be implemented through a combination of channelization, medians, striping, signing and traffic signal control. There is no need for a raised median on Hwy 219 as Mr. Bliss implies. Illegal cross 219 traffic (east of west) will be mitigated by both Wilsonville Rd. westbound and the Bypass eastbound left turns occurring simultaneously.

Transcript: Gary Bliss Public Comments: Newberg City Council Meeting 21 Sept 2015

Mayor Andrews: Mr. Gary Bliss

Gary Bliss: Mr. Mayor, Councilmen, my name is Gary Bliss. As some of you know, I am chair of the Planning Commission, but not here in that capacity this evening. I am here as a resident and as a retired civil engineer. I have reviewed this plan and think it does not merit further study or cost by the City for a plan that will not function as it is intended. In my 45 years as a civil engineer, I built many arterial roads. One is Evergreen Road in Hillsboro, Cornell Rd. in Beaverton, Walker Rd. in Beaverton, and 158th just to name four. And, when I've dealt with that, I've been imposed by ODOT as well as Washington County to construct intersections very similar to what's being proposed tonight. And that is a right-in, right-out, denying cross-traffic or left turns. And that's through what is known as a 'pork chop'. And the pork chop is supposed to divert traffic left or right. It's been my experience that they don't work. People ignore signs. They ignore traffic lines or arrows. I had an instance on Cornell Rd. at an intersection at a major shopping center. We tried a pork chop – it was the State's design. We found that people ignored it. They made illegal turns constantly. So we put in a median that was raised about 6". People drove over it. They ignored signs. We put in rubber bollards; they ran through those. Finally, the only result since this was a T-intersection, was to put in a raised concrete curb. Obviously, in this alignment, in this design, a vertical curb is not going to work, because you have a left turn off of southbound 219 traffic to get onto Wilsonville Rd. I use Wilsonville Rd. quite often to visit my grandson in Wilsonville and, yes, there's traffic on Wilsonville Rd. and people travel too fast. And a lot of the traffic I find comes from the intersection of 219 and Springbrook Rd. to the intersection of Springbrook Rd. and Wilsonville Rd. When this proposal cuts that off, it eliminates cross-traffic, so that anyone in West Yamhill County, West Newberg or North Newberg, is not going to have access to Wilsonville Rd. unless they travel Fernwood Rd., then go to Coral Creek Rd. and then turn on that to Renee Rd., which is about 16' wide, very narrow and has horrendous curves in it, in order to reach

Wilsonville Rd. In my many trips over Wilsonville Rd., I have absolutely never seen any difficulty at any intersection, of any sub-division, or any of the County roads. Wilsonville Rd. is a County road for the purpose of joining communities. This is denying it. I do not understand that the State for years have taken the Bypass as a local issue. It's not a local issue, it's a regional issue. All of a sudden now, we are into a regional issue because we have Clackamas County and homeowners in Clackamas County dictating to Newberg what we should do to throw transient traffic off the Bypass or off 219 onto our local roads. Several years ago, this Council, or the City, at least, have approved the allowance of golf-carts on Brutscher and on Fernwood Rd. Now we are suggesting that we introduce transient traffic to mix with that. There are four neighbors within my neighborhood which is 55 homes that have golf-carts to go to the golf course.

Mayor Andrews: I need you to wrap up please.

Gary Bliss: They use Fernwood Rd. There are 250 homes in the proximity of the golf course that could use that same road with golf carts. So I suggesting that the City not expend money or proceed with considering this design. Thank you.

Jessica Nunley Pelz

From: CAROL <cbanyard@msn.com>
Sent: Tuesday, October 13, 2015 4:20 PM
To: PLANNING
Subject: Newberg Dundee Bypass

Just a note of concern re: not using Wilsonville Rd as an access to Springbrook Rd when the bypass is put in.
We have a farm on St Paul Hwy and it is becoming a major thoroughfare between I-5 and Newberg and points West. I fear that with the bypass, the Donald interchange which is already busy will not be able to accommodate The additional traffic from the north. Farmers use St Paul Hwy frequently to move equipment and crops.
I hope you stick to your decision to have Wilsonville Rd as a conduit to reduce some congestion on St Paul Hwy.
Thank you for your time.
Sent from Mail for Windows 10

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

MEMORANDUM

TO: Bill Gille, Yamhill County
John Phelan, Yamhill County
Terry Cole, ODOT Region 2

FROM: Bob Schulte, PTP
Julie Sosnovske, P.E.

DATE: November 30, 2012

SUBJECT: **YAMHILL COUNTY TRANSPORTATION SYSTEM PLAN** **P# 11086-04**
Technical Memorandum #3 – Existing Transportation Conditions

This memo documents the analysis of existing transportation conditions for the Yamhill County Transportation System Plan. The findings of the analysis will be used in the development of proposed improvements to address transportation needs within the county.

The objective of the study is the development of a comprehensive transportation plan document that will serve to guide transportation system management and project programming for both state and county facilities over the next 20 to 25 years.

The study area, shown in Figure 1, comprises the rural portion of Yamhill County and does not include incorporated areas or county roads within these areas. Within the study area, agriculture is the predominant land use, with some commercial and residential development. The wine industry is a significant component of the agricultural sector. Over 80 wineries and 200 vineyards represent the largest concentration of wine growers and producers in Oregon.

Yamhill County is adjacent to Tillamook, Washington, Clackamas, Marion, and Polk Counties. Thus, there is a significant amount of commute traffic between the incorporated areas of the county, such as Newberg and McMinnville, and the Portland metropolitan and Salem areas. The primary commute routes are OR 99W, OR 47, and OR 221. OR 99W and OR 18 also serve as one of the main routes for recreational travel from the Portland area to the Oregon coast.

Yamhill County Transportation System Plan

Figure 1: Study Area

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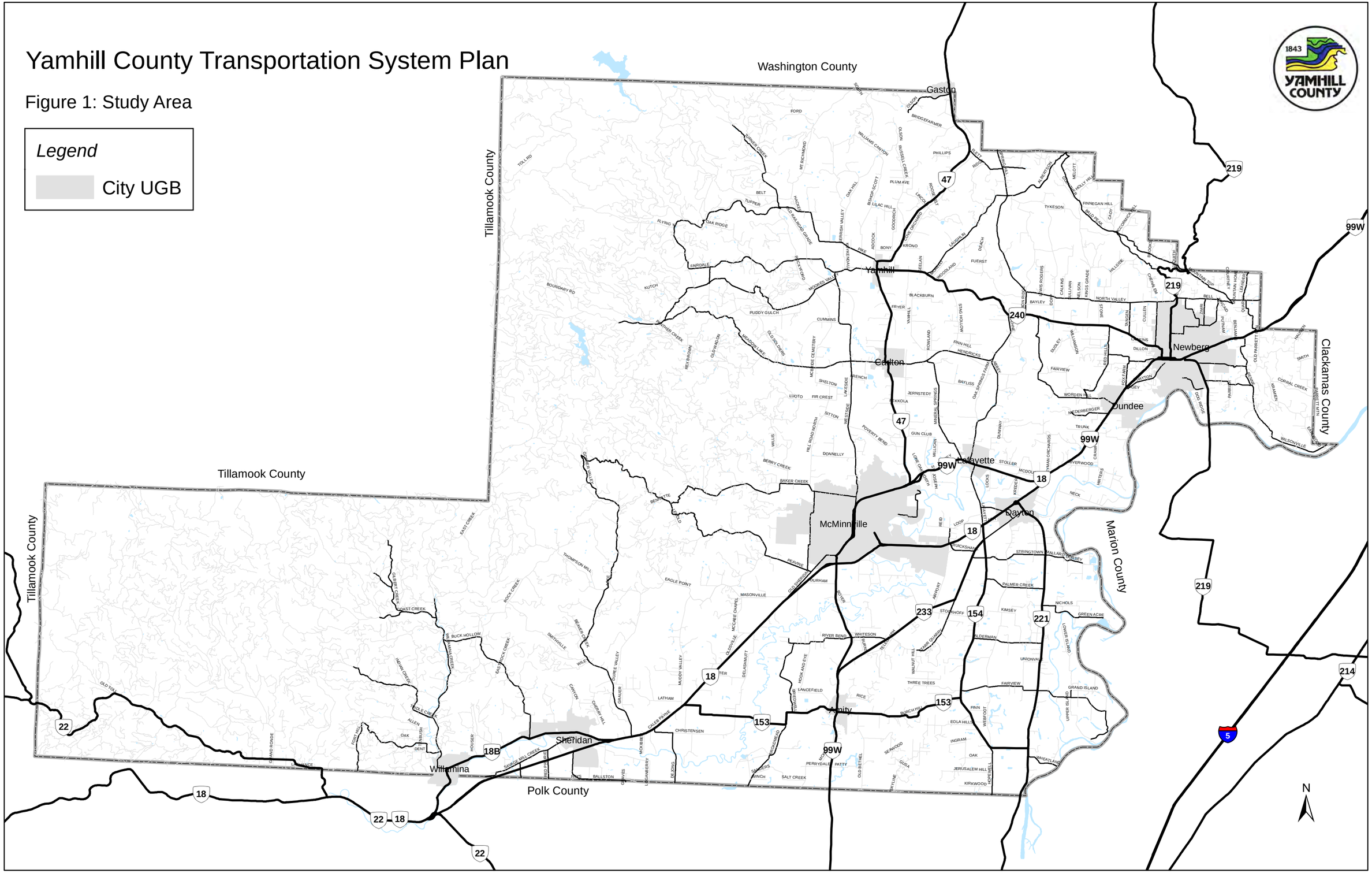
City UGB



Two approaches were used in the analysis of existing transportation conditions. With the first approach, transportation data such as traffic volumes and roadway characteristics were collected and analyzed. The results of the analysis were compared to standards, and for locations that did not meet the standards, a need was identified. The second approach was to gather information on existing transportation needs from stakeholders, agency staff, and members of community. This information was obtained through stakeholder interviews, meetings with ODOT and Yamhill County roadway maintenance staff, and input from the county's Road Improvement Advisory Committee (RIAC). The reported needs from these sources were cataloged, and field reconnaissance was conducted at the reported need locations to investigate the nature of the problems.

ROADWAYS

FACILITIES

Network Overview

The existing study area roadway network comprises roughly 117 miles of state highways and 210 miles of county roadways classified as minor collector or above. There are eleven state highways within the study area. The areas they serve are listed below in Table 1.

Table 1 – State Highways Within Study Area

State Highway	ODOT Highway Number	Primary Areas Served
OR 18	039	Dayton and McMinnville, with connections to Sheridan, Willamina, and the Oregon Coast
OR 18B	157	Sheridan, Willamina
OR 22	032	Connection between OR 18 and Oregon Coast
OR 47	029	Yamhill, Carlton, and McMinnville, with connection to Washington County
OR 99W	091	Newberg, Dundee, Lafayette, McMinnville, and Amity, with connections to Portland and Polk County
OR 153	153	Amity, south Yamhill County
OR 154	154	Dayton, south Yamhill County
OR 219	140	Newberg, east Yamhill County, with connections to Washington County and Woodburn
OR 221	150	Dayton, south Yamhill County, with connection to Salem

State Highway	ODOT Highway Number	Primary Areas Served
OR 233	155	Amity, Dayton
OR 240	151	Newberg, Yamhill

Functional Classification

The county's existing functional classification system was reviewed and updated in coordination with Yamhill County staff and the RIAC. The functional classification system describes the hierarchy of roadway types and their relative roles in the system, and provides criteria for classifying specific roadways.

The roadway network performs two essential functions: to facilitate mobility and provide access to property. Higher classified roadways (e.g., freeways and arterials) primarily provide mobility, while lower classified roadways, such as local roads, primarily provide land access. Intermediate classifications (e.g., collectors) serve both mobility and access needs.

The classifications provide guidance for the design standards to be applied when a roadway is improved and, for county roads, prioritization of improvement and maintenance projects. The county's design standards are applied for county roads and ODOT's design standards are applied for state highways.

The updated functional classification system is summarized in Table 2. The classification assigned to each roadway is shown in Figure 2.

Table 2 – Functional Classification System

Classification	Description/Characteristics
Principal Arterial	• Carries substantial volume of statewide or interstate travel. • Penetrates urban boundaries or comes within 10 miles of the center of an urban area.
Minor Arterial	• Links cities, larger towns, and other major traffic generators, providing interregional and intercounty service. • Serves travel flows of greater length and density than those served by lower classified roads. • Connects state highways.

Classification	Description/Characteristics
	• Typically carries average daily traffic (ADT) volume of 2,000 or higher.
Major Collector	• Provides service to larger towns not served by higher classified roads. Also serves schools, county parks, and important agricultural areas. • Connects these places with nearby larger towns or cities or with arterials. • Serves intracounty travel.
Minor Collector	• Collects traffic from local roads. • Provides service to remaining smaller communities. • Serves locally important traffic generators.
Resource Road	• Provides a connection between resource areas and the remaining roadway network. • Facilitates movement of goods and services.
Local Roads	• Provides access to adjacent land and higher classified roads. • Accommodates travel over shorter distances compared to collectors or arterials.

As shown in Figure 2, most state highways are classified as principal arterials or major arterials under the county's updated functional classification system. There are a few county roads classified as minor arterials, primarily in the more developed northern portion of the study area (Westside Rd., Abbey Rd./Kuehne Rd., Hendricks Rd., Spring Hill Rd./Flett Rd., Wilsonville Rd., Stringtown Rd., and Hopewell Hwy.). Most of the county roads, however, are classified as collectors, resource, or local roads.

Physical and Operational Features

The number of through travel lanes for state highways within the study area is shown in Figure 3. The majority of state highways are two-lane facilities, with additional through lanes at some locations along OR 99W and OR 18. Turning lanes are provided at most major intersections along OR 99W and OR 18, but generally are not provided on other state highways. Existing turn lanes are shown in Figure 4.

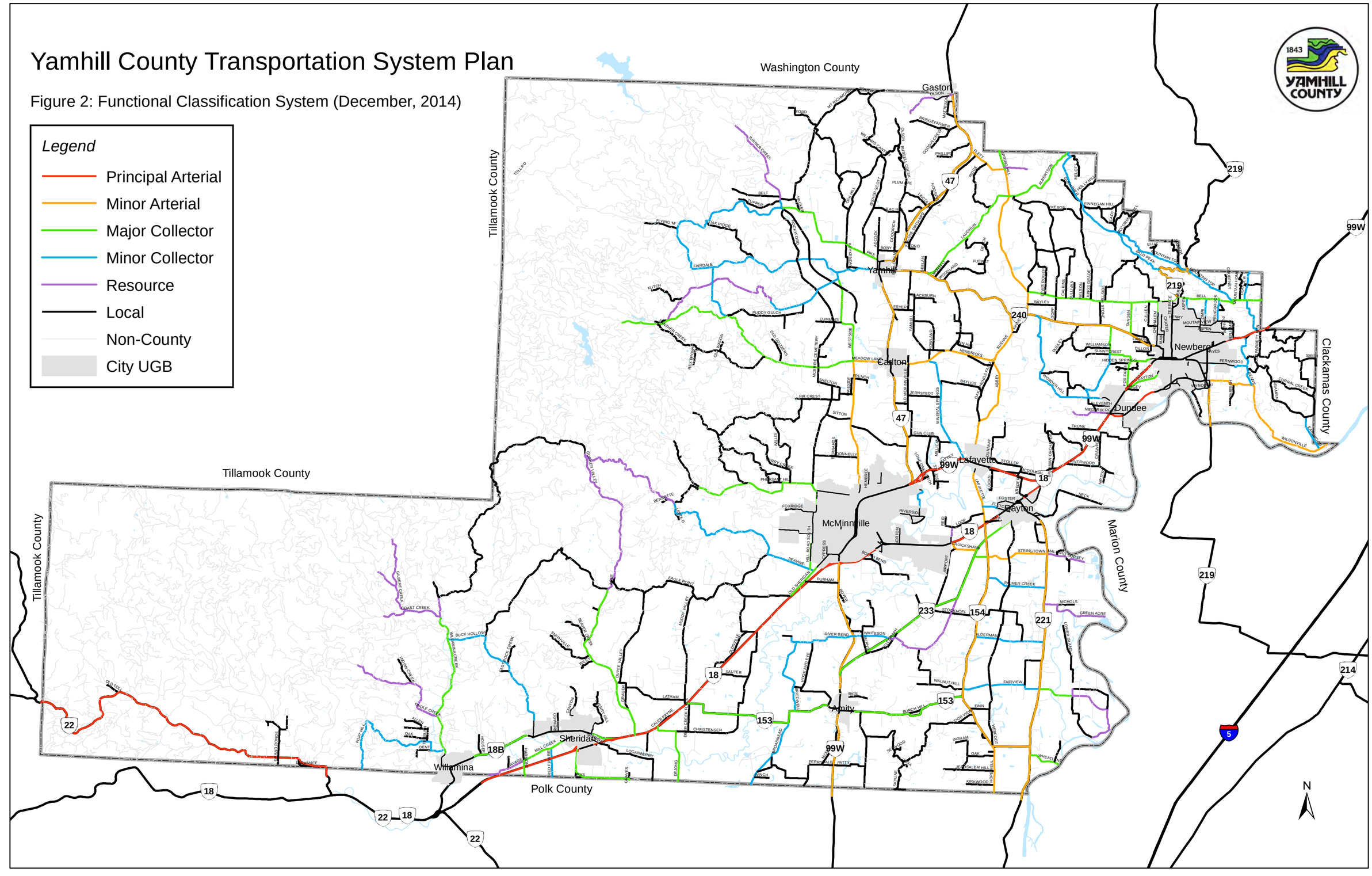
The basic speed rule is in effect for almost all state highways, with isolated slower speed zones in rural developed areas. There are no signalized intersections along state highways outside of the incorporated areas in the county.

Yamhill County Transportation System Plan

Figure 2: Functional Classification System (December, 2014)

Legend

- Principal Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Resource
- Local
- Non-County
- City UGB

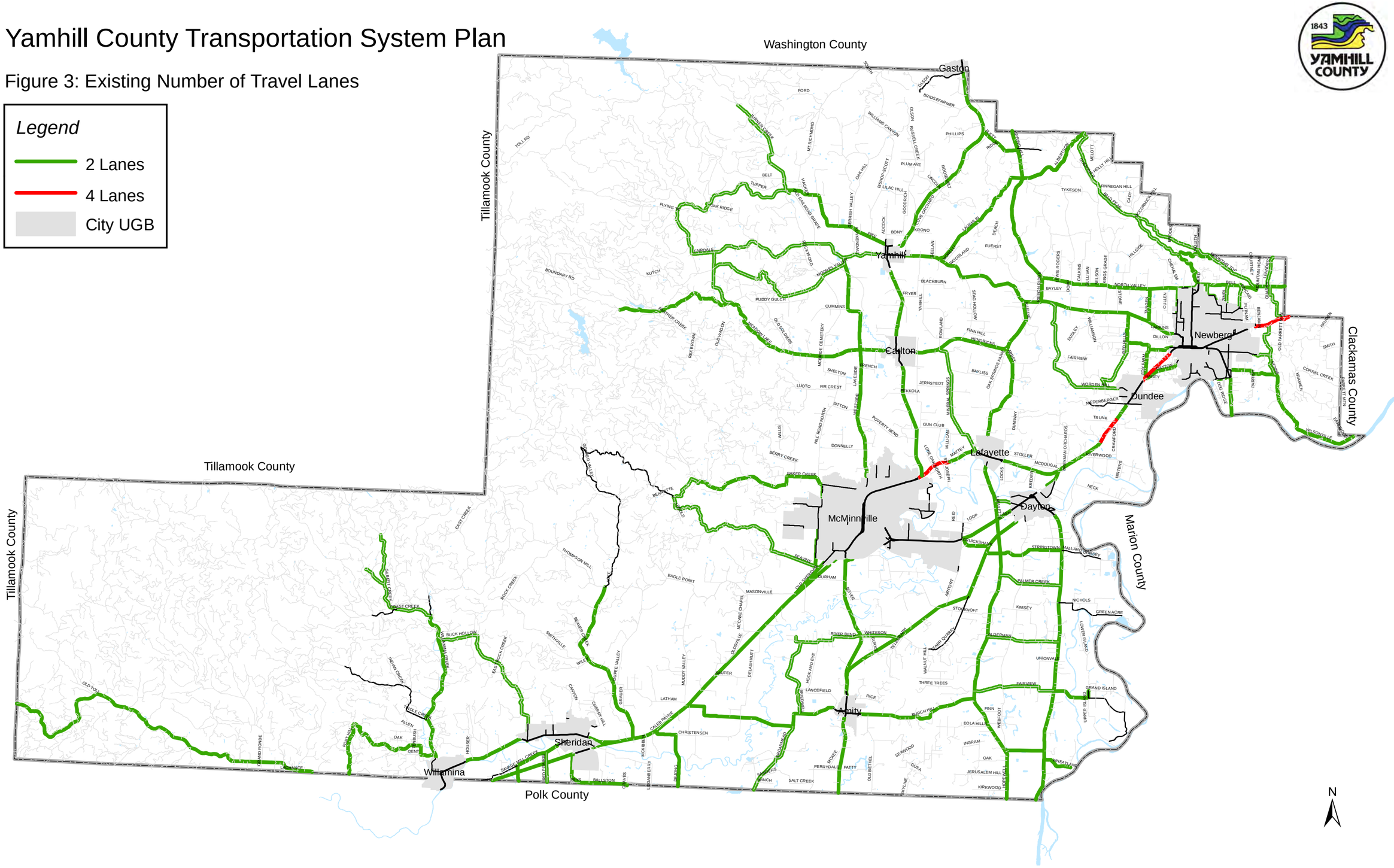


Yamhill County Transportation System Plan

Figure 3: Existing Number of Travel Lanes

Legend

- 2 Lanes
- 4 Lanes
- City UGB



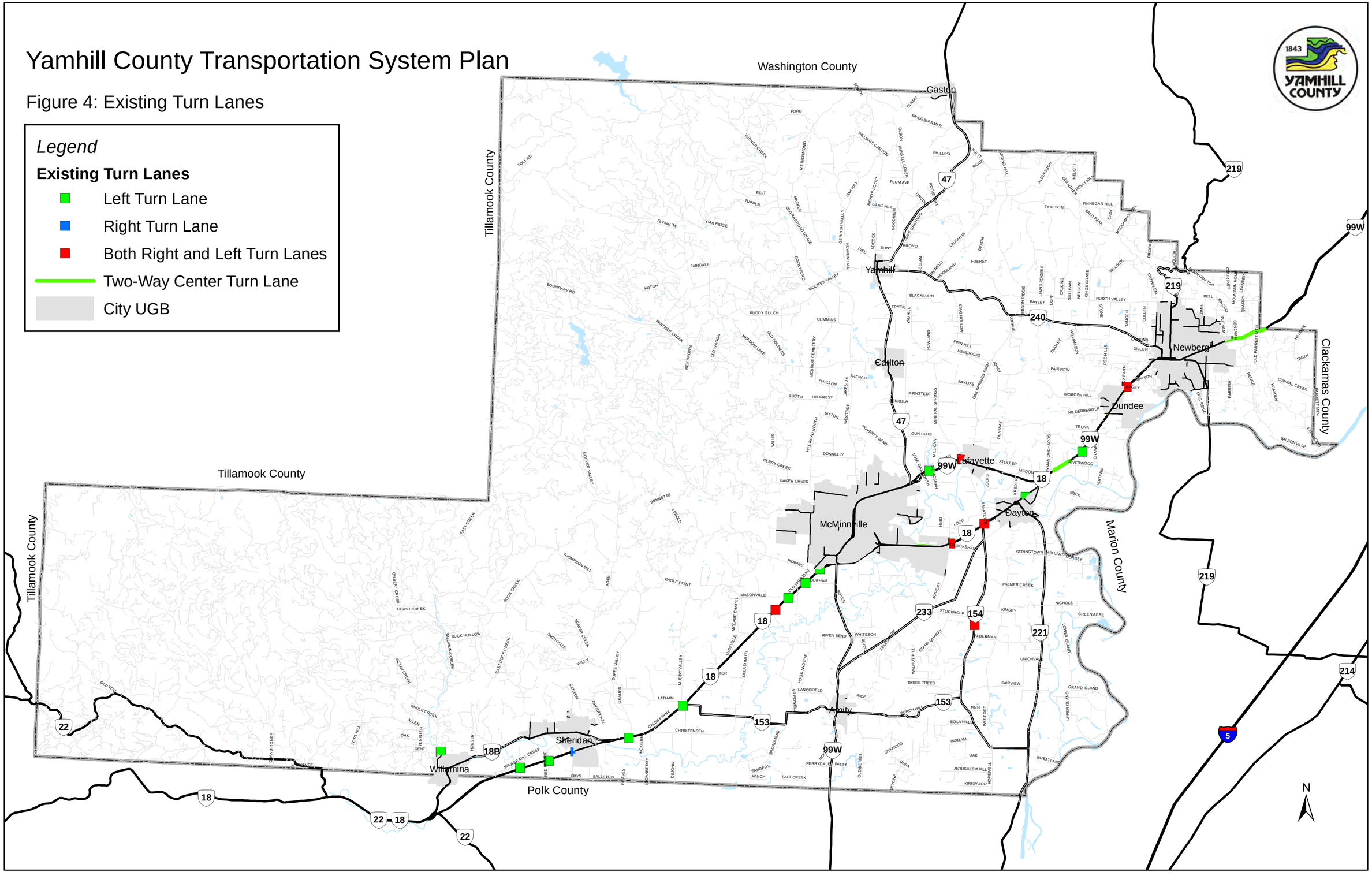
Yamhill County Transportation System Plan

Figure 4: Existing Turn Lanes

Legend

Existing Turn Lanes

- Left Turn Lane
- Right Turn Lane
- Both Right and Left Turn Lanes
- Two-Way Center Turn Lane
- City UGB



The county road system is comprised entirely of two-lane road segments with no medians. Most of the county roadways classified as resource road or above are paved; those segments that are gravel are shown in Figure 5. The local roads are mostly gravel. Turn lanes are provided on only a few intersection approaches, as shown in Figure 4. The basic speed rule covers most of the system, with slower speed zones in rural developed areas and for specific segments with geometric deficiencies. Currently within the rural area, there are no signalized county intersections. There is, however, four-way stop control at isolated locations, such as the Westside Rd./Meadow Lake Rd. intersection.

TRAFFIC VOLUMES

Traffic volume data was obtained from several sources, including ODOT, Yamhill County and traffic counts collected specifically for this study.

ODOT data included Automatic Traffic Recorder (ATR) data at three locations in Yamhill County, as well as turning movement counts and vehicle classification counts. In addition, 2009 annual average daily traffic (AADT) volumes were obtained for each link on the state highway system.[1]

County data included hourly volume classification counts collected over roughly the past 10 years as a part of the county's annual traffic counting program.

The counts conducted specifically for this study included 20 P.M. peak hour intersection turning movement counts, five 16-hour vehicle classification turning movement counts, and twelve 24-hour two-way tube counts.

Daily Volumes

A summary of the AADTs for state highways throughout the study area is shown in Figure 6. The state highways within the study area carry volumes generally ranging between 3,000 and 15,000 vehicles per day. However, volumes are as low as less than 1,000 vehicles per day on some district-level routes and as high as over 30,000 vehicles per day on OR 99W east of Newberg. The highest-volume routes are OR 99W between the Washington County line and Newberg and OR 18.

[1] ODOTs FACS (Features, Attributes & Conditions Survey) Data To Go, data obtained in February/March 2012.

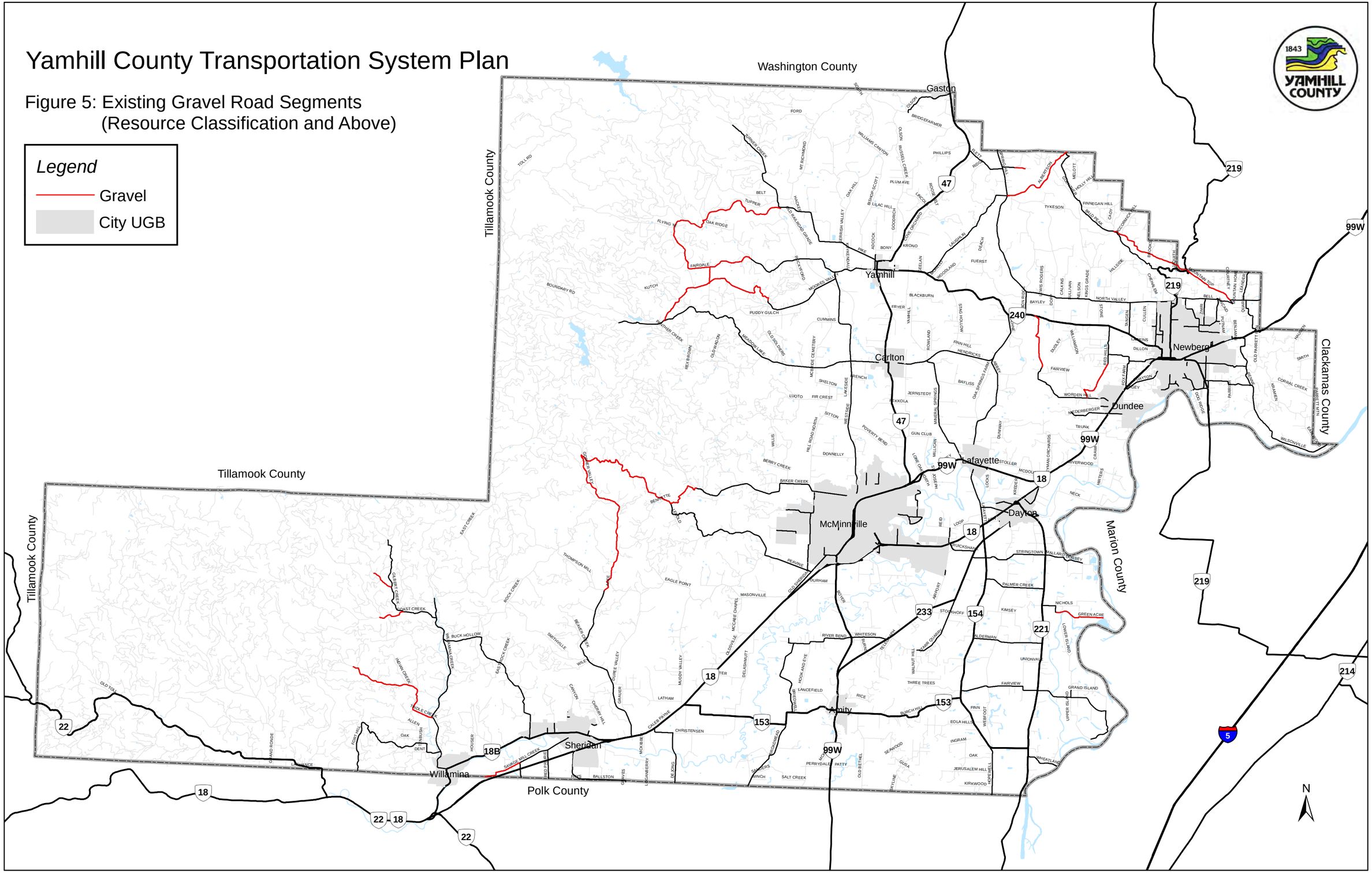
Yamhill County Transportation System Plan

Figure 5: Existing Gravel Road Segments
(Resource Classification and Above)

Legend

Gravel

City UGB



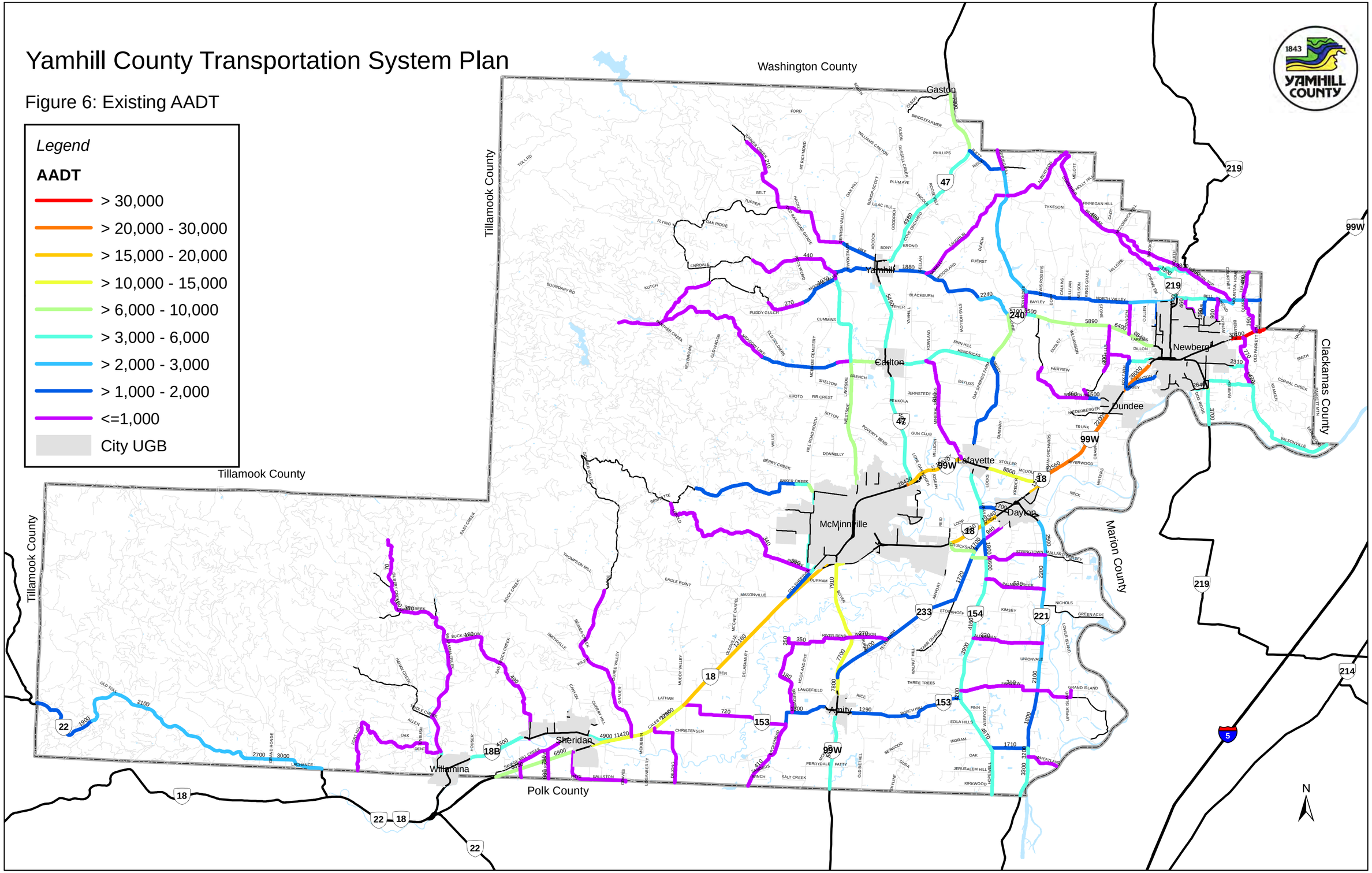
Yamhill County Transportation System Plan

Figure 6: Existing AADT

Legend

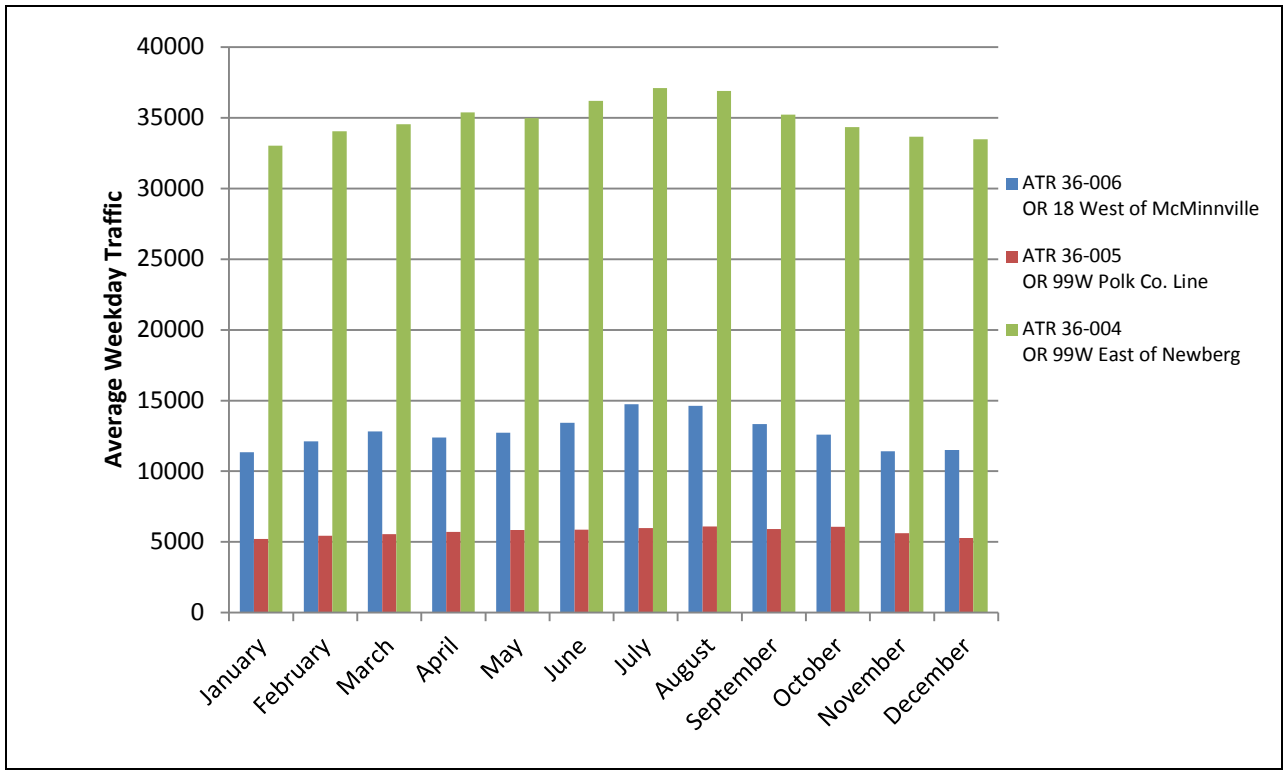
AADT

- > 30,000
- > 20,000 - 30,000
- > 15,000 - 20,000
- > 10,000 - 15,000
- > 6,000 - 10,000
- > 3,000 - 6,000
- > 2,000 - 3,000
- > 1,000 - 2,000
- <=1,000
- City UGB



A majority of county roadways carry less than 1,500 vehicles per day, with the highest volume about 5,000 vehicles per day. Figure 7 shows monthly volume profiles developed based on data from ODOT's three ATRs in Yamhill County.

Figure 7 – Monthly Volume Profiles



These indicate that:

- Along OR 99W near the Polk County line, volumes do not vary significantly over the course of the year.
- There is some seasonal variation in volumes on OR 99W east of Newberg, but this is dampened due to the effect of commuter traffic, which is fairly consistent throughout the year.
- Seasonal variation is the strongest along OR 18 to the west of McMinnville, where recreational travel makes up a larger percentage of the total traffic than at locations further to the east.

Hourly Volumes

Hourly volume profiles for a sample of state highways and county roadways are shown in Figure 8. The routes were separated into three groups:

- High - volume/high - peaking routes (state highways used as primary commute routes)
- Medium - volume/medium peaking routes (routes used for both commuting and local traffic)
- Low - volume/low - peaking routes (routes used primarily for local traffic)

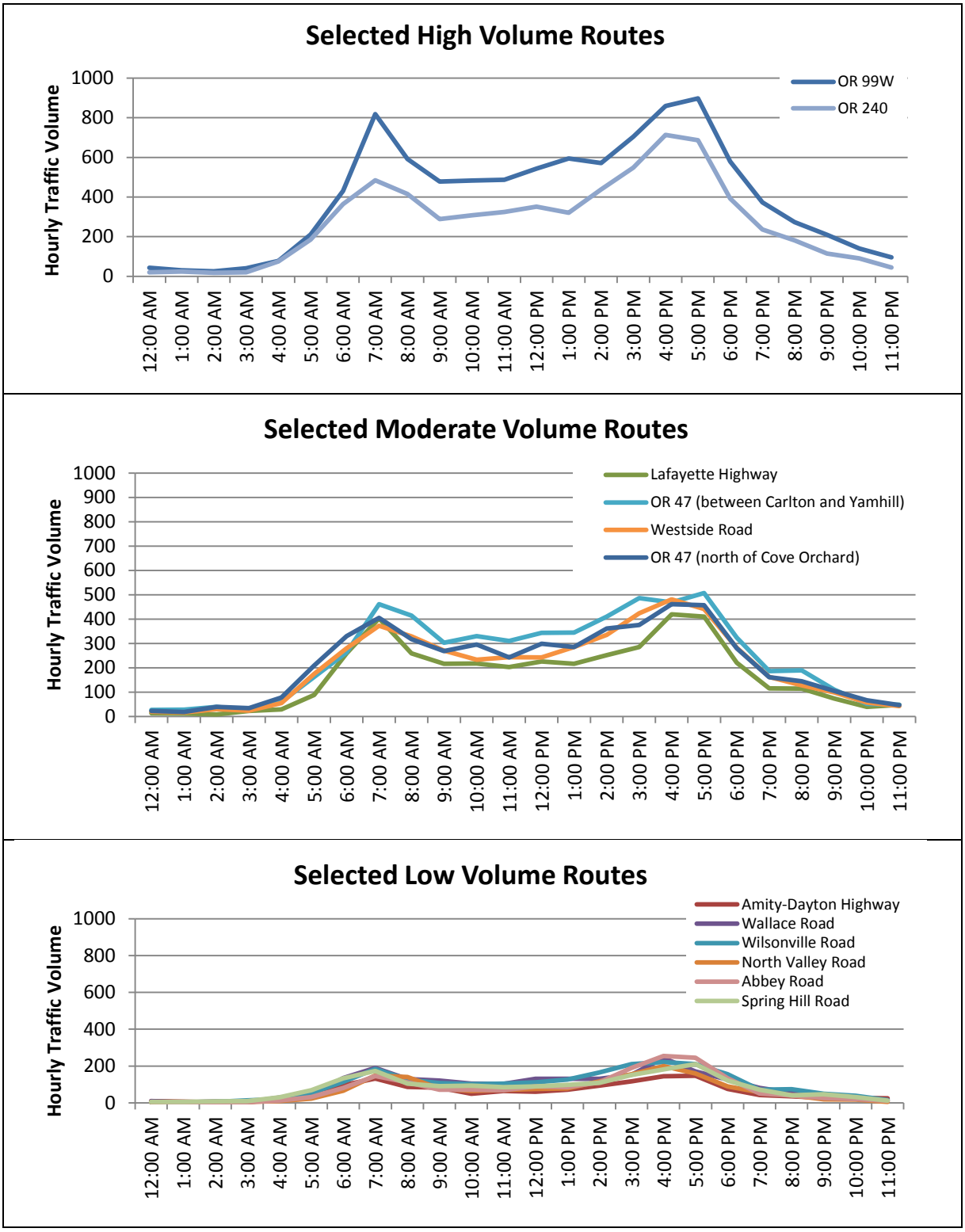
These profiles indicate that traffic volumes typically peak between 6 - 8 A.M. and 3 - 6 P.M., with the peaks more pronounced for the higher volume routes. The morning peaks generally have lower volumes than the afternoon peaks.

NEEDS

Existing roadway needs within the unincorporated portion of Yamhill County are significantly different than the needs typically found in urban areas. This is due both to the low density of development in rural areas as well the character of the roadway network that has been built to serve this development. Because of the higher development densities in urban areas, the most serious needs are usually related to mobility and traffic operations. Geometric deficiencies are of lower importance because urban streets are built to relatively high design standards. In rural areas, on the other hand, mobility is less frequently an issue and operational problems are primarily related to deficient geometrics or the lack of passing opportunities. Safety and geometric deficiencies are, however, of greater importance than in urban areas. In the unincorporated area of Yamhill County this is not surprising, since many of the roads were never designed, but simply evolved as transportation needs arose.

Existing needs were analyzed in the areas of mobility, traffic operations, safety, geometrics, and access. With the exception of mobility, this was done for roadways with a functional classification of minor collector or higher.

Figure 8 – Hourly Volume Profiles



As mentioned previously, two approaches were used in the analysis of existing transportation conditions. With the first approach, transportation system data such as traffic volumes and roadway characteristics were collected and analyzed. The results of the analysis were compared to standards, and for locations that did not meet the standards, a need was identified. The second approach was to gather information on existing transportation needs from stakeholders, county and ODOT road maintenance and traffic engineering staff and the RIAC. The reported needs from these sources were cataloged, and field reconnaissance was conducted at these locations to confirm the need and investigate the nature of the problem.

Mobility Needs

Analysis Volumes

Design hour volumes (DHVs) for state highways are shown in Figure 9. These volumes correspond to the 30th highest hour, the time period for which existing conditions on state highways were analyzed. The volumes were developed based on ODOT's reported AADT volumes for state highway segments using the procedures contained in ODOT's Analysis Procedures Manual (APM).[2] K_{30} factors[3] were applied to the AADT volumes to obtain a DHV for each analysis segment.

For county roadways, average weekday peak hour volumes were used for the segment analysis (see Figure 10). The average weekday peak hour was selected rather than the 30th highest hour because for county roadways, there is less difference between peak hour volumes and 30th highest hour volumes compared to state highways, which typically have a stronger seasonal traffic component. These volumes were developed by multiplying the county's most recent daily traffic counts by an average peak hour factor ($K_{Peak\ Hour}$). An overall countywide peak hour time period of 4-5 P.M. was established using bi-directional county traffic counts for a range of roadways and functional classifications. Two $K_{Peak\ Hour}$ factors were developed, one for arterial roadways and the other for collectors, based on the relationship between the peak hour (4-5 P.M.) volumes and daily volumes for a sample of roadways for each functional classification.

[2] Oregon Department of Transportation, Analysis Procedures Manual, (2011).
[3] K_{30} factors were obtained from ODOT's OTMS Traffic Volume and Vehicle Classification (2010) database.

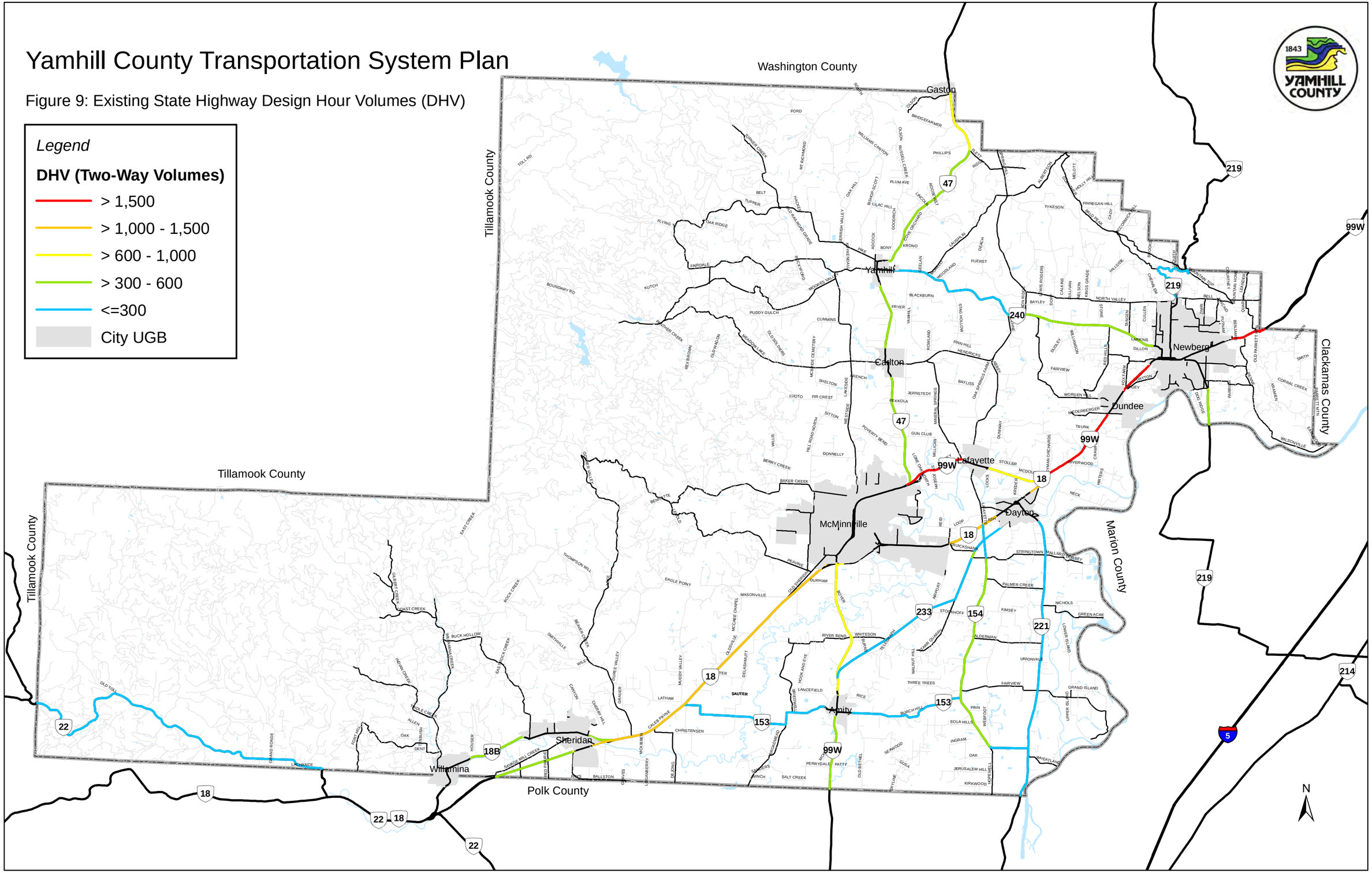
Yamhill County Transportation System Plan

Figure 9: Existing State Highway Design Hour Volumes (DHV)

Legend

DHV (Two-Way Volumes)

- > 1,500
- > 1,000 - 1,500
- > 600 - 1,000
- > 300 - 600
- <=300
- City UGB



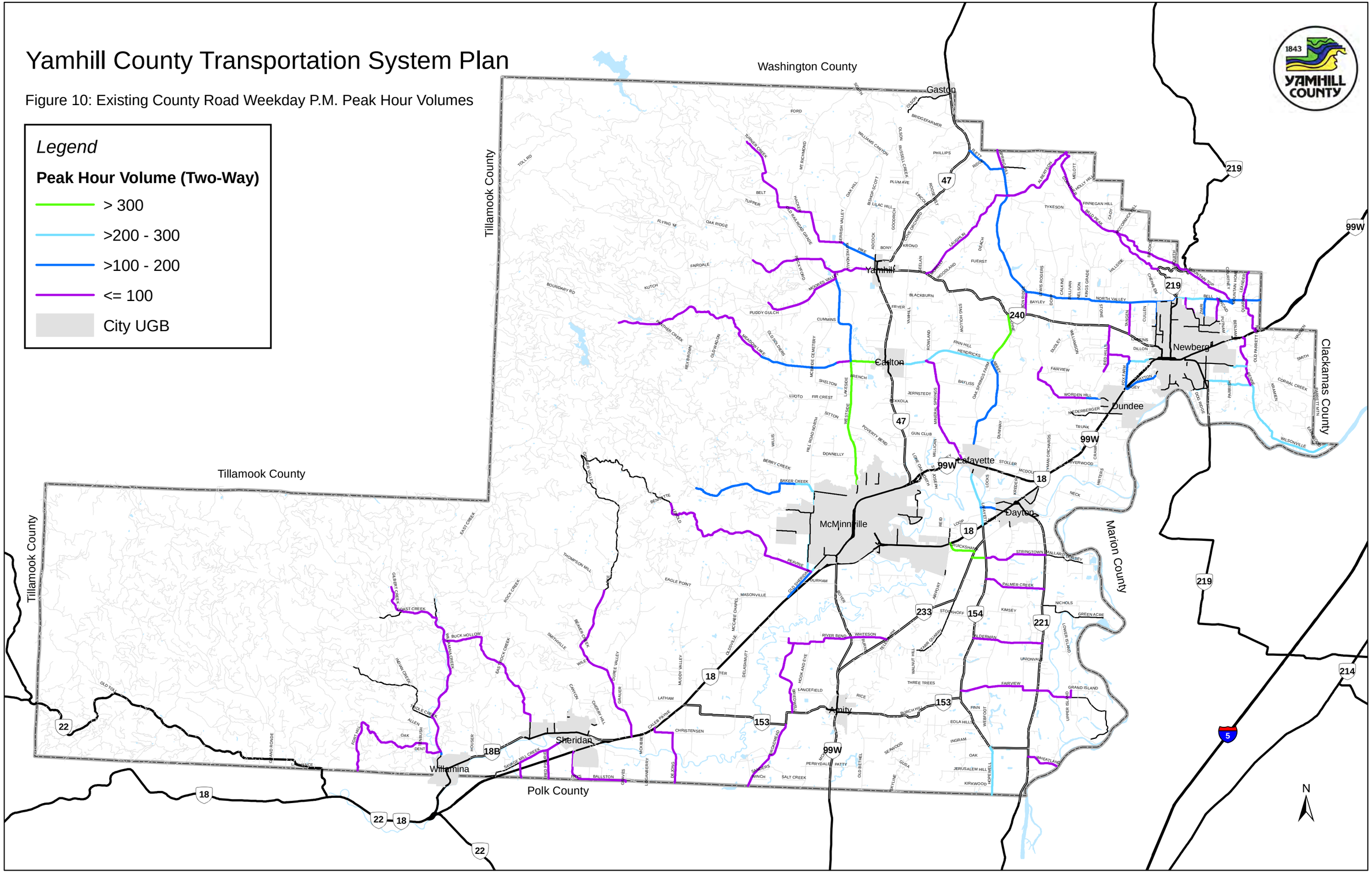
Yamhill County Transportation System Plan

Figure 10: Existing County Road Weekday P.M. Peak Hour Volumes

Legend

Peak Hour Volume (Two-Way)

- > 300
- >200 - 300
- >100 - 200
- <= 100
- City UGB



Intersection turning movement counts were conducted at 25 locations within the study area along both state highways and county roadways. An examination of the count data showed that the system peak for state highway intersections occurs between 4:30 and 5:30 P.M. and the system peak for county intersections occurs between 4:00 and 5:00 P.M. Therefore, the counts for these periods were used in the development of intersection analysis volumes.

Seasonal adjustment factors were applied to all of the state highway intersection counts to reflect the 30th highest hour. The "ATR Trend Summary Method" described in the APM was used to determine the factors. The counts for the county intersections were not seasonally adjusted, but represent an average weekday peak hour condition.

Mobility Standards

Existing mobility needs were identified by comparing volume-to-capacity (v/c) ratio estimates for roadway segments and intersections to the appropriate v/c ratio standards. The applicable standards for state highways are shown in Table 3. The standards reflect the revisions to the Oregon Highway Plan (OHP) Policy 1F[4] that went into effect in January, 2012.

Table 3 – State Highway Mobility Standards (Volume-to-Capacity Ratio)

Area/Highway Category	Segments/Signalized Intersections	Unsignalized Intersections*
Outside Urban Growth Boundary/Rural Lands		
Statewide Expressways (OR 99W, OR 18)	0.70	0.75
Regional (OR 22, OR 47, OR 99W, OR 154)	0.70	0.75
District (OR 18B, OR 153[5], OR 219, OR 221, OR 233, OR 240)	0.75	0.75

Source: Table 6 of the OHP Policy 1F Revisions – Adopted by the Oregon Transportation Commission: December 21, 2011.
* For unsignalized intersections, the v/c ratio shown is for the controlled approaches.

For county roadways, a v/c ratio standard of 0.75 was applied for both roadway segments and intersections.[6]

[4] Oregon Department of Transportation, OHP Policy 1F Revisions, (2011).
[5] The portion of OR 153 south of OR 154 is a regional route, for which the associated mobility standards were used.

Segment Mobility

For capacity analysis purposes, roadway segment endpoints for both state highways and county roads were defined by intersections with minor collector roads or higher. A segment capacity analysis was conducted for all state highways and for county roads classified as major collector or higher.[7]

Segment v/c ratio estimates were developed using the DHV estimates for state highways and the average weekday peak hour volume estimates for county roads. The analysis was performed according to the methodologies for two-lane rural highways outlined in the 2000 Highway Capacity Manual (HCM2000)[8] and the APM.

Figure 11 shows the estimated v/c ratios for state highways and county roads within the study area. The existing mobility for state highway segments is summarized in Table 4.

Figure 12 shows the segments not meeting the mobility standards. The only segments with v/c ratios exceeding the standards are along OR 99W between Newberg and Dundee and between Dundee and OR 18. All county roadways currently operate well within the mobility standard.

Intersection Mobility

A list of intersection locations with suspected level of service problems was developed based on discussions with county staff, as well as a review of daily intersection volumes. All intersections of state highways were also included.

Intersection v/c ratio estimates were developed using the HCM2000 methodology for unsignalized intersections. This methodology reports the v/c ratio for the worst movement at an intersection, which is usually the minor road left-turn for two-way stop intersections. This v/c ratio is evaluated against the applicable mobility standard to determine if a mobility need exists. Typically, the v/c ratio for turning traffic on the mainline is low.

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[6] Based on discussions with county staff, it was decided that the state highway mobility standards should be used for county roadways. In this regard, it was assumed that county roadways are most similar to ODOT's district level highways.
[7] The analysis was not performed for roadways below this classification because it was assumed that the low volumes for these roadways would not result in mobility needs.
[8] Transportation Research Board, Highway Capacity Manual, Special Report 209, (2000).

Yamhill County Transportation System Plan

Figure 11: Existing V/C Ratios

Legend

Intersections	Segments
<= 0.70	<= 0.70
> 0.70 - 0.80	> 0.70 - 0.80
> 0.80 - 0.90	> 0.80-0.90
> 0.90 - 1.0	> 0.90-1.0
>1.0	> 1.0
City UGB	

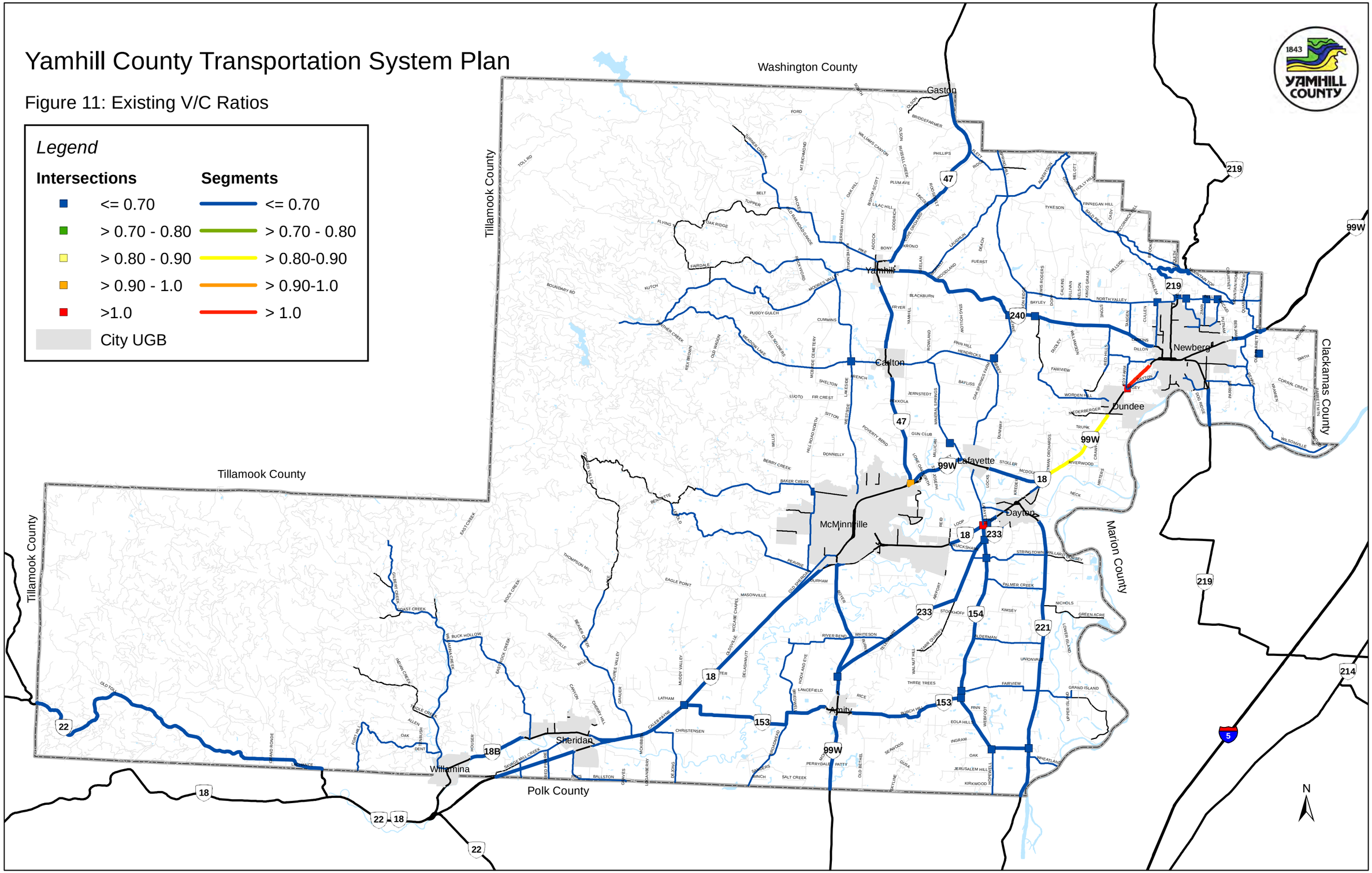

Table 4 – Existing Mobility Summary - State Highway Segments

State Highway	V/C Standard	Total Miles	% Deficient
OR 18	0.70	16.2	0%
OR 18B	0.75	3.0	0%
OR 22	0.70	12.9	0%
OR 47	0.70	14.3	0%
OR 99W	0.70	17.7	27%
OR 153 (west of OR 154)	0.75	9.9	0%
OR 153 (south of OR 154)	0.70	3.4	0%
OR 154	0.70	6.3	0%
OR 219	0.75	4.5	0%
OR 221 (north of OR 153)	0.75	8.2	0%
OR 221 (south of OR 153)	0.70	1.7	0%
OR 233	0.75	8.2	0%
OR 240	0.75	10.4	0%
Total		116.7	4%

The results of the intersection capacity analysis are shown in Table 5 and Figure 11. All of the intersections currently operate within the mobility standards, with the exception of OR 18/Lafayette Hwy., OR 47/OR 99W and OR 99W/Fox Farm Rd. The v/c ratios for the mainline turning movements for these intersections meet their respective mobility standard, however.

Reported Mobility Needs

There were multiple comments from stakeholders, agency staff and the RIAC members about the general need for additional capacity along the OR 99W/OR 18 corridor, the need for alternate routes to OR 99W, and the need for more routes connecting communities (see Figure 13 and Table A-1 in Appendix A). Overall mobility within the county was not a significant concern, however.

Yamhill County Transportation System Plan

Figure 12: Existing Mobility Needs

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- Intersection mobility need
- Segment mobility need
- City UGB

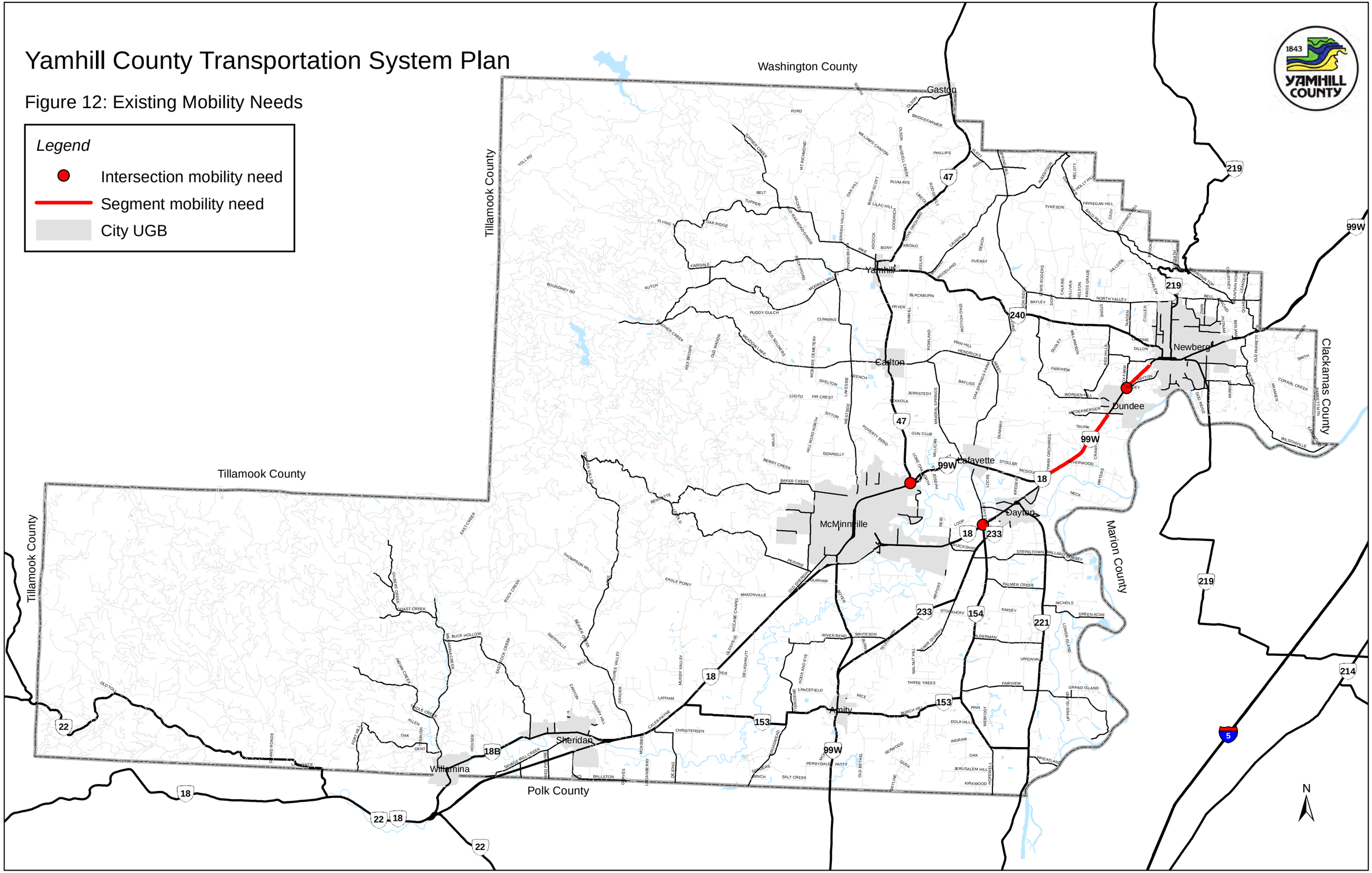


Table 5 – Existing Mobility Summary - Intersections

Intersection	Mobility Standard (Major/Minor V/C Ratio)	V/C Ratio* (Major)	V/C Ratio* (Minor)
NW Hill Rd./SW 2nd St.	0.75/0.75	0.28	0.04
NW Hill Rd./NW Baker Creek Rd.	0.75/0.75	0.26	0.11
NW Westside Rd./NW Meadow Lake Rd.	0.75/0.75	0.32	0.26
NE Abbey Rd./NE Hendricks Rd.	0.75/0.75	0.23	0.11
OR 240/NE Kuehne Rd.	0.75/0.75	0.28	0.14
OR 219/NE Bell Rd.	0.75/0.75	0.34	0.02
N. Aspen Way/NE Bell Rd.	0.75/0.75	0.05	0.02
OR 18/OR 99W/McDougall Rd.	0.70/0.75	0.66	0.47
OR 18/SE Ash Rd.	0.70/0.75	0.00	0.31
OR 18/SE Lafayette Hwy.	0.70/0.70	0.43	**>1.0**
OR 154/OR 233	0.70/0.75	0.21	0.14
OR 154/Stringtown Rd.	0.70/0.75	0.14	0.25
OR 153/Hopewell Rd	0.70/0.75	0.00	0.23
OR 154/SE Fairview Rd.	0.70/0.75	0.01	0.01
OR 240/Worden Hill Rd.	0.75/0.75	0.00	0.01
Zimri Rd./Bell Rd.	0.75/0.75	0.05	0.08
Springbrook Rd./Bell Rd.	0.75/0.75	0.03	0.03
Parrett Mountain Rd./Schaad Rd.	0.75/0.75	0.01	0.00
Gun Club Rd./Mineral Springs Rd.	0.75/0.75	0.04	0.01
Chehalem Dr./North Valley Rd.	0.75/0.75	0.09	0.01
OR 18/OR 153	0.70/0.75	0.37	0.04
OR 99W/OR 233	0.70/0.75	0.28	0.25
OR 47/OR 99W	0.70/0.70	0.33	**0.94**
OR 154/OR 153	0.70/0.70	0.17	0.09
OR 221/OR 153	0.75/0.75	0.06	0.11
OR 99W/Fox Farm Rd.	0.70/0.75	0.68	**>1.0**

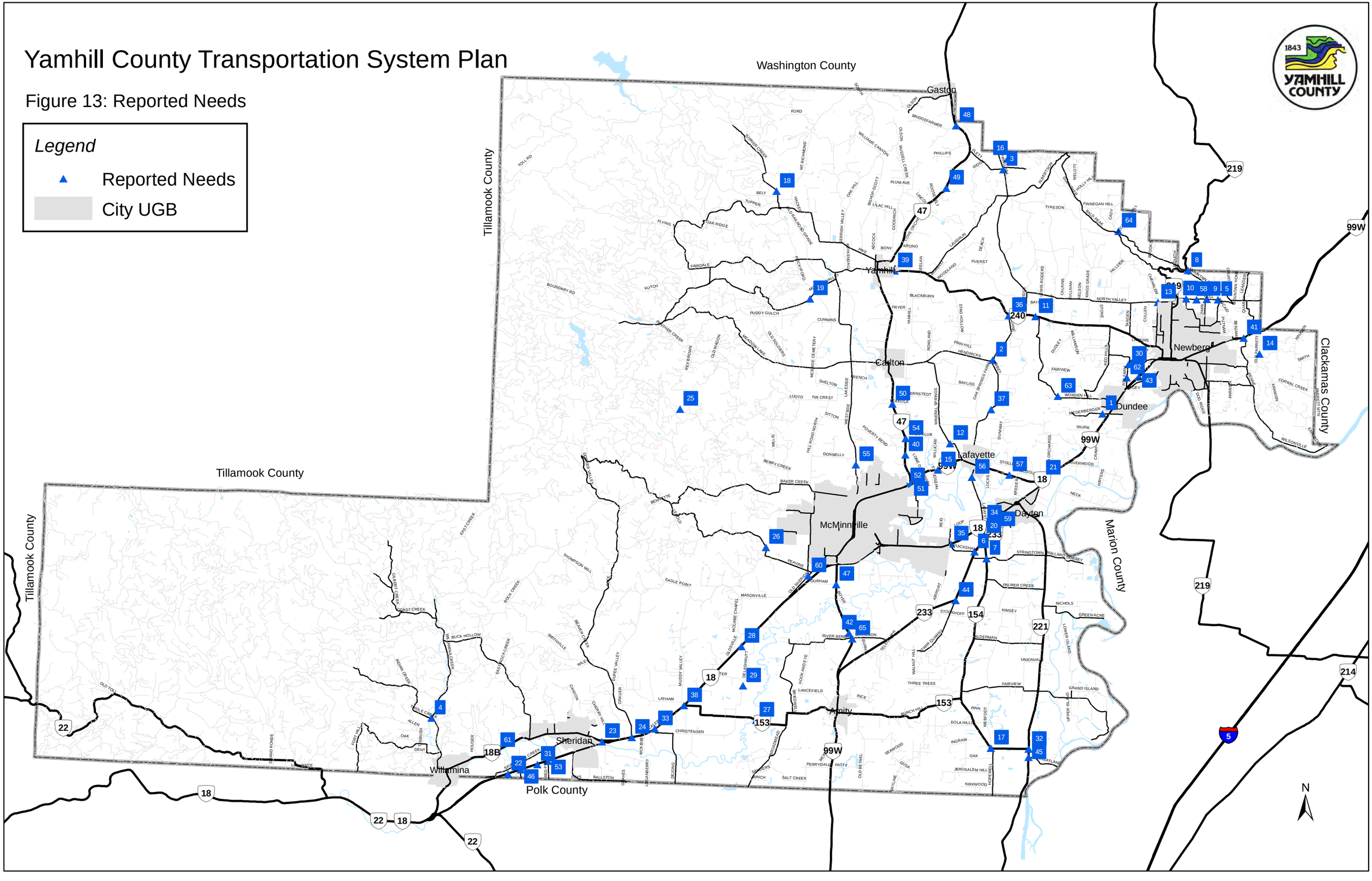
* V/C ratio for worst movement is reported. Bold/shaded cells indicate intersections not meeting mobility standard.

Yamhill County Transportation System Plan

Figure 13: Reported Needs

Legend

- Reported Needs
- City UGB



Traffic Operations Needs

Intersections

Traffic operations needs were identified for unsignalized intersections where left-turn or right-turn lanes may be needed. Left-turn lanes reduce the possibility of rear-end collisions and improve traffic flow by preventing left-turning vehicles from blocking the flow of through traffic. Right-turn lanes reduce the delay of through vehicles behind right-turning traffic and ease right-turns for drivers by providing a refuge from the higher-speed through traffic stream.

Turn lane needs were determined using the turn lane criteria contained in the APM.[9] The volume criterion for left-turn lanes is based on the hourly opposing volume per lane and advancing volume per lane, hourly turning volume, and posted speed limit at an intersection. As the opposing plus advancing volume and/or turning volume increases, or as the speed limit increases, the volume threshold at which a turn lane should be considered decreases. The volume criterion for right-turn lanes is based on the hourly approaching volume in the outside lane (through plus right-turn volume), hourly turning volume, and speed limit. As any of these factors increases, the volume threshold for a right-turn lane decreases.

Table 6 shows the intersections where left-turn lane needs were found. The existing left-turn volume is listed along with the threshold for which a left-turn lane would be warranted based on the existing advancing/opposing traffic volumes. Table 7 shows similar data for intersections where right-turn lane needs were found.

Table 8 summarizes intersections where either a left-turn lane or a right-turn lane is warranted based on existing volumes and posted speeds. The results of the analysis are shown in Figure 14. A majority of the turn lane needs are on state highways.

[9] Oregon Department of Transportation, Analysis Procedures Manual, (2011).

Table 6 – Existing Left-Turn Lane Needs

Roadway	Intersection	Direction	Left-Turn Volume	Left-Turn Volume Threshold
State Highways				
OR 240	Kuehne Rd.	WB	396	12
OR 154	Stringtown Rd.	NB	162	23
OR 99W	OR 47	EB	238	10
OR 154	OR 153	NB	32	16
OR 221	OR 153	NB	82	26
OR 99W	Fox Farm Rd.	NB	135	38
County Roadways				
Hill Rd.	2nd St.	SB	55	26
Baker Creek Rd.	Hill Rd.	WB	151	22
Abbey Rd.	Hendricks Rd.	SB	211	18

Table 7 – Existing Right-Turn Lane Needs

Roadway	Intersection	Direction	Right-Turn Volume	Right-Turn Volume Threshold
State Highways				
OR 18	Ash Rd.	EB	52	0
OR 153	Hopewell Rd.	EB	162	82
OR 99W	OR 47	WB	36	30
OR 99W	Fox Farm Rd.	SB	230	80
OR 99W	Fox Farm Rd.	EB	55	0

Table 8 – Existing Turn Lane Need Summary

Intersection	Northbound		Southbound		Eastbound		Westbound	
	LT	RT	LT	RT	LT	RT	LT	RT
State Highways								
OR 240/Kuehne Rd.							√	
OR 18/Ash Rd.						√		
OR 154/Stringtown Rd.	√							
OR 153/Hopewell Rd.						√		
OR 99W/OR 47					√			√
OR 154/OR 153	√							
OR 221/OR 153	√							
OR 99W/Fox Farm Rd.	√			√		√		
County Roadways								
Hendricks Rd./Kuehne Rd.			√					
Hill Rd./2nd St.			√					
Baker Creek Rd./Hill Rd.							√	

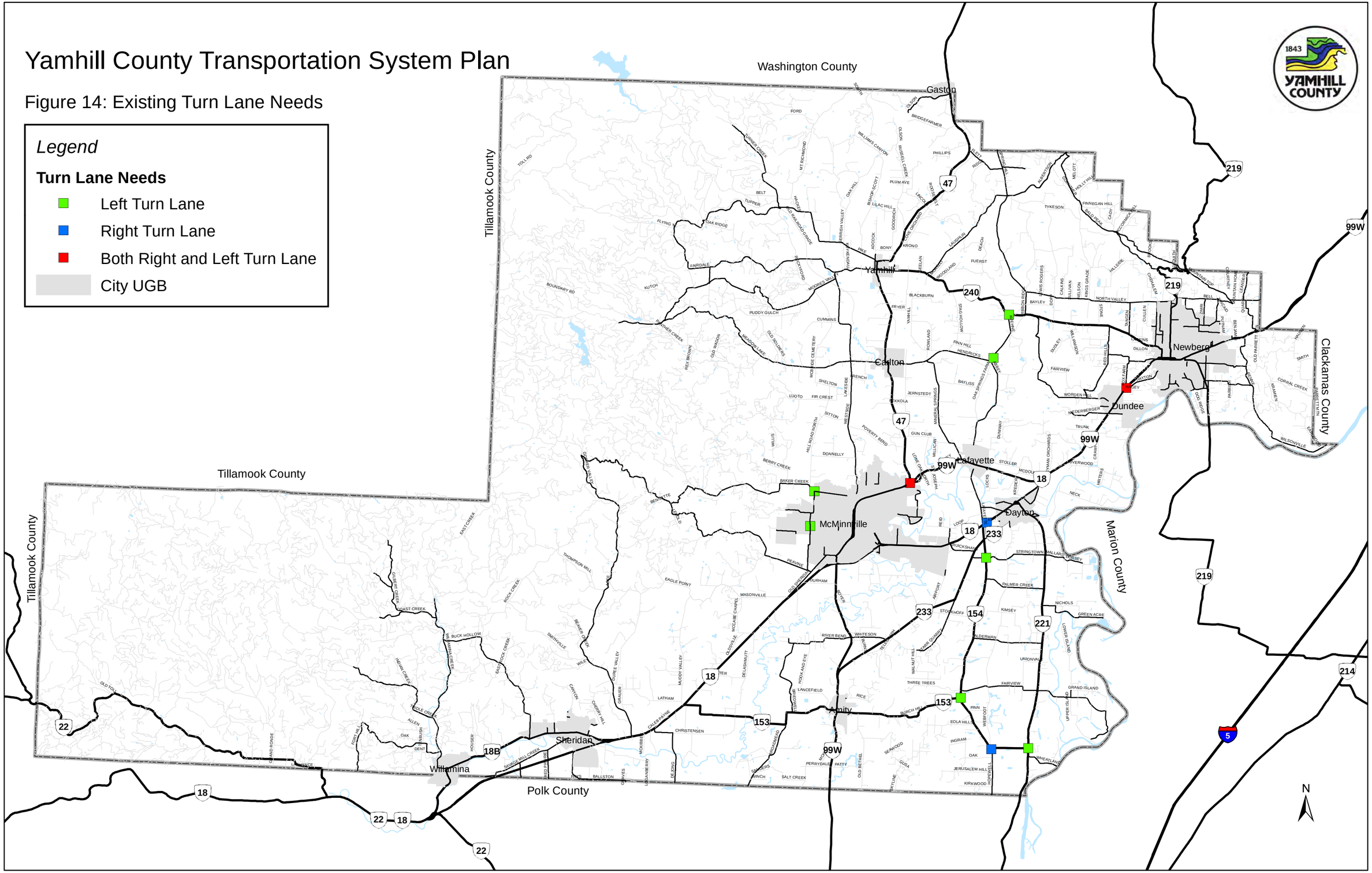
Yamhill County Transportation System Plan

Figure 14: Existing Turn Lane Needs

Legend

Turn Lane Needs

- Left Turn Lane
- Right Turn Lane
- Both Right and Left Turn Lane
- City UGB



Reported Traffic Operations Needs

Numerous traffic operations needs were reported by stakeholders, agency staff, and the RIAC members (see Figure 13 and Table A-1 in Appendix A). Many of the comments were related to problems with turning vehicles and the need for two-way center lanes and turn lanes at intersections, particularly along OR 18. Other specific concerns noted were:

- Difficulty in turning onto and crossing OR 18 from side roads.
- Lack of pull-outs for buses countywide.
- Lack of designated stop areas for buses countywide.
- Lack of alternate routes for OR 99W.
- Driver confusion at the OR 99W/OR 18/McDougall Rd. intersection due to the atypical intersection geometry.
- Need for a traffic signal along OR 18 in the Sheridan/Willamina area.
- Need for a traffic signal in Dundee to facilitate crossing/turning traffic.
- Need for a turn lane at OR 18/Christensen Rd.[10]
- Driver confusion at a number of intersections caused by lane geometry that allows free-flow turning movements (e.g., the north-to-west and east-to-south movements at OR 154/Stringtown Rd.).
- Driver confusion at OR 18/Cruickshank Rd. due to the atypical intersection geometry.
- Difficulty in accessing OR 99W from Old Parrett Mountain Rd., Corral Creek Rd., and Quarry Rd. due to high speeds and high traffic volumes on OR 99W.
- High crossing volumes at OR 18/Harmony Rd.
- Need for a turn lane at OR 47/Goodin Creek Rd.
- Driver confusion at OR 47/OR 99W.
- Difficulty of drivers turning back to see on-coming traffic at several intersections with separated right-turn lanes.

Safety Needs

The safety needs analysis included the calculation of crash rates for intersections and road segments along all roads with a functional classification of minor collector or higher. ODOT's Safety Priority Index System (SPIS) locations were also included in the analysis. The crash rates,

[10] A project to add a westbound left-turn lane is underway.

SPIS locations, and input from the RIAC, stakeholders, and county staff were then considered to identify seven locations for further investigation.

Crash Rates

Crash data for the most recent five year period (2006 – 2010) were obtained from ODOT[11] for the calculation of crash rates for county roads and state highways. Roadway segment and intersection crash rates were calculated separately using the same data set. The crash rates are not additive, since the crashes included in the intersection crash rates are also reflected in the segment crash rates. Thus, all of the crashes were included in the segment rates, while only a subset of the crashes were included in the intersection rates.

Segment crash rates were calculated as the number of crashes per million vehicle miles traveled (MVMT), based on the number of crashes and the AADT volume. Statewide average crash rates were used as the standard of comparison for both the county road and state highway segments.[12] The statewide average crash rates for the 2006 to 2010 period were averaged and are shown in Table 9 below.

Table 9 – Statewide Average Crash Rates - 2006 to 2010

Functional Classification	Statewide Average Crash Rate
Other Principal Arterials	0.672
Minor Arterials	0.960
Rural Major Collectors	1.166
Rural Minor Collectors	0.748

Figure 15 shows the crash rates for county road and state highway segments as a percentage of the applicable statewide average. The analysis shows that there are multiple county roadway and state highway segments with crash rates of 200% or more of the statewide average for similar facilities.

[11] Oregon Department of Transportation, Crash Data System website, https://keiko36.odot.state.or.us/whalecome5690917adb26326abdb252e22d8/whalecom0/SecureKeiko36PortalHomePage/, accessed April 3, 2012.
[12] Oregon Department of Transportation, 2010 State Highway Crash Rate Tables, (2010).

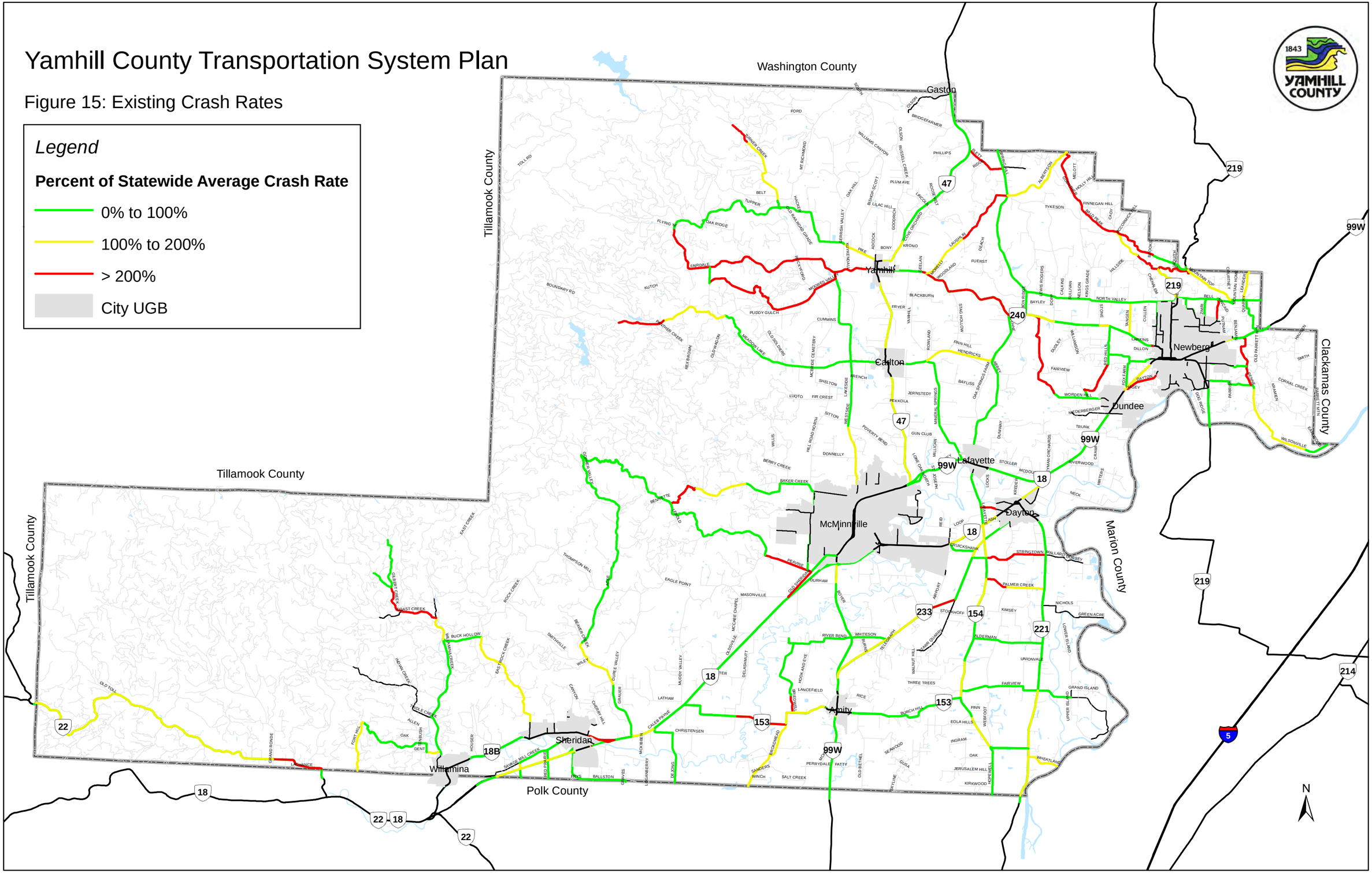
Yamhill County Transportation System Plan

Figure 15: Existing Crash Rates

Legend

Percent of Statewide Average Crash Rate

- 0% to 100%
- 100% to 200%
- > 200%
- City UGB



Intersection crash rates were calculated as the number of crashes per million entering vehicles (MEV), based on the number of crashes and the annual average total entering volume. ODOT does not have an intersection crash rate standard. Instead, the APM includes a rule-of-thumb for identifying potential problem locations of greater than 1.0 crashes per MEV.[13] This guideline was applied to the 16 intersections for which crash rates were calculated.[14] Only the intersection of OR 18/Cruickshank Rd., with a crash rate of 1.31 crashes per MEV, exceeded this rate and was flagged for further investigation. Both of the county road intersections included in the analysis had crash rates of less than 1.0 crashes per MEV.

ODOT Safety Priority Index System

ODOT maintains the SPIS for the identification and analysis of locations on the state highway system with potential safety needs. Each year, the system is used to produce a list of sites within each ODOT Region that are ranked within the top 5th or top 10th percentiles of all SPIS locations statewide. The SPIS score is based on three years of crash data and reflects crash frequency, crash rate, and crash severity. A roadway location is defined as a SPIS site if there have been three or more crashes or at least one fatal crash over the three-year period. SPIS sites are defined as 0.10 mile sections on the state highway system.

The SPIS sites within the study area in the top 5th and top 10th percentiles for the 2008-2010 time period are listed in Table 10 and shown in Figure 16.

As would be expected, a majority of the SPIS sites are at intersections. OR 18 and OR 99W have the largest number of sites. There are two areas along these highways with closely-spaced SPIS sites. The first is along OR 99W between the westbound lane drop and the Dundee city limits (Locations 11 and 12) and the second is on OR 18 between Lafayette Hwy. and Ash Rd. (Locations 2 and 3). Three of these SPIS sites are discussed in more detail in the following section.

[13] Oregon Department of Transportation, Analysis Procedures Manual, (2011).
[14] Crash rates were calculated for 16 intersections only because these were the only locations with traffic count data available.

Table 10 – Top 5th and Top 10th Percentile SPIS Sites - 2008 to 2010

Location No.	Highway	Beginning M.P.	Ending M.P.	Location	SPIS Percentile Ranking
1	OR 18	31.57	31.75	Red Prairie Rd.	5
2	OR 18	49.82	50.00	OR 154/Lafayette Hwy.	5
3	OR 18	50.01	50.19	Ash Rd.	5
4	OR 22	16.91	17.09	E/O USFS Road	10
5	OR 22	21.92	22.10	Grande Ronde Rd.	10
6	OR 221	9.17	9.29	OR 153	10
7	OR 233	5.00	5.16	Starr Quarry Rd.	10
8	OR 240	2.31	2.45	Woodland Loop	10
9	OR 47	42.34	42.46	OR 99W	5
10	OR 99W	19.91	20.09	Parrett Mtn. Rd.	10
11	OR 99W	24.91	25.09	WB Lane Drop	10
12	OR 99W	25.44	25.62	Dundee W.C.L.	5
13	OR 99W	39.91	40.02	Durham Ln.	5

Safety Investigation

Based on the crash rates, SPIS data, and input received from the stakeholders, RIAC, and county staff, the following seven locations were selected for further investigation:

- Abbey Rd./Hendricks Rd. intersection
- Stringtown Rd. between OR 154 and OR 221
- Worden Hill Rd. from OR 240 to the end of pavement
- OR 99W/OR 18/McDougall Rd. intersection
- OR 18 between OR 154/Lafayette Hwy. and Ash Rd.
- OR 18/SW Red Prairie Rd. intersection
- OR 99W/OR 47 intersection

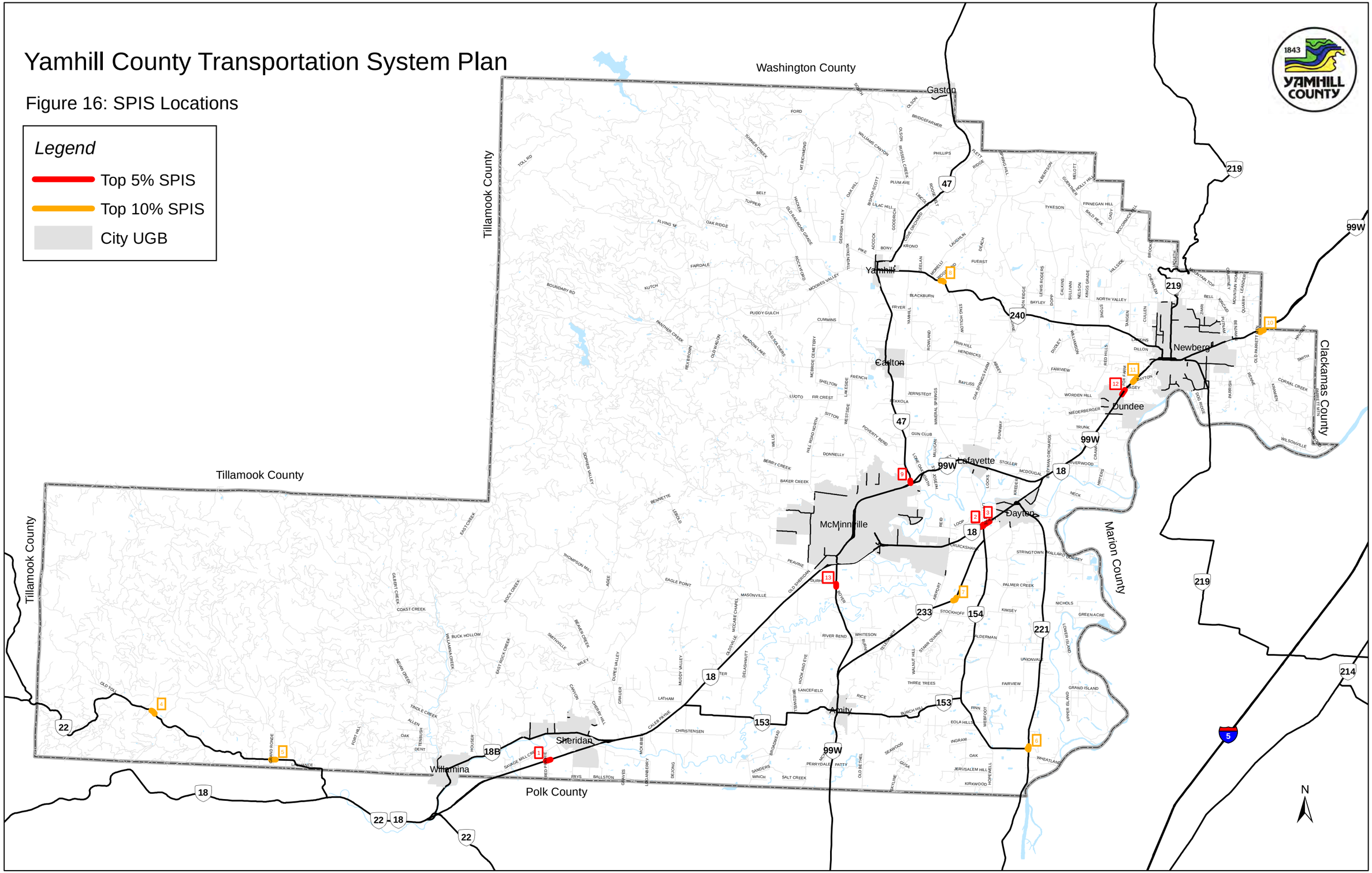
These locations are shown in Figure 17.

Yamhill County Transportation System Plan

Figure 16: SPIS Locations

Legend

- Top 5% SPIS
- Top 10% SPIS
- City UGB

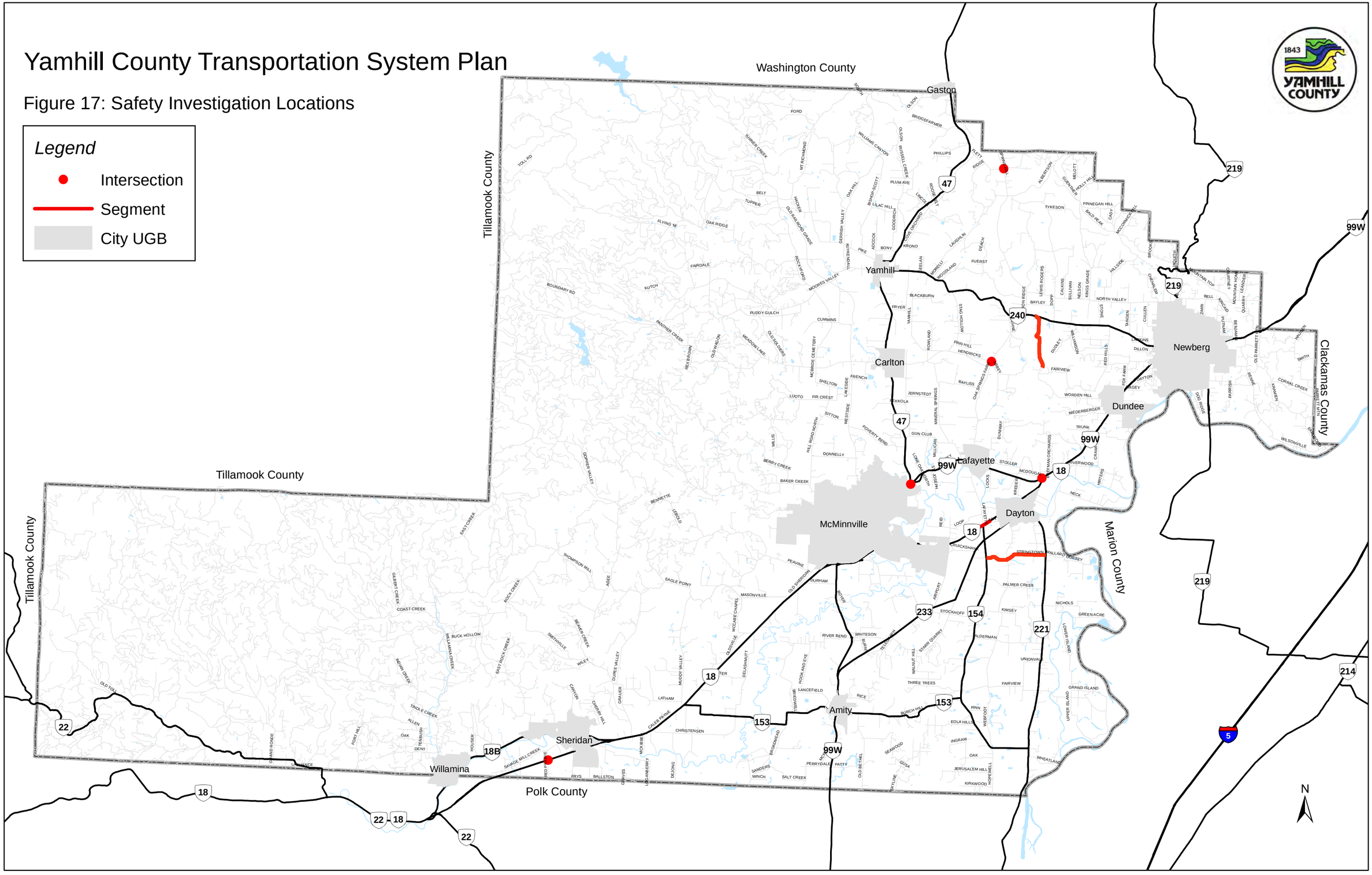


Yamhill County Transportation System Plan

Figure 17: Safety Investigation Locations

Legend

- Intersection
- Segment
- City UGB



Abbey Rd./Hendricks Rd. Intersection

The Abbey Rd./Hendricks Rd. intersection was identified by the RIAC, stakeholders, and county road maintenance staff as a safety problem location. A total of five crashes occurred at this intersection between 2006 and 2010, resulting in crash rate of 0.58 crashes per MEV.

One of the crashes involved a through vehicle on eastbound Hendricks Rd. and a vehicle turning left from the Abbey Rd.-to-Hendricks Rd. connector onto westbound Hendricks Rd. The cause of this crash was cited as the failure to yield by the turning vehicle.

Two other crashes were fixed object crashes involving eastbound/northbound vehicles on Hendricks Rd. near the Abbey Rd./Kuehne Rd. intersection. In both cases, the vehicle left the roadway and ended up in the ditch. This location is on a curve following a long straight section to the west along Hendricks Rd. The cause cited for both crashes was excessive speed, which may indicate that the drivers did not adjust their speed for the curve from the straight section. In one of these crashes, foggy weather and an icy road surface may also have been contributing factors.

The remaining crashes were rear-end crashes involving southbound/westbound vehicles on Kuehne Rd. approaching the Hendricks Rd./Abbey Rd./Kuehne Rd. intersection. The crash cause in both cases was "following too close". In these crashes, the impacted vehicles may have been stopped on southbound Kuehne Rd., waiting for a gap in the eastbound/northbound traffic on Hendricks Rd. to access Abbey Rd.

All of the crashes at this intersection appear to be related to driver error.

Stringtown Rd. Between OR 154 and OR 221

Five crashes occurred along this section of Stringtown Rd. over the five-year period. The crash rate of 8.55 crashes per MVMT is nearly 8.5 times the average rate for similar roadways in Oregon. Part of the reason for the higher crash rate is that Stringtown Rd. is a relatively low-volume road, which amplifies the effect of crash frequency on the crash rate. This section was identified by the RIAC, county maintenance staff, and stakeholders as a safety problem location.

A review of the crash history did not indicate a strong pattern of the crashes. One of the crashes was a rear-end collision at the intersection of OR 154/Stringtown Rd., in which the

driver was following too close. The other four crashes were fixed-object collisions. Three of these occurred on curves and the other on a straight section. In one of the crashes, the fixed-object was a piece of equipment on or near the roadway, and another involved a collision with a deer or elk. Excessive speed was cited as a contributing cause in all of the fixed-object crashes.

Worden Hill Rd. from OR 240 to End of Pavement

Four crashes were recorded on this section of Worden Hill Rd. between 2006 and 2010. It was identified as a safety problem location by the RIAC and county maintenance staff. The crash rate of 11.94 crashes per MVMT is nearly 11 times the statewide average. The relatively low volume on this road contributes to the high crash rate.

This two-mile section of roadway is gravel. It is characterized by narrow width, horizontal and vertical curves, no shoulders, little or no clear zone, and obstructions such as trees, utility poles, and embankments along the roadside. All of the crashes occurred at locations where there is a combination of horizontal and vertical curves. One of the crashes was a head-on collision, while the others involved vehicles either overturning or leaving the roadway and striking fixed objects. These crash types suggest that the roadway characteristics may limit the driver's ability to anticipate upcoming roadway features and traffic, as well as the likelihood of recovery. The gravel roadway surface does not appear to be a factor, since the surface condition was dry in the all of the crashes.

OR 99W/OR 18/McDougall Rd. Intersection

The OR 99W/OR 18/McDougall Rd. intersection was identified by stakeholders and county maintenance staff as a safety problem location. There were seven crashes at this location over the 2006 – 2010 period, resulting in a crash rate of 0.20 crashes per MEV.

Four of the crashes were turning or angle crashes at the intersection. Three of these crashes involved southbound vehicles on McDougall Rd. attempting to cross or turn left onto OR 99W, in which the driver passed the stop sign and flashing beacon or failed to yield. This indicates that the drivers did not properly recognize the upcoming intersection or cross traffic on OR 99W. The fourth crash occurred between an eastbound through vehicle and a westbound vehicle turning left onto OR 18 that failed to yield. The fifth crash at the intersection was a rear-end collision in the westbound left-turn lane that happened during snowy conditions.

The other two crashes occurred just to the east of the intersection. The first crash was a fixed-object crash that appeared to be unrelated to the intersection. The second crash was at the merge point between eastbound OR 99W and the connector from OR 18 in which the vehicle on OR 18 failed to yield.

OR 18 between OR 154/Lafayette Hwy. and Ash Rd.

This section of OR 18 is identified as a top 5th percentile SPIS site. Over the 2006 – 2010 period, 30 crashes occurred within this segment. All of these were at or near the OR 18/OR 154/Lafayette Hwy. and OR 18/Ash Rd. intersections.

At the OR 18/OR 154/Lafayette Hwy. intersection, 12 of the 20 crashes were angle crashes involving vehicles on OR 154/Lafayette Hwy. attempting to cross OR 18. In all cases, the cause was failure to yield or passing the stop sign and flashing beacon. One of the crashes resulted in a fatality. Three other crashes were turning crashes in which the driver failed to yield to the cross traffic on OR 18. These crash types indicate that the drivers may have been unaware of the intersection or cross traffic. Another cause could be that the gap in the traffic stream was too small, which may be related to the high traffic volumes and higher speeds along OR 18. The other five crashes were all rear-end crashes involving stopped vehicles on OR 18. The causes of these crashes were either driver inattention or following too closely.

There was a similar pattern of crashes at the OR 18/Ash Rd. intersection, where there was a total of 10 crashes. Six of the crashes were turning or angle crashes in which the drivers failed to yield or passed the stop signs on the Ash Rd. intersection approaches. One of the crashes resulted in a fatality. There were also two rear-end crashes due to inattention/driver error and two fixed object crashes, one caused by tire failure and the other by excessive speed with icy road conditions.

OR 18/SW Red Prairie Rd. Intersection

This intersection is listed in the top 5th percentile of ODOT's SPIS sites. All ten of the crashes occurring from 2006 to 2010 were angle crashes between vehicles attempting to cross OR 18 from Red Prairie Rd. and through traffic on OR 18. The primary cause was failure to yield, indicating that the drivers may have tried to use gaps that were too short for the crossing maneuver. In one case, the crash cause was passing the stop sign and flashing beacon on the Red Prairie Rd. intersection approach.

OR 99W/OR 47 Intersection

The OR 99W/OR 47 intersection is a top 5th percentile SPIS site, with 29 crashes between 2006 and 2010. Most of the crashes at this location were angle or rear-end collisions. There were 10 angle collisions involving vehicles crossing OR 99W from/to OR 47. In almost all of the crashes, the reported cause was failure to yield. In two cases, the drivers passed the stop signs and flashing beacons on the approaches to the intersection. There was also a large proportion of rear-end crashes (13). Nine of these occurred on southbound Hwy. 47, which approaches OR 99W at an angle. Two others were located on the west connection between the westbound and eastbound roadways of OR 99W. The remaining two rear-end crashes were on the westbound approach of OR 99W to OR 47, which may have involved vehicles slowing to turn onto Hwy. 47.

Four other crashes occurred between vehicles turning onto westbound OR 99W from either southbound Hwy. 47 or the east connection between the westbound and eastbound roadways of OR 99W. The reported cause in two of these crashes was improper overtaking. Passing a stop sign and excessive speed were cited as the causes in the other two crashes.

Two crashes near the intersection appeared to be unrelated to the intersection, one involving a vehicle backing up in the travel lane and the other a fixed-object crash caused by excessive speed.

<u>Reported Safety Needs</u>

The safety needs reported by the stakeholders, agency staff, and RIAC members are shown in Figure 13 and Table A-1 in Appendix A. A number of the locations are also the SPIS sites described above.

Nearly all of the reported problems were related to intersections of state highways and county roads. At several of these intersections, difficulty in accessing the highway because of high volumes and high speeds was cited as a possible cause. This includes the OR 18/OR 154/Lafayette Hwy. intersection, which was the most frequently reported safety need location. At other intersections, driver confusion related to the atypical intersection configuration and the lack of recognition of the approaching intersection were mentioned as possible causes.

Segment safety needs were identified along OR 99W between Newberg and Dundee where the highway narrows from two lanes to one lane in the westbound direction and on the OR 18 South Yamhill River Bridge near McMinnville, which was described as needing replacement.

Geometric Needs

Segment Geometrics

Geometric needs related lane width and shoulder width were identified for roadway segments. The lane and shoulder widths for state highway segments were compared to two sets of standards contained in the ODOT Highway Design Manual (HDM).[15] For OR 18 and the portion of OR 99W to the east of OR 18, the 4-R new rural arterial design standards were used in the comparison. For all other state highways, the 3-R rural non-freeway design standards were used. This approach was based on the assumption that the future improvements for most state highways would likely be resurfacing, restoration, or rehabilitation projects for which the 3R standards would apply. The use of the 3-R standards for the identification of needs, however, does not preclude the possibility that the higher 4-R standards may be followed at the time an improvement project is developed. Both sets of standards reflect the design values contained in the current version of the HDM, which are subject to change.

Because the AADT volumes for OR 18 and OR 99W to the east or OR 18 are well over 2,000, the 4R standards indicate that the lane widths should be at least 12 feet and shoulder widths should be at least 8 feet. The 3-R standards vary based on traffic volume, speed, and the percentage of trucks, and are summarized in Table 11 below.

The existing lane and shoulder widths for state highways are shown in Figures 18 and 19. For all state highways, the applicable shoulder width standard is not met along more than 50% of the highway (see Table 12). The highest-volume highways, OR 99W and OR 18, have significantly lower percentages of deficient shoulder widths, however, than the lower-volume highways. Lane width deficiencies are more unevenly distributed, with some highways having no deficient mileage (OR 18, OR 22, OR 47, OR 99W, OR 219, and OR 240), while the other highways have deficient lane widths over more than 50% of their mileage (OR 18B, OR 153, OR 154, OR 221, and OR 233). OR 154 has deficient lane widths over its entire length.

[15] Oregon Department of Transportation, Highway Design Manual, (2003).

Table 11 – ODOT 3-R Rural Non-Freeway Design Standards
Minimum Lane and Shoulder Widths

Design Year Volume (ADT)	Average Running Speed	Less than 10% Trucks		More than 10% Trucks	
		Lane Width	Shoulder Width	Lane Width	Shoulder Width
< 750 vehicles	< 50 mph	9’	2’	10’	2’
	>= 50 mph	10’	2’	10’	2’
750 – 2,000 vehicles	< 50 mph	10’	2’	11’	2’
	>= 50 mph	11’	3’	12’	3’
2,001 – 4,000 vehicles	All Speeds	11’	4’	12’	4’
> 4,000 vehicles	All Speeds	11’	6’	12’	6’

Table 12 – Existing Lane and Shoulder Width Summary – State Highways

State Highway	Total Miles	Shoulder Width Standard	% Deficient	Lane Width Standard	% Deficient
OR 18	16.17	8’	53%	12’	0%
OR 18B	3.02	6’	89%	12’	59%
OR 22	12.88	3-4’	99%	12’	0%
OR 47	14.29	6’	94%	12’	0%
OR 99W	17.70	6-8’	60%	11-12’	0%
OR 153	13.34	2-6’	94%	10-12’	60%
OR 154	6.26	3-6’	100%	12’	100%
OR 219	4.46	4-6’	78%	11’	0%
OR 221	9.88	3-4’	97%	11-12’	83%
OR 233	8.19	2-6’	98%	11-12’	90%
OR 240	10.44	2-6’	98%	11-12’	0%

For Yamhill County, updated design standards were developed. Three separate sets of standards were developed, the first for new construction and reconstruction projects, the second for maintenance projects, and the third for private roads for public travel. The maintenance project standards for lane and shoulder widths, summarized in Table 13 below, were used for the assessment of geometric needs for county roads.

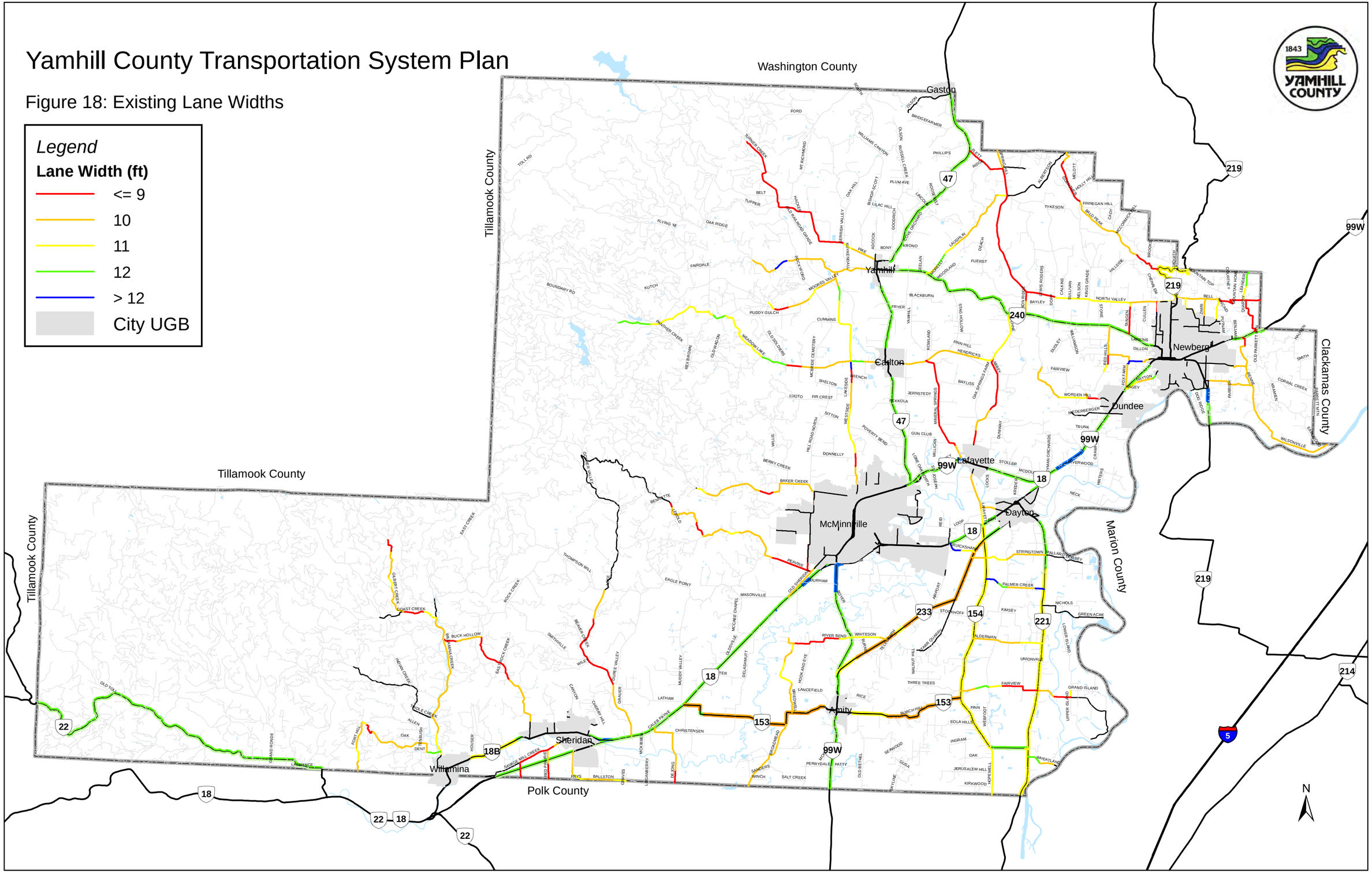
Yamhill County Transportation System Plan

Figure 18: Existing Lane Widths

Legend

Lane Width (ft)

- <= 9
- 10
- 11
- 12
- > 12
- City UGB



Yamhill County Transportation System Plan

Figure 19: Existing Shoulder Widths

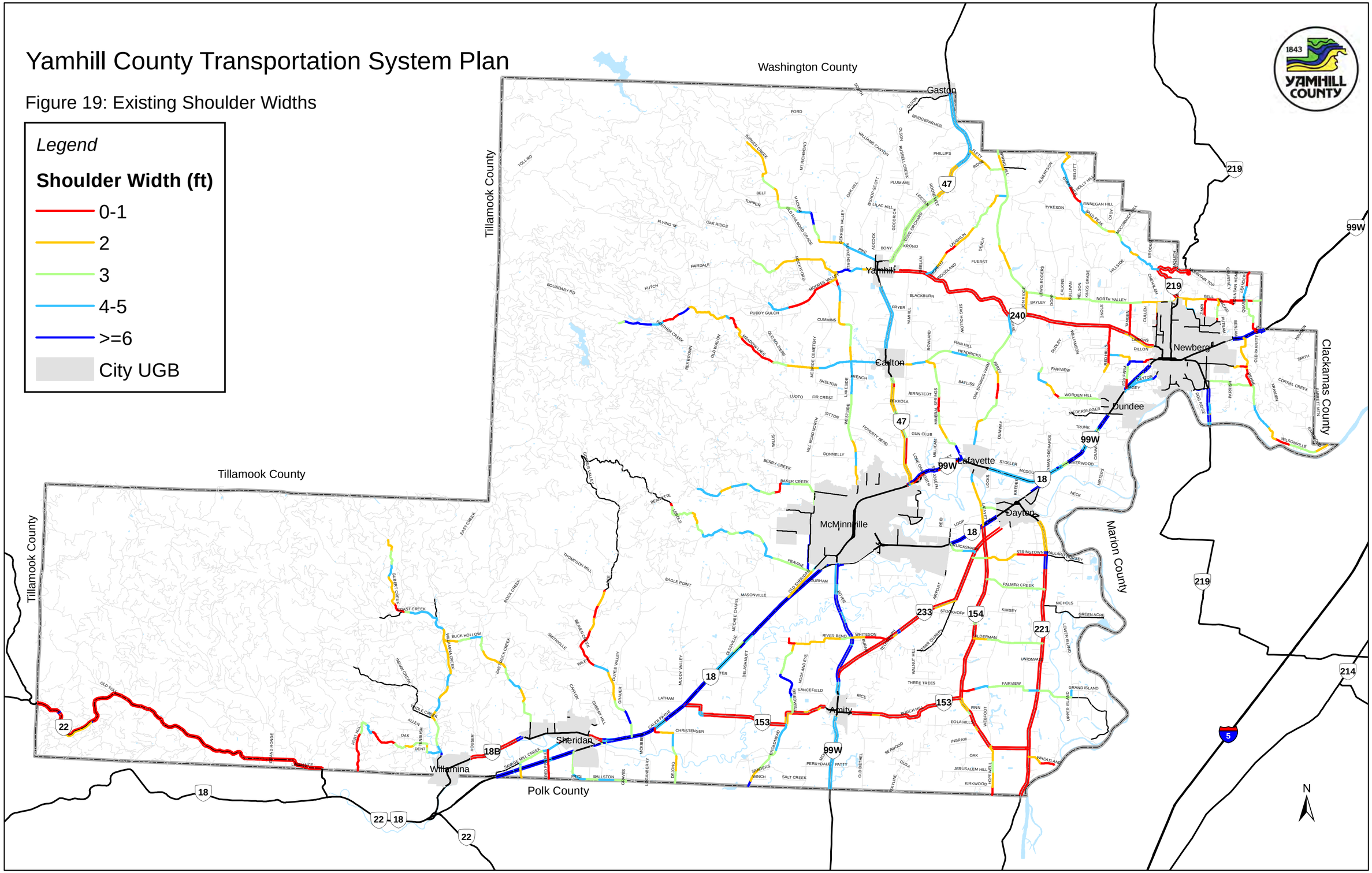


Table 13 – County Maintenance Project Standards
Minimum Lane and Shoulder Widths

Measure	Principal Arterials	Minor Arterials	Major Collectors	Minor Collectors	Resource Roads	Local Roads
Lane Width	12’	11’	11’	11’	10’	10’
Shoulder Width	4’	3’	2’	2’	2’	2’

The existing county roadway lane and shoulder widths are shown in Figures 18 and 19. Comparison to the standards indicated that roughly 75% of the paved roadways classified as minor collector or above do not meet the lane width standards and about 21% do not meet the shoulder width standards.

The existing lane width and shoulder width deficiencies for state highways and county roads are shown in Figure 20.

Intersection Geometrics

For intersections, geometric needs were analyzed for the minor road approaches. This was done for intersections where there was a potential problem identified by the stakeholders, county or ODOT staff, and the RIAC, or through field reconnaissance. Approach width, approach grade, intersection angle, and intersection sight distance were investigated and compared to the American Association of State Highway and Transportation Officials (AASHTO) standards.[16]

Intersection approach widths should be a minimum of 20-24 feet, based on the lane width standard of 10-12 feet for state highways and 11 feet for county roadways (minor collector and above). Adequate approach width is needed to provide spacing between vehicles traveling in opposite directions on the approach and to allow larger vehicles to turn onto/off of the roadway without cutting corners. The following intersections did not meet the standards:

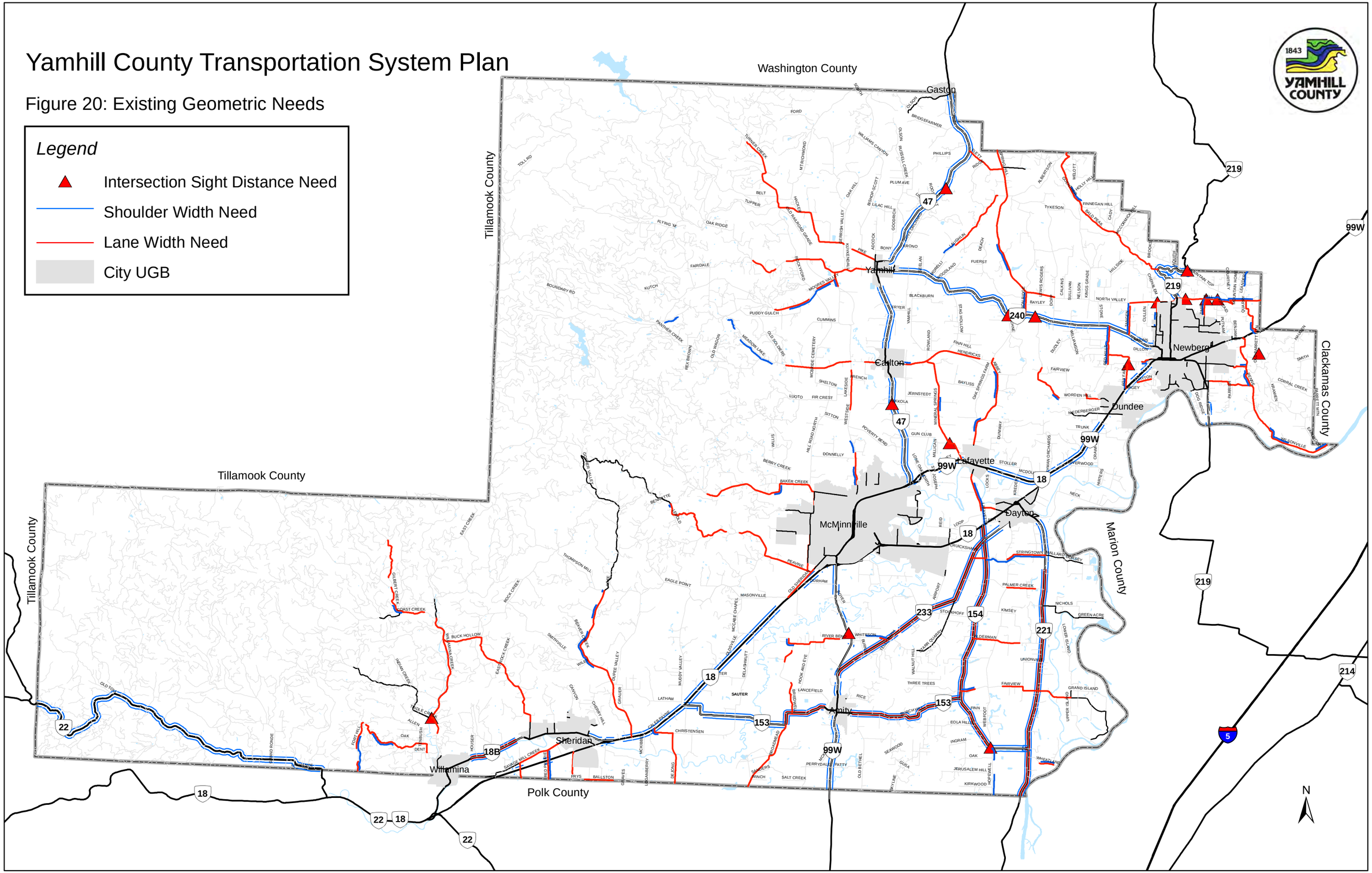
[16] AASHTO, A Policy on the Geometric Design of Highways and Streets, (2004)

Yamhill County Transportation System Plan

Figure 20: Existing Geometric Needs

Legend

- Intersection Sight Distance Need
- Shoulder Width Need
- Lane Width Need
- City UGB



- Schaad Rd. (20 feet) at Parrett Mountain Rd.
- Worden Hill Rd. (18 feet) at OR 240
- Hidden Springs Rd. (17 feet) at Fox Farm Rd.
- North Trade St. (18 feet) at Cherry Rd.

Approach grades should be three percent or lower for all roadways. If the approach is steeper than this, vehicles may have difficulty stopping (on a negative grade) or accelerating from a stop (on a positive grade). The approach grades at the following intersections failed to meet this standard:

- Aspen Way approaching Bell Rd.
- Zimri Dr. approaching Bell Rd.
- Schaad Rd. approaching Parrett Mountain Rd.
- Worden Hill Rd. approaching OR 240
- Mountain Top Rd. approaching OR 219
- Tindle Creek Rd. approaching Willamina Creek Rd.
- Fox Farm Rd. approaching OR 99W

The intersection angle should be no less than 60 degrees.[17] Sharp intersection angles can result in limited sight distance for stopped vehicles on the approach. Tight turns can also occur if the angle is too severe, requiring larger vehicles to use the opposing travel lane. The following intersections have less than a 60 degree angle:

- OR 154/Stringtown Rd. (connector road)
- OR 219/Mountain Top Rd.
- OR 240/Worden Hill Rd.
- OR 153/OR 221 (connector road)
- Kuehne Rd./Hendricks Rd.
- Willamina Creek Rd./Tindle Creek Rd.
- Mineral Springs Rd./Gun Club Rd.
- Schaad Rd./Parrett Mountain Rd.
- OR 18/OR 153/Muddy Valley Rd.
- OR 99W/Fox Farm Rd.

[17] AASHTO, A Policy on the Geometric Design of Highways and Streets, (2004)

Adequate intersection sight distance is required for drivers turning from the minor road to clearly see oncoming traffic, turn into the traffic stream, and safely accelerate. The largest sight distance requirements are for drivers turning left from the minor road. Longer sight distances are required for trucks than cars to account for the slower acceleration rate of trucks.

Intersection sight distances were measured and compared with the standards contained in the HDM.[18] The ODOT standards are based on the recommendations contained in the AASHTO Green Book.[19] They vary depending on vehicle speed and the approach grade of the minor road. The intersections not meeting the standards are listed in Table 14 and shown in Figure 20.

Table 14 – Intersection Sight Distance Deficiencies

Roadway	Intersection Approach	Speed Limit (mph)	Intersection Sight Distance		
			Movement	Standard	Measured Sight Distance
Bell Rd.	Springbrook Rd.	45	NB LT	500’	150’
			NB RT	430’	300’
Bell Rd.	Zimri Rd.	45	NB LT	500’	300’
Bell Rd.	Aspen Way	45	NB LT	500’	200-225’
Fox Farm Rd.	Hidden Springs Rd.	55	EB LT	610’	350’
Mineral Springs Rd.	Gun Club Rd.	55	NB LT	610’	390’
			EB TH	610’	390’
North Valley Rd.	Chehalem Dr.	45	NB LT	500’	325’
			SB LT	500’	350’
OR 153	Hopewell Hwy./ Webfoot Rd.	55	SB LT	610’	385’
			NB LT	610’	575’
OR 219	Mountain Top Rd.	30	WB LT	335’	325’
OR 240	Worden Hill Rd.	55	NB LT	610’	325’
OR 240	Kuehne Rd.	55	NB RT	530’	240’

[18] Oregon Department of Transportation, Highway Design Manual, (2003).
[19] AASHTO, A Policy on the Geometric Design of Highways and Streets, (2004).

Roadway	Intersection Approach	Speed Limit (mph)	Intersection Sight Distance		
			Movement	Standard	Measured Sight Distance
OR 47	Cove Orchard Rd. (north)	55	WB LT	610’	425’
OR 47	Pekkola Rd.	55	WB LT	610’	275’
OR 99W	Cherry Rd.	55	WB LT	610’	200’
Parrett Mountain Rd.	Schaad Rd.	55	EB LT	610’	100’
Willamina Creek Rd.	Tindle Creek Rd.	55	NB LT	610’	275’
			EB RT	610’	275’
OR 99W	Fox Farm Rd.	35	SB LT	390’	--*
		35	SB RT	335’	--*

* To be determined at time of project development.

Reported Geometric Needs

Geometrics was, by a large margin, the most frequently reported type of need. These are shown in Figure 13 and Table A-1 in Appendix A. For intersections, the main problem identified was poor intersection sight distance caused by horizontal or vertical curves and vegetation. Other problems mentioned were skewed intersection alignment and atypical intersection configuration that results in driver confusion.

One of the most frequently mentioned intersections was Hendricks Rd./Abbey Rd./Kuehne Rd., where skewed alignment, driver confusion about the right-of-way, and high-speed turning movements were identified as problems. Another intersection receiving multiple comments was OR 154/Stringtown Rd., where the separated right turn lanes require drivers to turn their heads sharply to see on-coming traffic and cause confusion for drivers who are unfamiliar with the intersection.

Commonly mentioned roadway segment needs were poor horizontal and vertical alignment, such as along Abbey Rd. between Oak Spring Farms Rd. and Millican Creek, and narrow roadways. Two overall needs identified were shoulder widening and roadway widening.

Access Needs

Similar to many state highways which, in addition to serving through traffic, provide access to adjacent property, there are areas along OR 47 and OR 240 with high concentrations of access points. The problems associated with high access density are well understood, including reduced capacity, traffic operations and safety conflicts between slower-moving turning vehicles and higher-speed through-traffic, and degradation of the bicycle and pedestrian environment.

In order to better understand access conditions along these corridors, an inventory of existing approaches was conducted, including public streets and private driveways. The data was assembled using ODOT video log and road inventory data.

The OHP establishes access spacing standards to improve safety and mobility by limiting turning conflicts. These standards, which apply to both driveways and public streets, vary depending on highway classification, traffic volume, posted speed, and the character of surrounding land uses.

The existing access spacing for OR 47 and OR 240 was compared to ODOT's spacing standards to identify areas that do not meet the standards.[20] For the analysis, segments were defined by where roadways classified as minor collector or above intersected the highway or where the access spacing standard changed based on roadway classification, volume, and/or speed.

Table 15 presents the results of the evaluation, showing the number of approaches by segment along each side of the highway and comparing the average approach spacing (total number of approaches divided by segment length) to the applicable standard. Directional segments not meeting the spacing standard are indicated in shaded/bold type and are shown in Figure 21.

While this level of analysis does not identify specific properties where the spacing standards are not met, it does reflect the degree to which the overall spacing is consistent with the standards. The rightmost column of the table indicates the maximum number of approaches that would be allowed according to the standards. This number is exceeded by all but a few of the segments.

[20] Standards reflect the approach spacing requirements contained in SB 264 that went into effect on January 1, 2012.

Table 15 – OR 47 and OR 240 Access Spacing

Analysis Segment	From/To	Milepost	No. of Approaches		Average Approach Spacing			No. of Approaches Allowed
			Eastside*	Westside	Std. (ft.)	Eastside	Westside	
OR 47								
1	County Line – Olson Rd.	25.72 -26.52	0	1	600	0	4,198	6
2	Olson Rd. – n/o Country Ln.	26.52 – 26.67	0	1	750	0	792	1
3	N/O Country Ln. – Flett Rd.	26.67 – 28.78	4	**20**	990	2,693	**539**	10
4	Flett Rd. – Wapato School Rd.	28.78 – 30.00	2	**9**	990	3,247	**722**	6
5	Wapato School Rd. – Graham Ave.	30.00 – 31.36	5	11	650	1,489	677	11
6	Graham Ave – Yamhill City Limit	31.36 – 33.77	12	**19**	990	1,056	**667**	12
7	Yamhill City Limit – n/o Yamhill St. (Carlton)	35.06 – 37.29	9	**26**	990	1,200	**415**	10
8	N/O Yamhill St. – Carlton City Limit	37.29 – 37.37	**3**	0	750	**378**	N/A	1
9	Carlton City Limit – OR 99W	38.53 – 42.46	31	25	650	669	829	31
OR 240								
1	Yamhill City Limit – w/o Yamhill Rd.	0.57 – 1.01	**6**	3	360	**260**	519	4
2	W/O Yamhill Rd. – Kuehne Rd.	1.01 – 5.49	24	24	650	1,010	1,010	37
3	Kuehne Rd. – Ribbon Ridge Rd.	5.49 – 6.09	0	**6**	700	N/A	**506**	4
4	Ribbon Ridge Rd. – Worden Hill Rd.	6.09 – 6.41	**4**	2	700	**462**	924	2
5	Worden Hill Rd. – Red Hills Rd.	6.41 – 9.12	**28**	**29**	700	**513**	**495**	20
6	Red Hills Rd. – Tangen Rd.	9.12 – 9.87	5	**8**	700	739	**462**	5
7	Tangen Rd. – Old Yamhill Rd.	9.87 – 10.67	**5**	**6**	700	**618**	**515**	4
8	Old Yamhill Rd. – w/o Chehalem Dr.	10.67 – 10.85	**5**	**8**	500	**459**	**287**	4
9	W/O Chehalem Dr. – Newberg City Limit	10.85 – 11.01	**5**	2	250	**201**	502	4

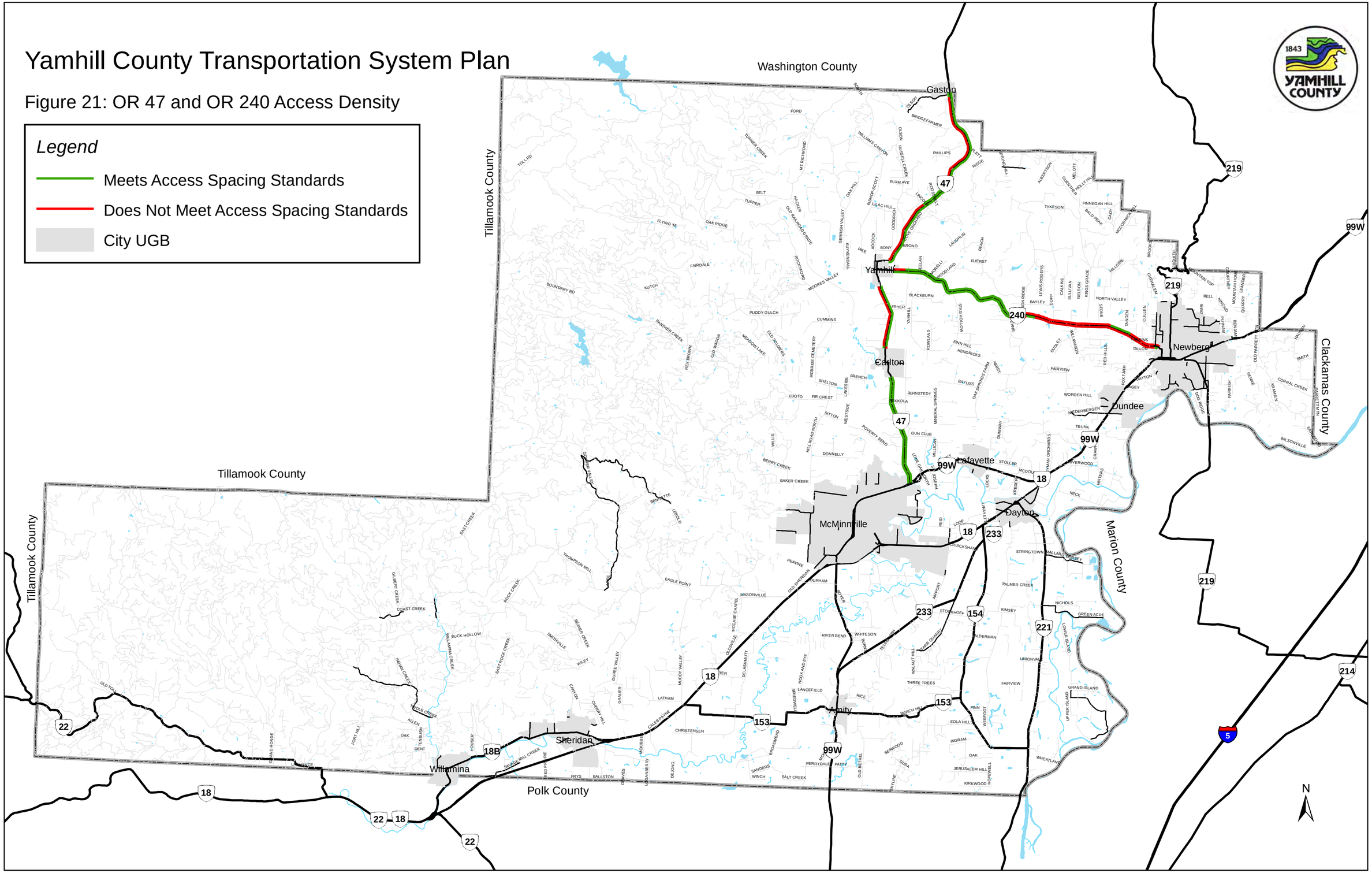
* Bold/shaded cells indicate intersections not meeting access spacing standard.

Yamhill County Transportation System Plan

Figure 21: OR 47 and OR 240 Access Density

Legend

- Meets Access Spacing Standards
- Does Not Meet Access Spacing Standards
- City UGB



BICYCLE AND PEDESTRIAN

FACILITIES

Bikeways include shoulder bikeways, shared roadways, bike lanes, and shared-use paths. A shoulder bikeway is a paved shoulder that provides a suitable area for bicycling, reducing conflicts with faster moving motor vehicle traffic.[21] On a shared roadway, bicyclists and motorists share the same travel lanes. There are no standard dimensions for shared roadways. They are common on rural roads and low-volume highways. Shoulder bikeways and shared roadways comprise nearly all of the bicycle facilities within the rural Yamhill County area.

Bike lanes are a portion of the roadway designated for preferential use by bicyclists. They are marked with pavement stencils and an eight-inch wide stripe. Bike lanes are typically provided on busy urban and suburban streets, but may also be provided on rural highways near urban areas, where there is high bicycle use. There are only a few bike lanes in the study area, located on Dayton Ave. outside of Newberg, and on Hill Rd., Old Sheridan Rd., and Baker Creek Rd. near McMinnville. There are no shared-use paths within the rural county area.

Walkways include sidewalks, paths, and shoulders. There are no sidewalks or paths within the study area. Thus, all of the pedestrian facilities consist of shoulders, which may be used to serve pedestrians as well as bicyclists in rural areas.[22]

BICYCLE AND PEDESTRIAN VOLUMES

Bicycle and pedestrian volumes were collected as a part of the peak period (3-6 P.M.) intersection turning movement counts conducted for the study. These volumes are shown in Table 16.

Bicycle and pedestrian volumes are very low, with the highest volumes occurring near cities (e.g., NW Hill Rd./NW Baker Creek Rd. near McMinnville).

[21] Oregon Department of Transportation, Bicycle and Pedestrian Design Guide, (2011).
[22] Oregon Department of Transportation, Highway Design Manual, (2003).

Table 16 – Peak Period Bicycle and Pedestrian Volumes

Intersection	Bicycle Volume	Pedestrian Volume
NW Hill Rd./NW 2nd St. (McMinnville)	0	11
NW Hill Rd./NW Baker Creek Rd. (McMinnville)	2	2
NW Westside Rd./NW Meadow Lake Rd.	0	0
NE Abbey Rd./NE Hendricks Rd.	0	0
OR 240/NE Kuehne Rd.	0	0
OR 219/North Valley Rd.	3	0
N. Aspen Way/NE Bell Rd.	0	0
OR 99W/OR 18/McDougall Rd.	2	0
OR 18/SE Ash Rd.	0	0
OR 18/OR 154/Lafayette Hwy.	0	0
OR 154/OR 233	0	0
OR 154/SE Stringtown Rd.	0	0
OR 153/Hopewell Rd./SE Webfoot Rd.	0	0
OR 154/SE Walnut Hill Rd./SE Fairview Rd.	0	0
OR 240/Worden Hill Rd.	0	2
NE Zimri Rd./NE Bell Rd.	0	0
NW Springbrook Rd./NE Bell Rd.	1	0
Parrett Mountain Rd./Schaad Rd.	1	2
Mineral Springs Rd./Gun Club Rd.	1	0
Chehalem Dr./North Valley Rd.	0	0

NEEDS

The ODOT Bicycle and Pedestrian Guide[23] indicates that shared roadways are suitable for bicycle use on low-volume rural roads and highways. Thus, shared roadways are appropriate for most county roads and some state highways within the study area, with no bicycle needs along these facilities.

On rural roads with high bicycle use or demand, however, the Guide states that roads should include paved shoulders where vehicle speeds and volumes are high. Further, the Guide

[23] Oregon Department of Transportation, Bicycle and Pedestrian Design Guide, (2011).

recommends that the shoulder width standards for rural highways contained in the HDM should be used in determining adequate shoulder widths for bicycle use. Similarly, the county uses their maintenance project shoulder width standards in determining shoulder widths for bicycle use along county roadways.

Based on these guidelines, bicycle needs were identified where there are higher bicycle and vehicle volumes and:

- The shoulder width standard is not met; or
- The shoulder is not paved.

These locations are shown in Figure 22 and include all or portions of:

- OR 47
- OR 99W
- OR 154/Lafayette Hwy.
- Westside Rd.
- Old Sheridan Rd.

The locations with higher bicycle volumes were identified based on information received from the stakeholders and the bicycle counts.

It is unlikely that additional bike lanes are currently needed within the study area. This is because all of the locations with higher bicycle volumes are on high-speed rural roadways, where bike lanes are generally not recommended.[24] The reason for this is that at channelized intersections along these facilities, the speeds are too high to place a through bike lane to the left of right-turning vehicles.

For pedestrians, shoulders are typically the most appropriate type of facility in rural areas, because pedestrian volumes are too low to warrant sidewalks or paths. The ODOT Bicycle and Pedestrian Guide[25] indicates that the shoulder widths recommended in the HDM are generally adequate to accommodate pedestrians. The county considers shoulders meeting their maintenance project shoulder width standards to be adequate for serving pedestrians.

[24] Oregon Department of Transportation, Bicycle and Pedestrian Design Guide, (2011).
[25] Oregon Department of Transportation, Bicycle and Pedestrian Design Guide, (2011).

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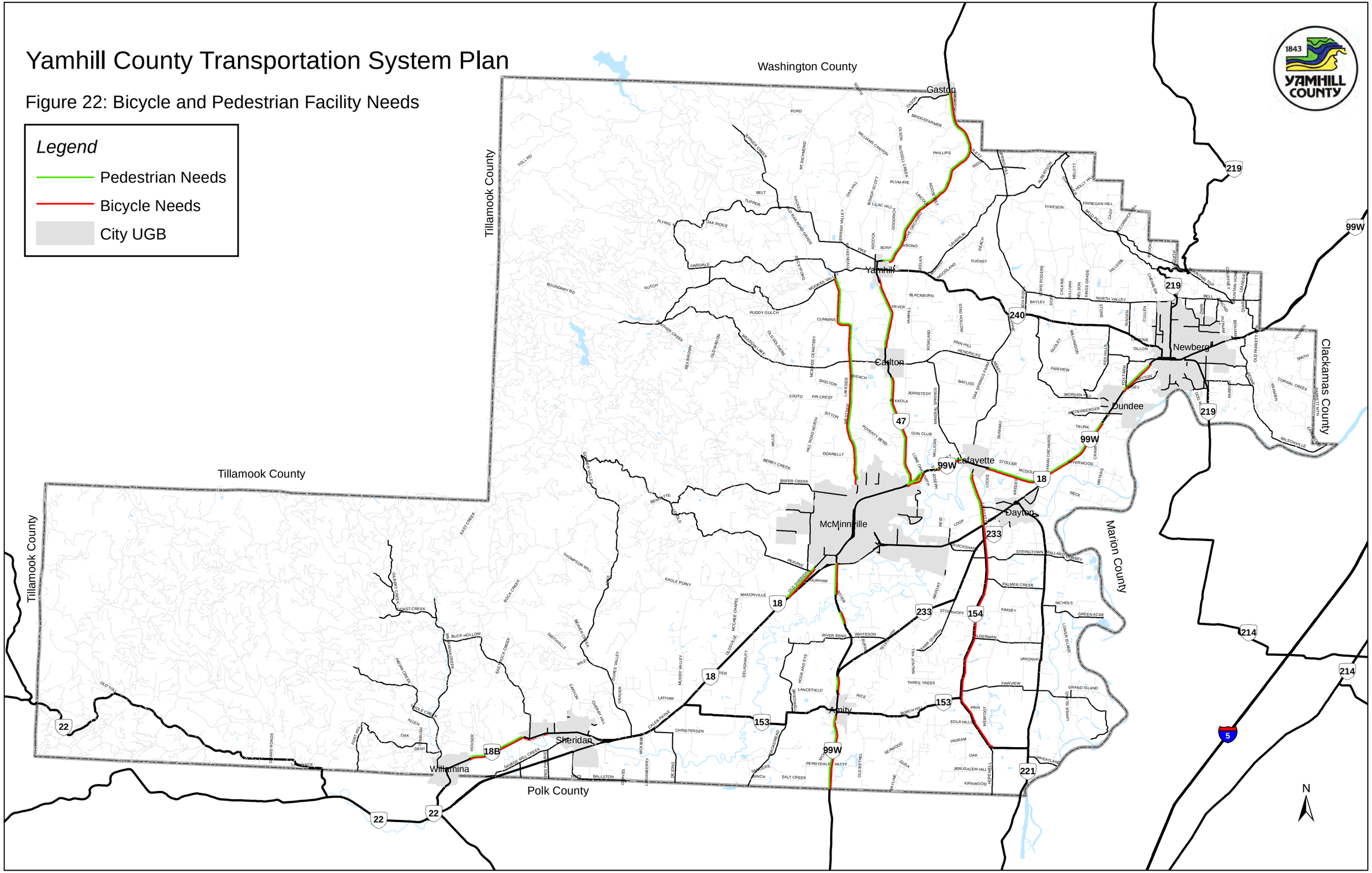
Figure 22: Bicycle and Pedestrian Facility Needs

Legend

- Pedestrian Needs
- Bicycle Needs
- City UGB



The roadway segments identified by the stakeholders as having higher pedestrian volumes that do not meet the ODOT and county shoulder width standards are shown in Figure 22. These are largely the same as the locations with bicycle needs, with the exception of OR 18B between Sheridan and Willamina. Here, there are several areas with shoulder widths of only a foot or so.

Reported Needs

The roadways with bicycle and pedestrian needs reported by the stakeholders include the locations listed on the previous page, as well as the following:

- OR 233
- North Valley Rd.
- Worden Hill Rd.
- Fox Farm Rd.

These are shown in Figure 13 and Table A-1 in Appendix A. The need to accommodate bicyclists and pedestrians with improved facilities along these roadways was identified by the stakeholders.

CORRIDOR HEALTH

CORRIDOR HEALTH CONCEPT

The U.S. Department of Transportation recommends the use of a multiple criteria to analyze needs and prioritize transportation projects and investments in rural areas.[26] Following this guidance, a Corridor Health Tool was applied for all state highways and county roads within the study area with a functional classification of minor collector or higher. The corridor health concept is based on the idea of measuring the "health" of a corridor for several different categories of performance, and then combining the measurements to provide a picture of overall corridor health.

[26] U.S. Department of Transportation, Planning for Transportation in Rural Areas, (2001).

DEVELOPMENT OF FACTORS, WEIGHTS, AND FORMULAS

The Corridor Health Tool comprises a set of factors, weights, and formulas that are used to calculate a composite health score for each corridor segment. The factors correspond to the same areas of need described in the previous sections, i.e., mobility, traffic operations, safety, geometrics, and bicycle and pedestrian facilities.

A set of weights was developed for the factors, with the sum of the weights equal to 100. Formulas were also developed to calculate scores for each of the factors. The formulas were set up to produce scores ranging from zero to one, with a score of one representing "perfect" health and a score of zero indicating very poor conditions or performance. The weights and formulas for each factor are shown in Table 17.

Table 17 – Corridor Health Score Weights and Formulas

Factor	Weight	Scoring Formula
Safety	35	=0.5/X if X $\geq$ 0.5; else 1 Where: X = 0.7*(Fatal +Injury Crash Rate for Segment/ Average for Facility Category) + 0.3*(Total Crash Rate for Segment/ Average for Facility Category)
Geometrics	20	=0.2*min(Lane Width/Lane Width Standard,1)+0.8*min(Shoulder Width/Shoulder Width Standard,1)
Traffic Operations	15	=1-min(Turn Lane Need, Max. Turn Lane Need)/ Max. Turn Lane Need*
Bicycle/Pedestrian Facilities	15	=(% of Segment with Adequate Bicycle/Pedestrian Facilities)/100**
Mobility	15	=min((1-VC)/(1-VC Standard),1)

* Turn lane need is the number of turn lanes (left-turn and right-turn) needed per segment. Since segment endpoints were defined by intersections with minor collector roadways or above, a value of four was assumed for the maximum turn lane need (i.e., the need for a left-turn lane and right-turn lane at each end of the segment).

** Bicycle/pedestrian facilities were considered to be adequate if the shoulder width standard was met.

The factor scores were multiplied by the weights to produce an overall corridor health score for each segment ranging between zero and 100, with 100 representing the best score and zero the worst score.

RESULTS

The corridor health scores are shown in Figure 23. For ease of understanding, the the segments were assigned to good, fair, and poor categories of corridor health based on the scores. The scores corresponding to each category are:

- Good – 75 – 100
- Fair – 50 – 74
- Poor - < 50

The percentages of state highway mileage by corridor health category are presented in Table 18.

Table 18 – Corridor Health – State Highways

State Highway	Corridor Health							
	Good		Fair		Poor		Total	
	Miles	%	Miles	%	Miles	%	Miles	%
OR 18	10.9	67%	5.3	33%	0.0	0%	16.2	100%
OR 18B	2.0	67%	0.0	0%	1.0	33%	3.0	100%
OR 22	0.0	0%	2.9	22%	10.0	78%	12.9	100%
OR 47	3.1	22%	7.3	51%	3.9	27%	14.3	100%
OR 99W	11.1	63%	5.4	30%	1.2	7%	17.7	100%
OR 153	1.3	10%	6.0	45%	6.0	45%	13.3	100%
OR 154	0.0	0%	2.4	38%	3.9	62%	6.3	100%
OR 219	1.5	33%	3.0	67%	0.0	0%	4.5	100%
OR 221	0.0	0%	6.1	62%	3.8	38%	9.9	100%
OR 233	2.3	28%	4.4	54%	1.5	18%	8.2	100%
OR 240	1.2	12%	4.0	38%	5.2	50%	10.4	100%
Total	33.4	29%	46.8	40%	36.5	31%	116.7	100%

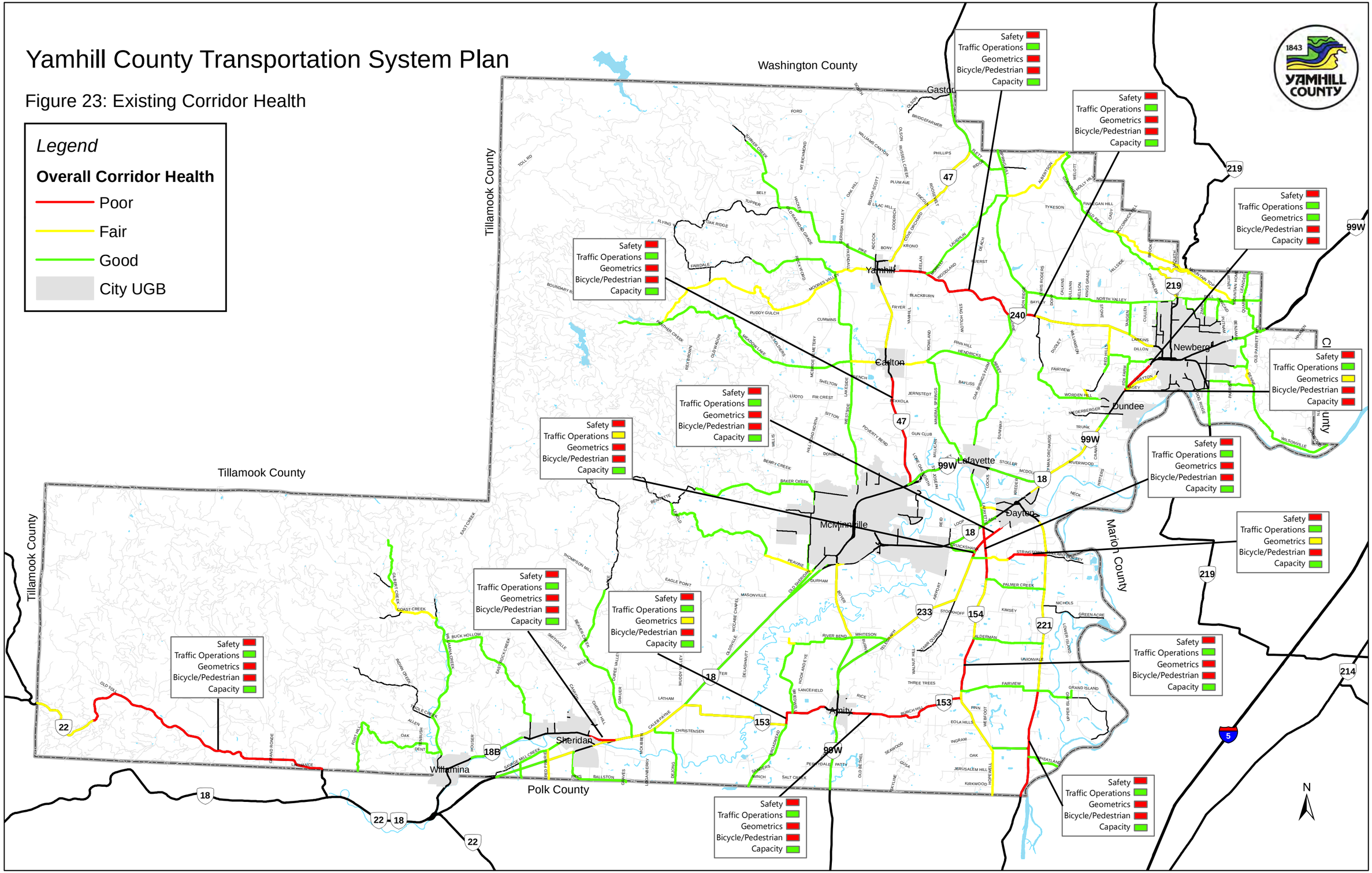
Yamhill County Transportation System Plan

Figure 23: Existing Corridor Health

Legend

Overall Corridor Health

- Poor
- Fair
- Good
- City UGB



The percentages of overall state highway mileage falling within each corridor health category are:

- Good – 29%
- Fair – 40%
- Poor - 31%

Nearly all of OR 99W/OR 18, the primary route within the study area, is within the good or fair categories, with only a small percentage (7%) between Newberg and Dundee within the poor category. State highways with relatively high percentages of "poor" mileage include OR 22 (78%), OR 154 (62%), and OR 240 (50%). The main factors contributing to the poor scores for almost all of the "red" state highway segments shown in Figure 23 are safety, geometrics, and bicycle/pedestrian facilities.

Nearly all of the county roadway mileage falls within the good or fair categories, as reflected in the following percentages:

- Good – 86%
- Fair – 13%
- Poor - 1%

The only county road with a portion of its mileage within the poor category is Stringtown Rd., between OR 221 and Webfoot Rd. The factors contributing to the poor score for this segment are safety and bicycle/pedestrian facilities.

TRANSIT

SERVICES AND FACILITIES

Yamhill County Transit Area (YCTA) provides the majority of the transit service within the county. This includes intra-city service within McMinnville and Newberg, inter-city link routes, Dial-a-Ride service, and Volunteer Medical Transportation.

The intra-city service comprises two routes in McMinnville and two routes in Newberg. It is provided at one-hour headways, Monday through Friday, with connections to the link routes. Four link routes connect McMinnville, Newberg, and other communities to destinations outside of Yamhill County. These operate along fixed routes with fixed schedules, and serve major

stops within each community. The link routes are shown in Figure 24 and summarized in Table 19.

Table 19 – Link Route Transit Service

Route	Service Days	Number of Trips*		Places Served
		A.M.	P.M.	
11 – McMinnville – Salem	Weekday	2	3	McMinnville, Whiteson, Amity, West Salem
22 – McMinnville – West Valley	Weekday	4	4	McMinnville, Sheridan, Willamina, Grand Ronde
24S – McMinnville – West Valley	Saturday	2	2	McMinnville, Sheridan, Willamina, Grand Ronde
33 – McMinnville - Hillsboro	Weekday	2	3	McMinnville, Carlton, Yamhill, Gaston, Forest Grove, Hillsboro
44 – McMinnville-99W Link	Weekday	4	6	McMinnville, Lafayette, Dayton, Dundee, Newberg, Sherwood, Tigard
45X - McMinnville-99W Link (Express)	Weekday	1	1	McMinnville, Newberg, Sherwood, Tigard
46S - McMinnville-99W Link	Saturday	2	3	McMinnville, Lafayette, Dayton, Dundee, Newberg, Sherwood, Tigard

* Trips by direction (inbound/outbound).

Dial-a-Ride is a curb-to-curb transportation service operating throughout Yamhill County. It is available to anyone unable to access YCTA fixed routes because of mobility limitations, or those whose origins and/or destinations are not near YCTA fixed routes.

Volunteer Medical Transportation is a volunteer-operated van service providing Yamhill County residents access to medical appointments in the Portland area, serving over 100 medical locations including hospitals, clinics, laboratories, and doctor offices. The van is provided by YCTA and the service is funded by a yearly grant from ODOT Special Transportation Funds.

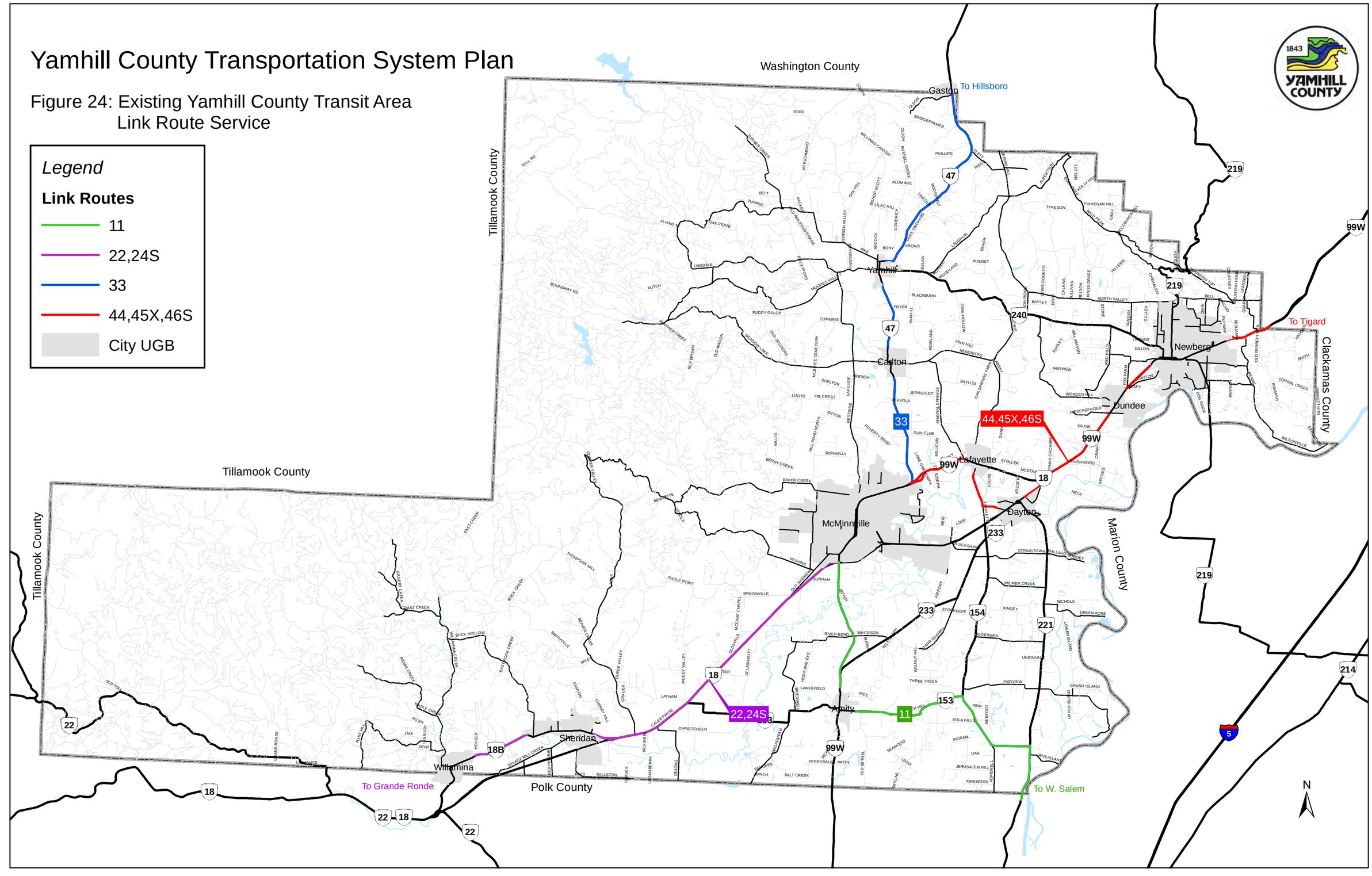
Yamhill County Transportation System Plan

Figure 24: Existing Yamhill County Transit Area Link Route Service

Legend

Link Routes

- 11
- 22,24S
- 33
- 44,45X,46S
- City UGB



In addition to the services provided by YCTA, there are a number of human services agencies whose missions include providing some form of transportation assistance to their clients. These agencies generally provide services to a specific client population and are not available to the general public.

There are no transit facilities such as bus shelters, bus pull-outs, or park-and-ride lots within the study area.

NEEDS

The Yamhill County Coordinated Human Services Public Transportation Plan: The Next Steps[27] was prepared by the Mid-Willamette Valley Council of Governments in 2007 to identify strategies to improve transportation services for people with disabilities, seniors, and individuals with lower incomes. Unmet transportation needs were identified and grouped into the following categories:

- Lack of available transportation services
    - Lack of transportation services during evenings and weekends
    - Need for more frequent bus stops
    - Need for expanded service to large employers such as the Spirit Mountain Casino and the Riverside Drive industrial area
- Gaps in transportation service to specific areas
    - Gaps in outlying areas
    - Need for inter-city transportation between Yamhill and Carlton
    - Need for inter-city transportation between Sheridan, Willamina and Grand Ronde (West Valley)
- Inadequate transit facilities
    - Need for designated bus stops with signs and posted schedules
    - Need for transit shelters for fixed routes

[27] Mid-Willamette Valley Council of Governments, Coordinated Human Services Public Transportation Plan, (2007).

- Many areas lack sidewalks, curb cuts, loading spaces, and crosswalks
- Need for better ADA accessibility

YCTA staff indicated that these still represent YCTA's needs; however, the following additional needs were also identified:[28]

- Pull-outs for buses
- Improved travel time reliability on OR 99W
- More regional connections (e.g., the Oregon coast)

Reported Needs

The only transit needs reported by the stakeholders were the lack of pull-outs for buses and the lack of designated stop areas.

BRIDGES

Existing bridge conditions and needs were analyzed based on data obtained from ODOT's PONTIS bridge management system. The database contains information on bridge sufficiency ratings, structural conditions, and height and load restrictions for both ODOT and county bridges.

SUFFICIENCY RATING

The sufficiency rating for each bridge is determined by periodic inspections performed by ODOT. The rating is a numeric value indicative of the sufficiency of a bridge to remain in service. A score of 100% would represent an entirely sufficient bridge, while a score 0% would indicate a completely deficient bridge. The rating is calculated using a formula comprising the following factors:

- Structural adequacy and safety (maximum of 55%)
- Serviceability and functional obsolescence (maximum of 30%)
- Essentiality for public use (maximum of 15%)
- Special reductions (maximum of -13%)

[28] Conversation with Tanya Saunders, YCTA, on March 5th, 2012.

The Federal Highway Administration (FHWA) uses this index in evaluating the nation's bridges for funding distribution and eligibility. Those bridges with a sufficiency rating of 80 or less are eligible for rehabilitation. Bridges with a rating of 50 or less are eligible for replacement. Bridges lose their eligibility status for a period of ten years after a federal Highway Bridge Program project is completed. Figure 25 shows the sufficiency rating for all ODOT and county bridges within the study area.

Table 20 summarizes the study area bridges by eligibility status based on their sufficiency ratings.

Table 20 – FHWA Bridge Funding Eligibility Status

FHWA Funding Status	ODOT Bridges		County Bridges		All Bridges	
	No.	%	No.	%	No.	%
Not Eligible (Suff. Rating > 80)	11	42%	11	65%	22	51%
Rehabilitation (Suff. Rating > 50 - 80)	13	50%	4	24%	17	40%
Replacement (Suff. Rating <= 50)	2	8%	2	12%	4	9%
Total	26	100%	17	100%	43	100%

As shown, 58% of the ODOT bridges and 36% of the county bridges are eligible for either rehabilitation or replacement (sufficiency rating of less than 80). Overall, 49% of the study area bridges are eligible for funding. The four bridges eligible for replacement (sufficiency rating of less than 50) are:

- OR 99W at North Yamhill River
- OR 22 at South Yamhill River
- Palmer Creek Rd. at Palmer Creek
- Dejong Rd. at South Yamhill River

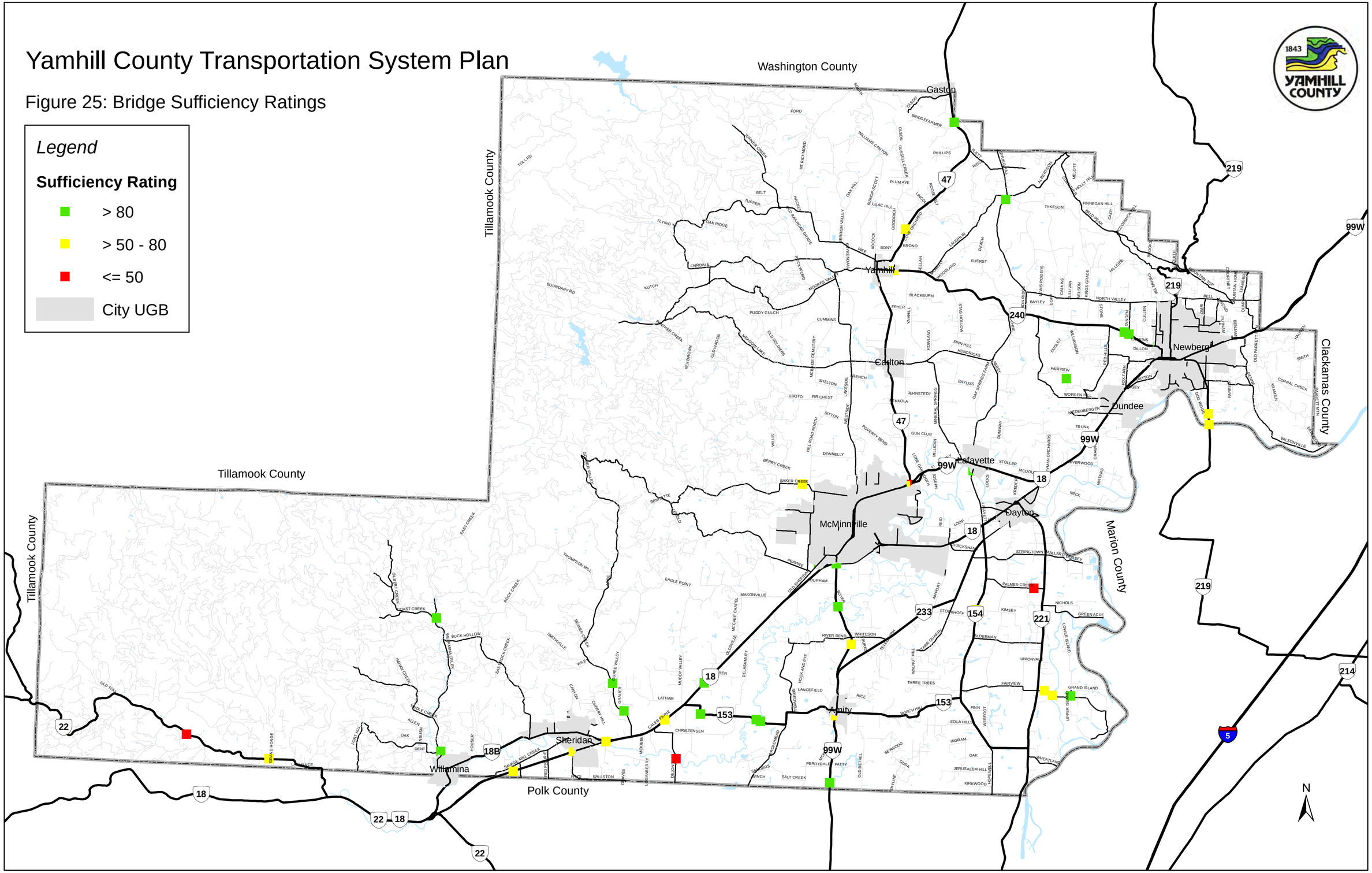
Yamhill County Transportation System Plan

Figure 25: Bridge Sufficiency Ratings

Legend

Sufficiency Rating

- > 80
- > 50 - 80
- <= 50
- City UGB



STRUCTURAL CONDITIONS

As part of ODOT's bridge inspection program, various bridge components are evaluated on a scale of zero-to-nine according to the National Bridge Inventory (NBI) system, including the bridge deck, superstructure, and substructure. The general condition of these components for the ODOT and county bridges within the study area are summarized in Table 21.

Table 21 – Bridge Condition Ratings

Component	Bridge Condition Ratings							
	Good (7-9)		Fair (5-6)		Poor (0-4)		Total	
	No.	%	No.	%	No.	%	No.	%
ODOT Bridges								
Bridge Deck	9	35%	17	65%	0	0%	26	100%
Superstructure	9	35%	17	65%	0	0%		
Substructure	10	38%	16	62%	0	0%		
County Bridges								
Bridge Deck	12	71%	5	29%	0	0%	17	100%
Superstructure	15	88%	2	12%	0	0%		
Substructure	5	29%	10	59%	2	12%		
All Bridges								
Bridge Deck	21	49%	22	51%	0	0%	43	100%
Superstructure	24	56%	19	44%	0	0%		
Substructure	15	35%	26	60%	2	5%		

Two county bridges have a poor substructure rating. These are:

- Dejong Rd. at South Yamhill River
- Palmer Creek Rd. at Palmer Creek

All of the other bridges have a good or fair rating for all of the components.

HEIGHT AND LOAD RESTRICTIONS

The PONTIS data indicated there are no ODOT or county bridges within the study area having height restrictions. There are, however, two railroad trestles with vertical underclearances that are less than the ODOT standard of 16 feet.[29] These are the WPRR trestle over OR 99W between Lafayette and OR 47 (15.1 feet) and the WPRR trestle over OR 99W north of Whiteson (14.8 feet). There are several bridges in Yamhill County with load restrictions, but all of these are within the incorporated areas.

[29] Oregon Department of Transportation, Bridge Design and Drafting Manual, (2012).

APPENDIX A

REPORTED NEEDS

Attachment 8

Table A-1

Yamhill County Transportation System Plan

Reported Needs

Location	Reported Need					
	No.	Description	Type*	Frequency**	Source	Comments
Countywide		Need better alternatives to OR 99W.	M	1	Stakeholder Interviews	
Countywide		Not enough routes connecting communities.	M	1	Stakeholder Interviews	
Countywide		Roadway shoulders need widening.	G	3	Stakeholder Interviews	
Countywide		Roadways need widening.	G	3	Stakeholder Interviews	
Countywide		Roadways need better maintenance.	Mnt	2	Stakeholder Interviews	
Countywide		Lack of designated stop areas for buses.	O, T	1	Stakeholder Interviews	
Countywide		Lack of pull-outs for buses.	O, T	1	Stakeholder Interviews	
Niederberger Rd.	1	Narrow roadway and two sharp horizontal curves.	G	1	RIAC	1. Narrow roadway with horizontal and vertical curves. 2. Roadway width appears to be adequate to serve relatively low traffic volume. 3. Portion of roadway is eroding down hillside and is in need of repair.
Hendricks Rd./Abbey Rd./Kuehne Rd.	2	1. Skewed intersection/poor sight distance from Abbey Rd. to Hendricks Rd. 2. Horizontal curve on Hendricks Rd. 3. Confusion about which movements have right-of-way. 4. High speed merge with yield only from NB Abbey Rd to NB Kuehne Rd. Also, angle of SB Kuehne Rd. to SB Abbey Rd. movement encourages high speeds and conflicts with high-speed NB Kuehne Rd. traffic. 5. Problem with connector between Hendricks Rd. and Abbey Rd. may be handled in same way as ODOT improvement at OR 18/Cruickshank Rd.	G, O	3	RIAC, Stakeholder Interviews, Road Maintenance Staff	1. Sight distance does not appear to be an issue, although intersection angle at Abbey Rd./Kuehne Rd. is acute. 2. Remainder of reported needs confirmed through field survey.
Spring Hill Rd./Flett Rd.	3	1. Horizontal curve. 2. Confusion for drivers on NB Spring Hill Rd. about whether to continue straight on Spring Hill Rd. or left on Flett Rd.	G, O	2	RIAC, Road Maintenance Staff	Through route is well-marked with signage. Striping could be improved to make this clearer, however.
Willamina Creek Rd./Tindle Creek Rd.	4	Horizontal curve	G	1	RIAC	1. Trees, bushes, and hill in northwest quadrant of intersection limit sight distance on curve and at intersection. 2. At north intersection, sight distance to southeast is limited from 14.5’ from edge of traveled way. 3. At south intersection, sight distance to northwest is limited to 275’ from 14.5’ from edge of traveled way.

Attachment 8

Table A-1

Yamhill County Transportation System Plan

Reported Needs

Location	Reported Need					
	No.	Description	Type*	Frequency**	Source	Comments
Bell Rd./Springbrook Rd.	5	1. Horizontal curves on Bell Rd and Springbrook Rd. 2. Vertical curve on Bell Rd. 3. Limited sight distance from Springbrook Rd (both eastbound and westbound). 4. Utility pole near edge of pavement not visible to westbound vehicles on Bell Road.	G	1	RIAC	1. Horizontal and vertical curves on Bell Rd., combined with skewed intersection angle and relatively high speeds, limit sight distance and create safety concern. 2. Speed reduction is not signed in advance of intersection on Bell Rd.; advance signage does, however, indicate atypical intersection geometry and need to slow down.
OR 233/Cruickshank Rd.	6	Improved safety.	S	1	RIAC	1. No apparent sight distance or geometric issues. 2. May be confusing to drivers due to three conflict locations, although each location is stop controlled.
OR 154/Stringtown Rd.	7	1. Atypical intersection configuration - separated right turn lanes (connectors) require drivers to turn their heads sharply to see on-coming traffic. 2. Problems with free northbound left-turn and free eastbound right-turn movements.	G, O	3	RIAC, Stakeholder Interviews, Road Maintenance Staff	1. Free NB to WB movement may be confusing to drivers unfamiliar with right-of-way rules. 2. EB to SB movement requires drivers to turn their heads sharply to see SB traffic. 3. No apparent sight distance deficiencies.
OR 219/Mountain Top Rd.	8	Sight distance/skewed intersection – “can’t see over hump”.	G	2	RIAC, Road Maintenance Staff	1. Mountain Top Rd. approaches OR 219 at well over 3% grade and at an awkward skew. 2. Sight distance from Mountain Top Rd. to north was measured as 325’. This is below standard of 335’.
Bell Rd./Zimri Rd.	9	1. Sight distance problem for northbound traffic turning eastbound. 2. High speeds on Bell Rd.	G	1	RIAC	1. Vertical curve west of Zimri Rd. restricts sight distance, which was measured as 300’ from northbound approach to west. Posted speed of 45 mph would require 500’ of sight distance. 2. Additional sight distance (up to 550’) would be available with removal of obstructions along south side of Bell Rd. (utility box, mail boxes, trees, etc.).
Bell Rd./Aspen Way	10	1. Sight distance problem for northbound drivers looking westbound. 2. Vertical curve on Bell Rd.	G	1	RIAC	1. Vertical curve on Bell Rd. west of Aspen Way limits sight distance from northbound approach of Aspen Way to west to 200-225’ compared to 500’ standard. 2. Aspen Way approaches Bell Rd. at grade of steeper than 3%.
OR 240/Worden Hill Rd.	11	Sight distance problem/skewed intersection.	G	2	RIAC, Road Maintenance Staff	1. Worden Hill Rd. is a gravel road that provides access to several wineries. It approaches OR 240 at a grade of well over 3% and on a skew. Sight distance was measured as 325’ from northbound approach to east, which does not meet the standard of 610’. 2. House would have to be acquired to straighten intersection.

Table A-1
Yamhill County Transportation System Plan
Reported Needs

Location	Reported Need					
	No.	Description	Type*	Frequency**	Source	Comments
Mineral Springs Rd./Gun Club Rd.	12	Sight distance problem on Gun Club Rd. due to horizontal curve on Mineral Springs Rd.	G	1	RIAC	1. Sight distance from eastbound approach of Gun Club Rd. at Mineral Springs Rd. is 390' to north. 2. Sight distance from northbound approach of connector road is 390' to southeast and 690' to the north. 3. Advisory speed for curve on Mineral Springs Rd. is 35 mph. Based on this speed, sight distances from both eastbound approach of Gun Club Rd. and northbound approach of Gun Club Rd. connector road are adequate. 4. No control at intersection of connector road and Gun Club Rd. Need for stop or yield sign on southbound approach of connector road or westbound approach of Gun Club Rd. should be investigated.
North Valley Rd./Chehalem Dr.	13	Sight distance problem.	G	2	RIAC, Stakeholder Interviews	1. Vertical curve on North Valley Rd. west of Chehalem Dr. restricts sight distance, which was measured as 325' from northbound approach of Chehalem Dr. to west and 350' from southbound approach to west. North Valley Rd. posted speed is 45 mph, requiring 500' of sight distance. 2. Adequate sight distance is available to east.
Schaad Rd./Parrett Mountain Rd.	14	Large vehicles have difficulty getting started on gravel approach of Schaad Rd. even in best conditions. Worse with snow and ice.	G	1	RIAC	1. Schaad Rd. approaches Parrett Mountain Rd. at severe grade (over 10%) and there are horizontal and vertical curves on Parrett Mountain Rd. immediately south of intersection. While first 75' of Schaad Rd. is paved, it is gravel road beyond that. Sight distance on Schaad Rd. was measured as 100' to south, which is inadequate. 2. Speeds on both roadways are relatively low due to geometric constraints.
OR 99W between Lafayette and McMinnville	15	Roadway is in poor condition.	Mnt	1	Stakeholder Interviews	
Cunningham Ln.	16	Needs maintenance (poor condition).	Mnt	1	Stakeholder Interviews	

Table A-1
Yamhill County Transportation System Plan
Reported Needs

Location	Reported Need					
	No.	Description	Type*	Frequency**	Source	Comments
OR 154/Hopewell Rd.	17	Very dangerous – high speeds.	G	1	Stakeholder Interviews	1. Intersection is located on horizontal curve which limits sight distance to east. Sight distance was measured as: • Southbound approach - 385’ to east and 550’ to west. • Northbound approach - 575’ to east and > 610’ to west. 2. Trimming/removal of vegetation would help for all sight distance restrictions. Removal of trees would likely be required to improve sight distance to east in order to meet standards.
Turner’s Creek Rd.	18	Roadway is in poor condition.	Mnt	1	Stakeholder Interviews	Roadway is severely rutted with potholes.
Moore’s Valley Rd.	19	Roadway is in poor condition.	Mnt	1	Stakeholder Interviews	1. In general, condition of road seems adequate for level of traffic observed. 2. Near Yamhill, road has been newly paved and there are no major roadside obstructions. 3. Further to west, quality of pavement is degraded and section of road is marked as being part of slow slide area. Beyond paved section, road turns to gravel. Gravel seems to be in good condition, with no rutting or washboarding.
OR 18/Lafayette Hwy.	20	Dangerous intersection.	S	3	Stakeholder Interviews	1. High speeds and high volume on OR 18 make turning onto or crossing highway difficult. 2. No geometric or sight distance issues identified.
OR 99W/OR 18/McDougall Rd.	21	Dangerous intersection - safety and traffic operations problems.	S,O	3	Stakeholder Interviews, Road Maintenance Staff	1. Intersection configuration is not standard and may be confusing to drivers. 2. High speeds and high traffic volumes on both OR 99W and OR 18 create safety concern. 3. No geometric or sight distance problems identified.
OR 18	22	Need four lanes all the way to coast.	M	3	Stakeholder Interviews	
OR 18 – S. Yamhill River Bridge (Sheridan)	23	Needs replacement/improvement – critical in case of disaster.	S	1	Stakeholder Interviews	Bridge is narrow.
OR 18/Gopher Valley Rd.	24	1. Poor sight distance from Gopher Valley Rd. 2. High volume of traffic on OR 18 combined with merging traffic from adjacent business access. 3. Poor geometrics.	G	2	Stakeholder Interviews, Road Maintenance Staff	Adequate intersection sight distance available in both directions from Gopher Valley Rd. (660’ to east and west).
High Heaven Rd.	25	Roadway is in poor condition.	Mnt	1	Stakeholder Interviews	

Attachment 8

Table A-1

Yamhill County Transportation System Plan

Reported Needs

Location	Reported Need					
	No.	Description	Type*	Frequency**	Source	Comments
Peavine Rd.	26	Roadway is in poor condition.	Mnt	1	Stakeholder Interviews	1. Pavement is in good to excellent condition for first few miles of road (Old Sheridan Rd. to Bennett Rd.). Pavement markings are in good condition. 2. After this section, pavement quality drops and there is some patching; pavement is still smooth and in relatively good shape, however. Guardrail is in good condition. Pavement markings are a little worn, but still visible. 3. Pavement is more patched in section where slow slide has been gradually deforming face of slope and adjacent road.
OR 153 w/o S. Yamhill River Bridge	27	Sharp corner, steep shoulder, narrow road - feels unsafe.	G	1	Stakeholder Interviews	1. Area is mostly flat. There are four curves, two of which are 90-degree curves between OR 18 and SW Broadmead Rd. All curves are marked and have speed warning signs. 2. Bridge is as wide as road and has shoulders.
OR 18	28	Needs turn lanes.	O	1	Stakeholder Interviews	
Delashmutt Ln.	29	Very dangerous due to lack of turn lanes.	O	1	Stakeholder Interviews	
Hidden Springs Rd./Fox Farm Rd.	30	Poor sight distance from Hidden Springs Rd.	G	1	Stakeholder Interviews	1. Horizontal and vertical curves along Fox Farm Rd. create poor sight distance from Hidden Springs Rd. Measured sight distance to east is 350', compared to sight distance requirement of 610'. Sight distance from stop bar to south is zero. 2. Trimming of vegetation would help, but probably would not eliminate sight distance need.
Sheridan/WIllamina	31	Traffic signal is needed along OR 18 for safe access/crossing.	S	1	Stakeholder Interviews	Interchange already exists at OR 18/Ballston Rd.
OR 153/OR 221	32	1. Atypical intersection configuration – separated right turn lanes (connectors) require drivers to turn their heads sharply to see on-coming traffic. 2. Free movement from northbound OR 221 to westbound OR 153 is confusing to some drivers.	G, O	1	Stakeholder Interviews	1. Free NB to WB turn movement may be confusing. 2. No sight distance issues identified, although drivers must turn their heads sharply to see on-coming traffic because of sharp angle of connector road approaches at OR 153 and OR 221.
OR 18/Christensen Rd.	33	1. Safety and traffic operations issues. 2. Conflicting movements from accesses at or near intersection.	O	1	Road Maintenance Staff	1. This is visually busy intersection. 2. Sight distance does not appear to be problem. 3. Project to add westbound left turn lane on OR 18 is underway. Caleb Payne Rd. also to be cul-de-sac'd.

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Table A-1

Yamhill County Transportation System Plan

Reported Needs

Location	Reported Need					
	No.	Description	Type*	Frequency**	Source	Comments
OR 18/Ash Rd.	34	Safety, geometric and traffic operations issues.	S	1	Road Maintenance Staff	1. Ash Rd. intersects OR 18 at skew; sight distance is not restricted, however. 2. High speeds and traffic volumes on OR 18 make turns onto and crossing of OR 18 difficult.
OR 18/Cruickshank Rd.	35	Safety and geometric problems remain even after reconstruction of intersection. Drivers don't realize that eastbound right-turn lane is not a through lane.	O	1	Road Maintenance Staff	Intersection has atypical channelization for WB OR 18 left-turns onto Cruickshank Rd. and NB Cruickshank Rd. left-turns onto WB OR 18. In addition, Loop Rd. intersects OR 18 about 300' west of Cruickshank Rd., further complicating intersection operations.
OR 240/Kuehne Rd.	36	Merge from Kuehne Rd. to OR 240 is confusing - drivers on Kuehne Rd. are required to stop, but only have to yield further south at Abbey Rd./Kuehne Rd. intersection.	O	1	Road Maintenance Staff	1. Intersection has three conflict points which are all stop-controlled. 2. Sight distance was measured and found to be adequate, except on connector road to SB Kuehne Rd., where sight distance to north/east is 240'. This is due to vegetation which could be trimmed.
Abbey Rd. between Oak Spring Farms Rd. and Millican Creek	37	Poor horizontal alignment.	G	1	Road Maintenance Staff	1. Several sharp horizontal curves - all are signed in advance and well-marked. 2. County will be adding shoulders in this area.
OR 18/OR 153/Muddy Valley Rd.	38	Sight distance problem to north.	G	1	Road Maintenance Staff	Measured sight distance is adequate in both directions from both OR 153 and Muddy Valley Rd. approaches.
OR 240/Stiller's Mill Rd.	39	Sharp turns for trucks using Stiller's Mill Rd. to bypass Yamhill.	G	1	Road Maintenance Staff	1. Stiller's Mill Rd. is roughly 27' wide, which could make turning difficult for trucks that use it to bypass downtown Yamhill. 2. Vertical curve on OR 240, combined with fixed objects (power pole, mailbox), limit sight distance from southbound approach of Stiller's Mill Rd. to west to roughly 200'. Without fixed objects, sight distance would be about 600', which would be adequate.
OR 47	40	This is a main commuter route for bicyclists and walkers – needs improvement to accommodate them.	B, P	1	Stakeholder Interviews	
OR 99W/Old Parrett Mountain Rd., OR 99W/Corral Creek Rd., OR 99W/Quarry Rd.	41	1. High speeds and multiple lanes of traffic on OR 99W make it very difficult to turn onto highway. 2. One or more of these intersections is or has been SPIS site.	O,S	1	Road Maintenance Staff	Reported needs were confirmed through field survey.

Attachment 8

Table A-1

Yamhill County Transportation System Plan

Reported Needs

Location	Reported Need					
	No.	Description	Type*	Frequency**	Source	Comments
OR 99W/Cherry Rd.	42	1. Poor sight distance at Cherry Rd. 2. Cherry Rd. needs widening	G	1	Road Maintenance Staff	1. From 14.5' behind stop bar, sight distance is restricted by medium-sized pine tree in southeast quadrant of intersection. This limits sight distance to south to approximately 200'. 2. Sight distance improves to over 1,000' from 10' from traveled way. 3. Removal of tree would improve sight distance.
OR 99W between Dundee and Newberg	43	1. This is SPIS site. 2. Highway changes from two lanes to one lane in WB direction.	S	1	Road Maintenance Staff	There are multiple warning signs starting at 1,000' before merge.
OR 233/Starr Quarry Rd.	44	1. This is SPIS site. 2. Sharp corner – drivers on SB OR 233 are confused about which way to go. Signs are now posted.	S	1	Road Maintenance Staff	1. Confusing to drivers. 2. Signs indicate through movement is on OR 233.
OR 221/Wheatland Rd.	45	Multiple accidents – may be caused by driver inattention or rolling stops.	S	1	Road Maintenance Staff	Cause of safety problem not clear. No apparent sight distance or geometric needs.
OR 18/Harmony Rd.	46	1. This is SPIS site. 2. Drivers don't realize OR 18 is approaching – disorienting/confusing. 3. There is flasher at OR 18. 4. There is high demand for traffic crossing OR 18 at this location.	S, O	1	Road Maintenance Staff	1. Intersection is clearly visible from OR 18 and Harmony Rd. 2. There are "Intersection Ahead" and "Stop Ahead" warning signs on Harmony Rd. 3. Sight distance is adequate for all approaches at this intersection.
OR 99W/Durham Ln.	47	1. This is SPIS site. 2. Durham Ln. is used as cutoff between OR 18 and OR 99W. There is turn lane on OR 18, but not on OR 99W.	S, O	1	Road Maintenance Staff	1. Durham Ln. is newly paved and in good condition. 2. Intersection is easy to miss from SB OR 99W.
OR 47/Goodin Creek Rd.	48	Northbound turn lane may be needed on OR 47.	O	1	Road Maintenance Staff	1. Traffic counts required to confirm this need. 2. Goodin Creek Rd. is gravel at OR 47.
OR 47/Cove Orchard Rd. (north intersection)	49	Poor sight distance, skewed intersection.	G	1	Road Maintenance Staff	1. Cove Orchard Rd. intersects OR 47 at a skew. 2. Sight distance is adequate to north. 3. Sight distance to south is limited to 425' by horizontal and vertical curves on OR 47. Sight distance requirement for 55-mph roadway is 610'. 4. Speeds on OR 47 may be higher at this location.

Attachment 8

Table A-1

Yamhill County Transportation System Plan

Reported Needs

Location	Reported Need					
	No.	Description	Type*	Frequency**	Source	Comments
OR 47/Pekkola Rd.	50	Intersection on curve, possible poor sight distance.	G	1	Road Maintenance Staff	1. Intersection sight distance was measured from 14.5' from edge of traveled way. 2. Sight distance from westbound approach to south is restricted to 300' by vegetation and embankment. Sight distance to north is limited to 275' by vegetation and roadside obstructions (utility pole and fence). 3. Intersection sight distance from eastbound approach is not limited.
OR 47/OR 99W	51	Poor intersection configuration.	G	1	Road Maintenance Staff	1. Intersection configuration is somewhat confusing. 2. Possible improvement would be to separate movements and eliminate highway crossing movements: • Restrict access/egress to right-in/right-out only. • Provide SB left-turn movement as WB U-turn 300' to west. • Provide EB left-turn movement as EB U-turn 450' to east.
OR 99W Bridges w/o OR 47	52	Bridges need to be replaced – very narrow.	G	1	Road Maintenance Staff	Reported need was confirmed through field survey.
OR 18/Red Prairie Rd.	53	Red Prairie Rd. has sharp curves to south of intersection and then is straight as drivers approach intersection. No flasher to indicate approach to OR 18 – confusing.	O	1	Road Maintenance Staff	1. Flashing beacons provided at intersection for all approaches. 2. Red Prairie Rd. approaches to highway are adequately signed with advance "stop ahead" signs. 3. There is adequate intersection and stopping sight distance. 4. There is a series of 90-degree curves south of intersection. These are marked with warning signs.
OR 47/Gun Club Rd.	54	Intersection on curve, poor visibility.	G	1	Road Maintenance Staff	1. Intersection is on curve. 2. Sight distance is adequate. 3. Intersection is easy to miss when traveling along OR 47. 4. An "intersection ahead" sign would increase driver awareness of upcoming intersection.
Westside Rd. (McMinnville to Yamhill and Carlton)	55	This is a main commuter route for bicyclists and pedestrians – needs improvement to accommodate them.	B, P	1	Stakeholder Interviews	
OR 99W, Madison St. (Lafayette)/Lafayette Hwy.	56	These roads need to be included in County's bicycle plan.	B	1	Stakeholder Interviews	
OR 99W	57	Should accommodate all modes of transportation.	B, P	1	Stakeholder Interviews	
North Valley Rd.	58	Heavy use by pedestrians and bicyclists.	B, P	1	Stakeholder Interviews	

Table A-1
Yamhill County Transportation System Plan
Reported Needs

Location	Reported Need					
	No.	Description	Type*	Frequency**	Source	Comments
OR 233	59	Bike improvements needed - could use better shoulders.	B	1	Stakeholder Interviews	
Old Sheridan Rd.	60	Has large volume of pedestrian traffic with no sidewalks.	P	1	Stakeholder Interviews	1. Multiple pedestrians were observed walking along edge of road. 2. There are locations where there is little or no shoulder. Some sections of road do not have marked fog line. There is also a narrow bridge that would limit potential for shoulder widening to accommodate pedestrians. 3. Separated path and bridge would benefit pedestrians and bicyclists. This improvement has already been started at north end of Old Sheridan Rd.
OR 18B between Sheridan and Willamina	61	Sidewalk and shoulder should be extended between two towns.	B, P	1	Stakeholder Interviews	1. Multiple pedestrians were observed walking along edge of road within or near both towns. 2. There are several locations where shoulder is gravel and only a foot or so wide. 3. Wider paved shoulders or multi-use path would benefit pedestrians and bicyclists.
Fox Farm Rd.	62	Poor conditions for bicyclists and pedestrians.	B, P	1	Stakeholder Interviews	
Worden Hill Rd.	63	Poor conditions for bicyclists and pedestrians.	B, P	1	Stakeholder Interviews	
Bald Peak Rd./Mountain Top Rd.	64	Safety concern due to sight distance problem, skewed intersection.	S	1	RIAC	
OR 99W/Riverbend Rd.	65	Potential safety problem for NB left turning vehicles – storage for only one vehicle if train is present.	S	1	County staff	Proposed county park to west will generate more traffic, worsening this problem.

* A = Access, M = Mobility, G = Geometric, O = Traffic Operations, Mnt = Maintenance, S = Safety, B = Bike, P = Pedestrian, T = Transit
** Number of comments received.

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MEMORANDUM

TO: Bill Gille, Yamhill County
John Phelan, Yamhill County
Terry Cole, ODOT Region 2

FROM: Bob Schulte, PTP
Julie Sosnovske, P.E.

DATE: March 28, 2013

SUBJECT: **YAMHILL COUNTY TRANSPORTATION SYSTEM PLAN** **P# 11086-04**
Technical Memorandum #4 – Future Transportation Conditions

This memo documents the analysis of future transportation conditions for the Yamhill County Transportation System Plan. The findings of the analysis will be used in the development of proposed improvements to address transportation needs within the county. The analysis was conducted for the future No Build scenario.

A 2035 forecast year was selected, consistent with the Transportation Planning Rule requirement that a 20-year planning horizon from the time of plan adoption must be used. The 2035 time frame is also consistent with the forecast year used in the Newberg-Dundee Bypass planning.

ROADWAYS

TRAFFIC FORECASTS

State Highways

ODOT's Analysis Procedures Manual (APM)[1] describes three main traffic forecasting methods. The historical trends method uses previous traffic volumes to estimate future volumes, based

[1] Oregon Department of Transportation, Analysis Procedures Manual, (2011).

on the assumption that the future growth trend will be similar to the historical trend. It is applied primarily in rural or small urban areas where significant growth is not anticipated. Trendline volumes are obtained from ODOT's Future Volume Table.[2]

The cumulative analysis method is generally used to forecast volumes for small urban areas that are growing at a fairly uniform rate and for areas where only minor changes are expected to take place. This method layers future background traffic and traffic from expected future development on existing traffic volumes to obtain an overall future traffic volume estimate. Application of this method is generally limited to small urban areas or subareas of larger regions because of the complexity of tracking traffic changes across larger areas.

Urban travel demand models use projected land use and transportation network data to estimate future travel demand. The data is obtained from many different sources, including census data, state employment data, origin-destination surveys, household travel surveys, traffic counts and field surveys. Models are the most sophisticated tool for forecasting future traffic volumes, but the data needs and development costs are high, so they are typically available only in urban areas where travel patterns are more complex.

For the state highway traffic forecasts, the trendline method was selected, because there is no travel forecasting model available for the study area and traffic volumes were anticipated to increase at a low rate over the planning period. The cumulative analysis method was not considered because the future development level in the unincorporated portion of Yamhill County is expected to be low.

Future State Highway Traffic Volumes

ODOT's 2030 Future Volume Table contains, for each highway segment, the most recent traffic count for the 2008 – 2010 period, as well as an estimated 2030 volume. The 2030 volumes are obtained from a travel demand model if a local model is available or derived using regression analysis of historical count data at the location. Because a travel forecasting model is not available for the unincorporated part of Yamhill County, the 2030 volumes in the Future Volume Table for state highway segments within the study area are based on regression analysis.

[2] Oregon Department of Transportation, Technical and Analysis Tools website, http://www.oregon.gov/ODOT/TD/TP/pages/tools.aspx, accessed September 7, 2012.

The traffic counts and 2030 volumes were used to calculate the average annual traffic growth rates shown in Table 1.

Table 1 – Summary of Growth Rates for State Highway Segments

State Highway	Range of Annual Growth Rates	Average
OR 47	1.43 – 2.16	1.68
OR 22	0.95 – 1.81	1.26
OR 18	1.75 – 2.77	2.51
OR 99W	0.37 – 2.54	1.52
OR 219	2.65 – 3.70	3.36
OR 221	1.86 – 2.84	2.31
OR 240	1.22 – 2.89	2.13
OR 153	0.81 – 2.39	1.72
OR 154	2.02 – 2.58	2.46
OR 233	1.78 – 1.94	1.87
OR 18B	1.63 – 1.74	1.70
Average		**1.94**

The segment growth rates were applied to the existing volumes to produce the forecasts of 2035 AADT and design hour volumes (DHVs) shown in Figures 1 and 2. For each highway, the segment volumes were compared for consistency to the volumes for the adjacent segments, and adjustments were made where necessary.

The only exception to this approach was for the OR 99W segments between Newberg and Dundee. To maintain consistency with the TSPs currently being developed for Newberg and Dundee, the future volumes for these segments were obtained from the TSP's.

As for the highway segments, the intersection volume forecasts were developed by applying the growth factors to the existing intersection approach volumes.

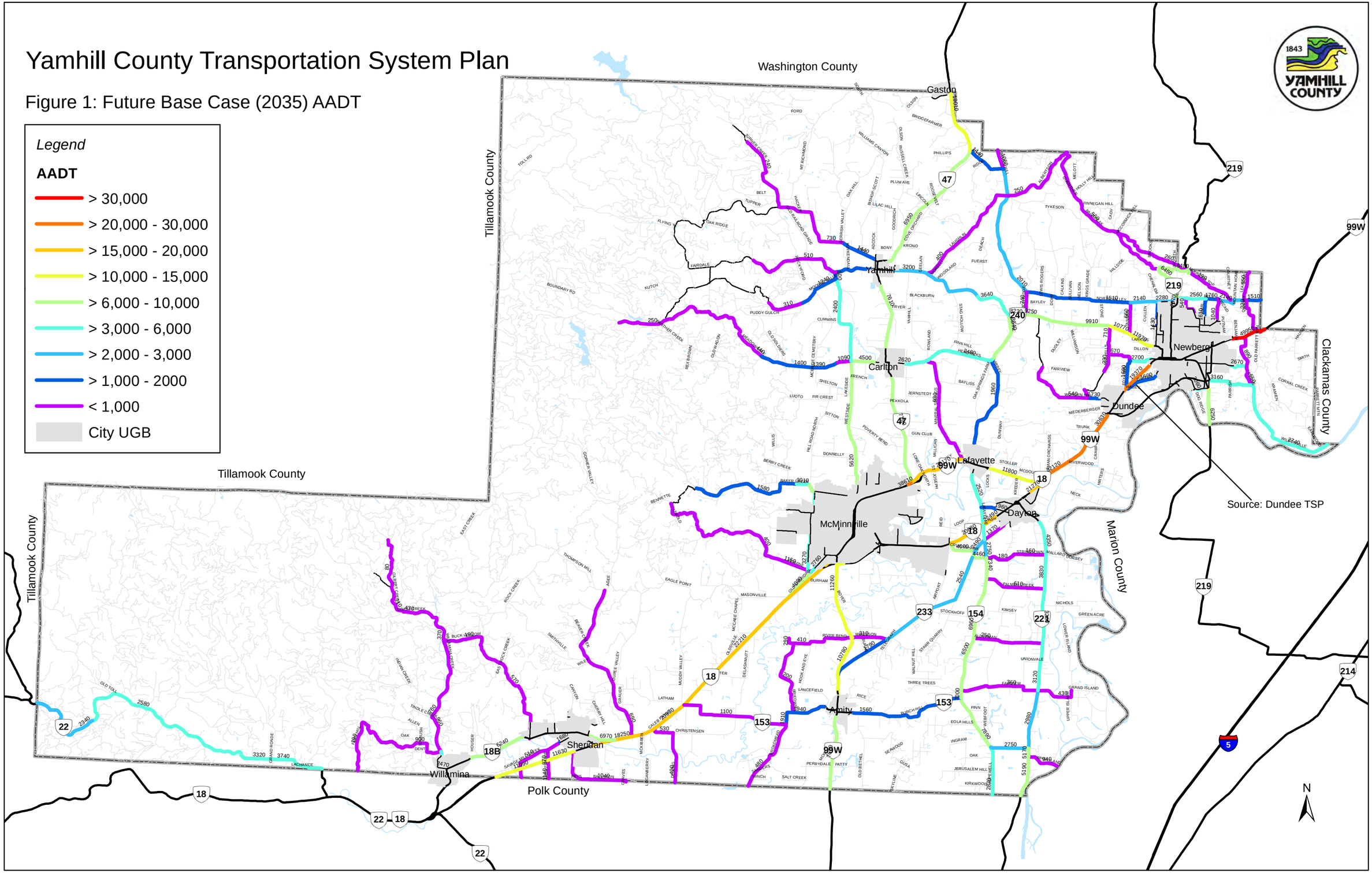
Yamhill County Transportation System Plan

Figure 1: Future Base Case (2035) AADT

Legend

AADT

- > 30,000
- > 20,000 - 30,000
- > 15,000 - 20,000
- > 10,000 - 15,000
- > 6,000 - 10,000
- > 3,000 - 6,000
- > 2,000 - 3,000
- > 1,000 - 2000
- < 1,000
- City UGB



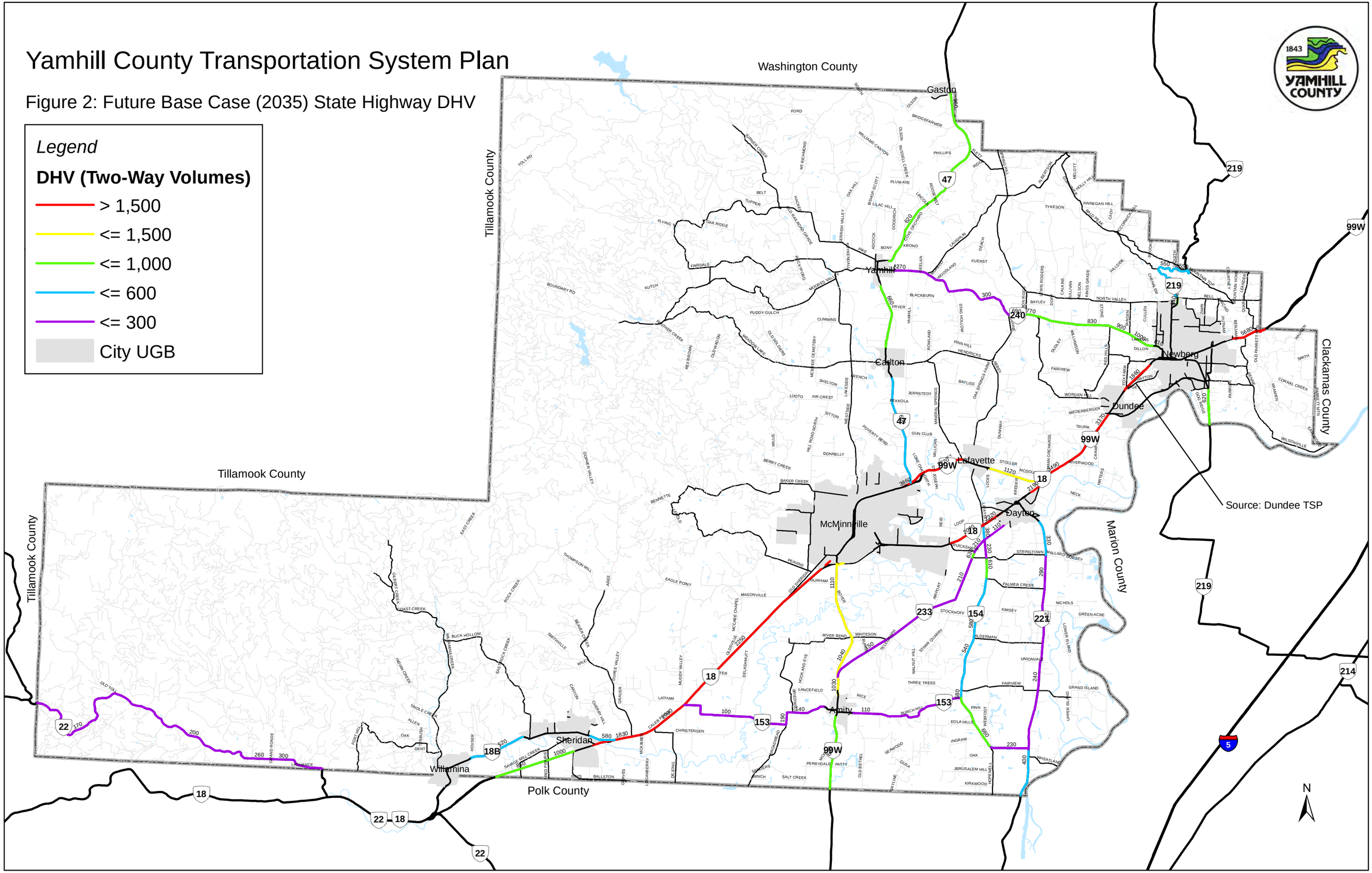
Yamhill County Transportation System Plan

Figure 2: Future Base Case (2035) State Highway DHV

Legend

DHV (Two-Way Volumes)

- > 1,500
- <= 1,500
- <= 1,000
- <= 600
- <= 300
- City UGB



County Roads

Similar to state highways, historical counts were used as the basis for forecasting county road traffic volumes. Limitations of the count data, however, required that a different approach be taken. The county's count database covers the period from 1999 to 2011. Twenty-four hour and 48-hour counts are collected for selected roads each year. Within the database, there are generally three to four counts available for each road. For a particular road, however, the interval between count years can vary, as can the count location. Because of this variation, trendline or average growth rates could not be calculated for county roads or individual county road segments.

Therefore, for county roads having counts for multiple years at the same location, average linear growth rates were calculated. The average growth rates were grouped across roads in different ways, such as by functional classification and volume range. For each group or category, such as major collectors, the average growth rates were averaged, with the resulting "average of the averages" used as an average growth factor in calculating future traffic volumes for all county road segments within that category.

This method did not produce average growth factors that were satisfactory, however. In some cases, there were too few count locations within a category or the locations were limited to a small number of roads, so that the average growth factor was not representative of all roads within the category. In other cases, there was significant variation between the average growth rates for the individual locations, which could also result in an average growth factor that was representative of the category.

Therefore, another method was applied, in which the average growth rates for all county roads were grouped by the beginning and ending count years. Groups were defined for all unique combinations of beginning and ending count years. For example, if the counts for a particular road location were for the years 2003 and 2009, an average linear growth rate was calculated for that period and added to the group of locations for the same period. Once this had been done for all count locations, an average growth rate was calculated for each group based on the rates for the individual locations.

The average growth rates for the groups were summarized in a table showing, for each group, the beginning and ending year, average growth rate, number of count locations in the group, and number of years covered by the time period. Various methods were considered for

developing an overall growth factor based on the average growth rates for each group. It was decided that this factor should be calculated as a weighted average of the group rates, with the number of count locations and number of years for the groups serving as the weights.

Only those groups with a minimum of five count locations and covering a period of at least five years were included in the calculation. Also, examination of the count data indicated that many of the counts conducted in 2008 were significantly lower than the counts for the other years, which was likely the related to the economic downturn during that year. Therefore, groups with a beginning or ending count year of 2008 were not included in the calculation.

Using this approach, an overall annual growth factor of 0.61% was obtained. This factor was applied to the volumes from the existing conditions analysis to produce 2035 volume estimates for county roadways. The estimated 2035 AADT and P.M. peak hour volumes are shown in Figures 1 and 3.

Reasonableness Checks of County Traffic Forecasts

Because traffic volumes on county roads are influenced much more by local land uses than state highways, which carry a higher percentage of external traffic, the estimated county traffic growth factor was compared to information on future land use characteristics. This information was available from the following sources:

- Population forecasts from Portland State University
- Employment forecasts from the Oregon Department of Economic Analysis (OEA)
- Yamhill County Agri-Business Economic and Community Development Plan
- Yamhill County Planning Department

Portland State University's Population Research Center recently produced long-term population forecasts for the county, its ten incorporated cities, and the unincorporated portion of the county.[3] The forecast horizon extended 24 years from 2011 to 2035, with forecasts produced in five-year intervals between 2010 and 2035. A summary of the forecasts is shown in Table 2.

[3] Portland State University Population Research Center, Population Forecasts for Yamhill County, Its Cities and Unincorporated Area 2011-2035, (2012).

Yamhill County Transportation System Plan

Figure 3: Future County Road Base Case (2035) Weekday P.M. Peak Hour Volumes

Legend

Peak Hour Volume (Two-Way)

- > 300
- > 200 - 300
- > 100 - 200
- <= 100
- City UGB

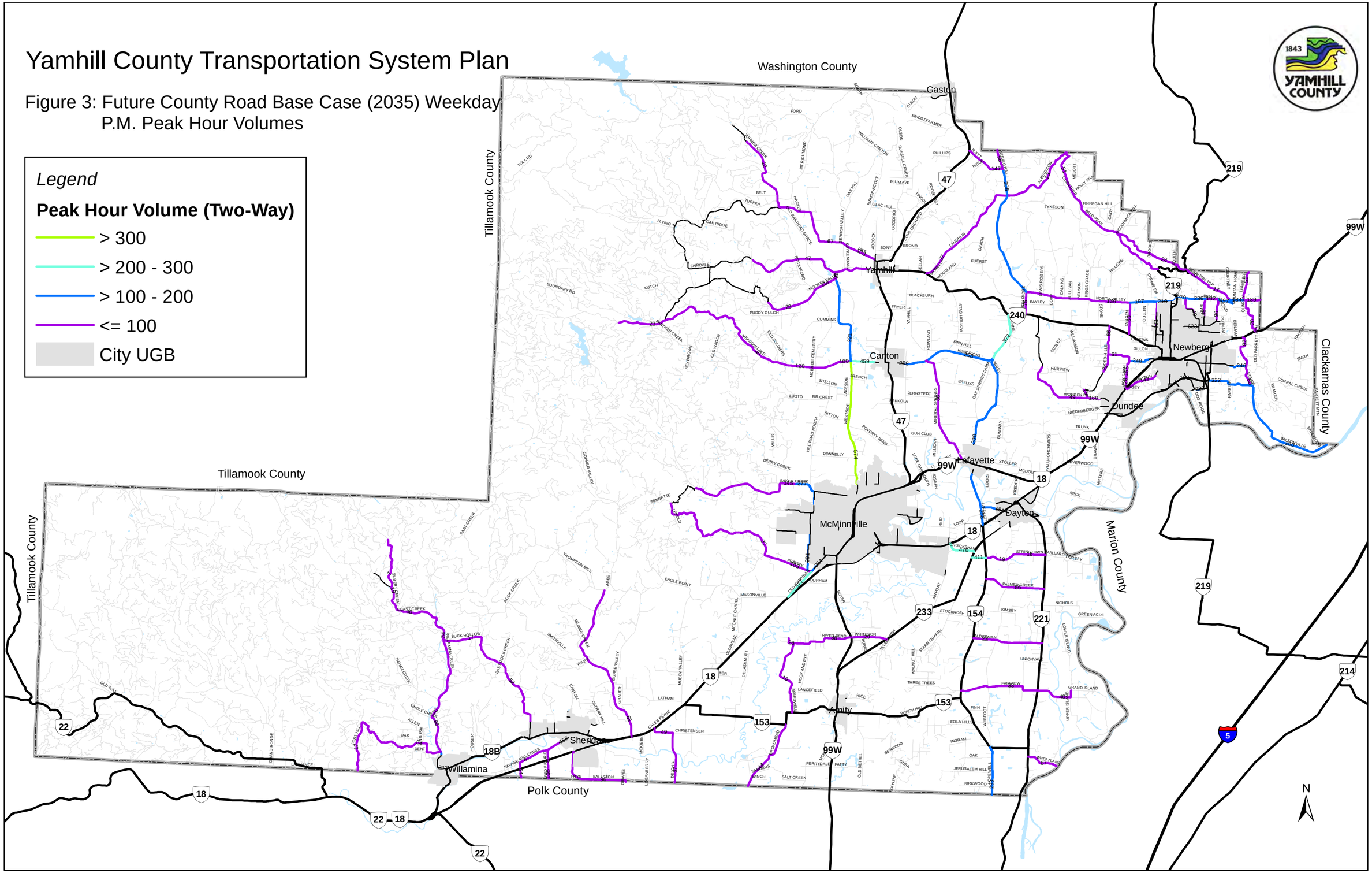


Table 2 – Yamhill County Population Forecasts
Portland State University Population Research Center

Location	2011	2035	Growth	Relative Growth	Annual Growth	Annual Rate
McMinnville	32,808	49,983	17,175	52.4%	716	2.1%
Newberg	22,730	38,490	15,760	69.3%	657	2.8%
Amity	1,635	2,097	462	28.3%	19	1.1%
Carlton	2,036	2,890	854	41.9%	36	1.7%
Dayton	2,731	3,765	1,034	37.9%	43	1.5%
Dundee	3,210	4,985	1,775	55.3%	74	2.2%
Lafayette	3,745	5,797	2,052	54.8%	86	2.2%
Sheridan	6,228	8,657	2,429	39.0%	101	1.6%
Willamina (Yamhill County portion)	1,180	1,241	61	5.2%	3	0.2%
Yamhill	1,037	1,403	366	35.3%	15	1.4%
Unincorp. Yamhill County	22,510	23,338	828	3.7%	35	0.1%
Total County	99,850	142,646	42,796	42.9%	1,783	1.7%

While the population of the county overall is expected to grow at about 1.7% annually, growth in the unincorporated area will be much slower, at closer to 0.1% annually. This is related to Oregon land use law, which restricts most development to areas within urban growth boundaries (UGBs). Population growth in the urban areas will, however, contribute to traffic growth on county roads in the rural areas.

The OEA is responsible for developing economic and employment forecasts for the State of Oregon. For this study, a request was made to the OEA for an employment forecast for Yamhill County. The OEA applied statewide growth projections to the current industry structure and historic growth to develop unofficial countywide employment forecasts by industry sector. The forecasts indicated that average annual employment growth will range between 1.16% to 2.01% for the various sectors between 2012 and 2035.

The Yamhill County Agri-Business Economic and Community Development Plan[4] examined the current status and future of the county's agriculture and tourism industries. The study found that infrastructure is a limitation to growth in these industries, including the water, sewer, and transportation systems, with water being the biggest issue. OR 99W was mentioned as a concern for the transportation system. Changes in the current zoning will also be needed to allow development to occur, particularly in the rural areas. Specific growth forecasts were not included in the study.

Yamhill County Planning Department staff indicated that they do not expect significant growth in the rural/unincorporated portion of the county.[5] Residential and employment development are generally restricted to urban areas. While there has been the development of wineries in the rural areas of the county and there is the capacity for this to continue, there is no way to predict how much of this activity will occur or where. Therefore, there are no specific future growth forecasts for the winery industry or similar land uses.

Based on the information from these sources, it appears that the future rate of development in the rural areas of the county will be slow. Population in the unincorporated area is expected to increase by only 0.1% annually. While the predicted total county employment growth rate is higher, most of this growth will occur within the cities. Infrastructure will also be a limitation to development in the rural areas. Therefore, the relatively low estimated traffic growth factor of 0.61% per year for rural county roads is consistent with this outlook.

NEEDS

Future roadway needs were examined in the areas of mobility, traffic operations, safety, and geometrics for the same facilities included in the existing conditions analysis.

Mobility Needs

Future mobility needs were identified by comparing volume-to-capacity (v/c) ratio estimates for roadway segments and intersections to the applicable targets. The targets for state highways

[4] Yamhill County, Yamhill County Agri-Business Economic and Community Development Plan, (2009).

[5] Conversation with Ken Friday, Yamhill County Planning Department on September 6, 2012.

within the study area are shown in Table 3. They reflect the revisions to the Oregon Highway Plan (OHP) Policy 1F[6] that went into effect in January, 2012.

Table 3 – State Highway Mobility Targets (Volume-to-Capacity Ratio)

Area/Highway Category	Segments and Signalized Intersections	Unsignalized Intersections*
Outside Urban Growth Boundary/Rural Lands		
Statewide Expressways (OR 99W, OR 18)	0.70	0.75
Regional Highways (OR 22, OR 47, OR 99W, OR 154)	0.70	0.75
District Highways (OR 18B, OR 153**, OR 219, OR 221, OR 233, OR 240)	0.75	0.75

Source: Table 6 of the OHP Policy 1F Revisions, adopted by the Oregon Transportation Commission on December 21, 2011.
* For unsignalized intersections, the v/c ratio target applies to the controlled approaches.
** The portion of OR 153 south of OR 154 is a Regional Highway, for which the applicable mobility targets were used.

For county roadways, a v/c ratio target of 0.75 was applied for both roadway segments and intersections.[7]

Segment Mobility

Segment capacity analysis was conducted for all state highways and county roads classified as a major collector or higher.[8] V/C ratios were calculated using the estimated 2035 DHVs for state highways and the 2035 average weekday peak hour volume estimates for county roads. The

[6] Oregon Department of Transportation, OHP Policy 1F Revisions, (2011).
[7] Based on discussions with county staff, it was decided that the state highway mobility targets should be used for county roadways. In this regard, it was assumed that county roadways are most similar to ODOT's District level highways.
[8] The analysis was not performed for roadways below this classification because it was assumed that the low volumes for these roadways would not result in mobility needs.

analysis was performed according to the methodology for two-lane rural highways outlined in the 2000 Highway Capacity Manual (HCM2000)[9] and the APM.

Figure 4 shows the estimated v/c ratios for state highways and county roads within the study area. Figure 5 shows the segments not meeting the mobility standards. As can be seen, a majority of the segments operate within the mobility standard. State highway segments having v/c ratios exceeding the mobility target are:

- OR 99W east of Newberg
- OR 99W between Dundee and OR 18
- OR 99W between OR 47 and McMinnville
- OR 18 between Dayton and OR 154
- OR 18 between McMinnville and OR 153

Future mobility for state highway segments is summarized in Table 4. The percentage of

Table 4 – Future Mobility Summary - State Highway Segments

State Highway	V/C Target	Total Miles	% Deficient
OR 18	0.70	16.2	47%
OR 18B	0.75	3.0	0%
OR 22	0.70	12.9	0%
OR 47	0.70	14.3	0%
OR 99W	0.70	17.7	25%
OR 153 (west of OR 154)	0.75	9.9	0%
OR 153 (south of OR 154)	0.70	3.4	0%
OR 154	0.70	6.3	0%
OR 219	0.75	4.5	0%
OR 221 (north of OR 153)	0.75	8.2	0%
OR 221 (south of OR 153)	0.70	1.7	0%
OR 233	0.75	8.2	0%
OR 240	0.75	10.4	0%
Total		**116.7**	**10%**

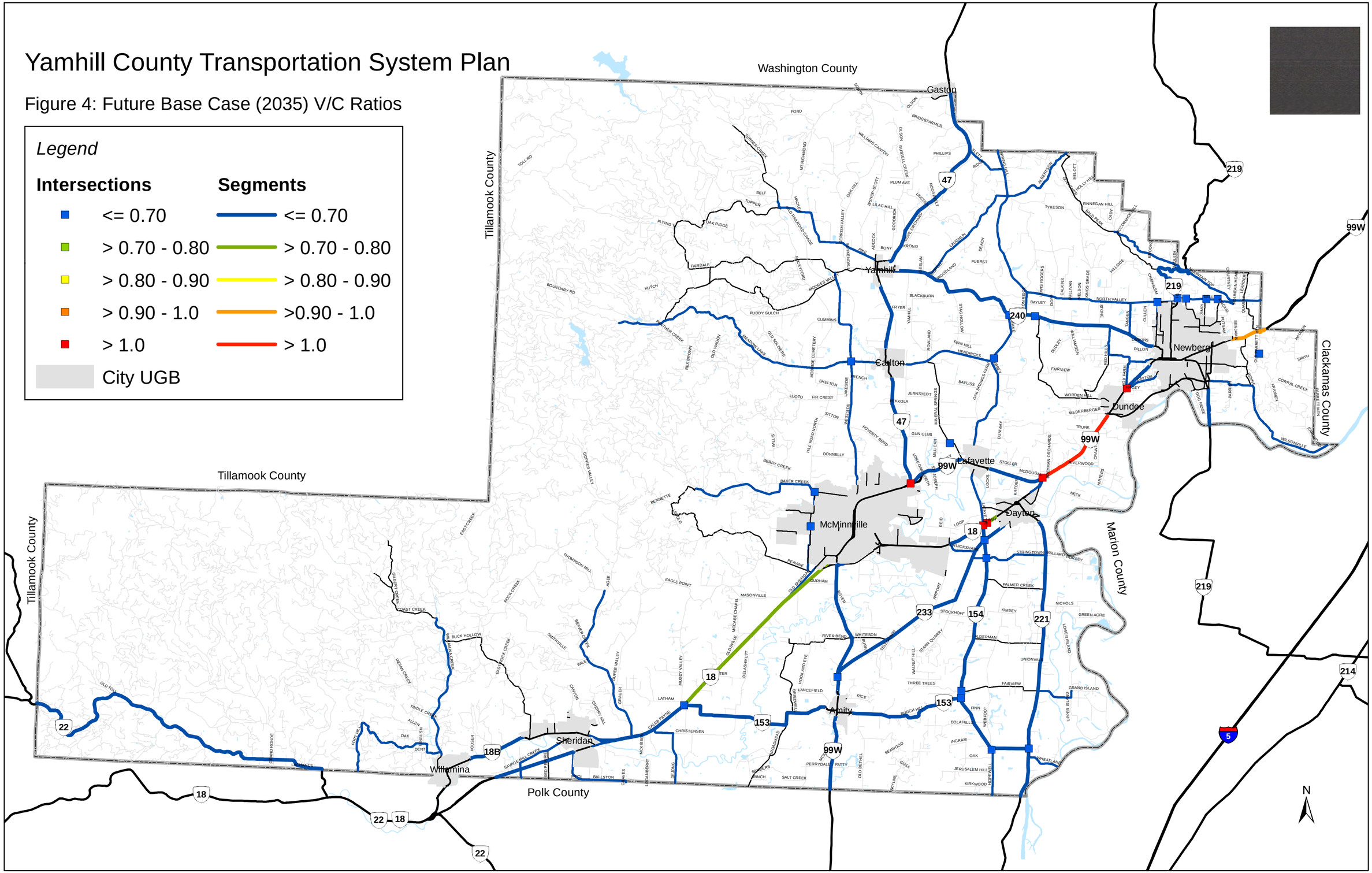
[9] Transportation Research Board, Highway Capacity Manual, Special Report 209, (2000).

Yamhill County Transportation System Plan

Figure 4: Future Base Case (2035) V/C Ratios

Legend

Intersections	Segments
<= 0.70	<= 0.70
> 0.70 - 0.80	> 0.70 - 0.80
> 0.80 - 0.90	> 0.80 - 0.90
> 0.90 - 1.0	>0.90 - 1.0
> 1.0	> 1.0
City UGB	

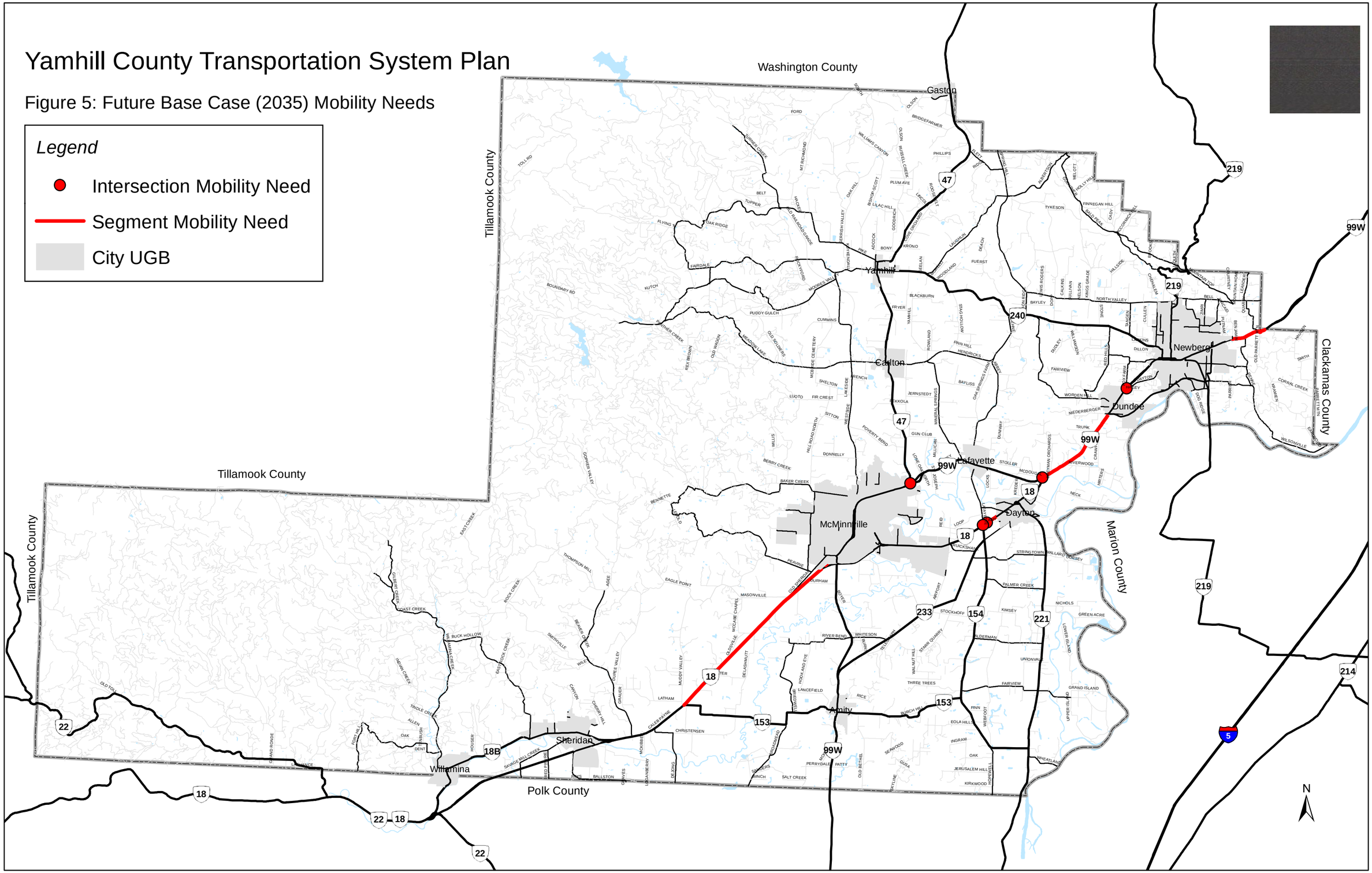


Yamhill County Transportation System Plan

Figure 5: Future Base Case (2035) Mobility Needs

Legend

- Intersection Mobility Need
- Segment Mobility Need
- City UGB



deficient miles along OR 18 increases from 0% for existing conditions to 47% for 2035, but decreases from 27% to 25% along OR 99W. The reason for the decrease along OR 99W is that the mobility target is met for the segments between Newberg and Dundee with the addition of the bypass. None of the remaining state highway segments have mobility deficiencies. Compared to existing conditions, this results in an increase in the overall percentage of deficient miles from 4% to 10%.

Consistent with the relatively low traffic growth for county roads, all county roadway segments will operate well within the mobility standard.

Intersection Mobility

Capacity analysis was conducted for all intersections of state highways, as well as the intersections with suspected level of service problems identified for the existing conditions analysis. The intersection v/c ratio estimates (see Figure 4) were developed using the HCM2000 methodology for unsignalized intersections.

As shown in Table 5 and Figure 5, all of the intersections meet the mobility targets, with the following exceptions:

- OR 18/ OR 99W/McDougall Rd.
- OR 18/Ash Rd.
- OR 18/Lafayette Hwy.
- OR 47/OR 99W
- OR 99W/Fox Farm Rd.

The reported intersection v/c ratio is for the worst movement, which is typically the left-turn movement from the minor road. Thus, while the v/c ratios for the worst movements at the four intersections listed above do not meet the target, the v/c ratios for the mainline (state highway) turning movements are within the target. The only exception to this is the intersection of OR 99W/McDougall Rd./OR 18, where the v/c ratio for the westbound left-turn movement on OR 99W is 0.82.

Table 5 – Future Mobility Summary – Intersections

Intersection	Mobility Target (Major/Minor V/C Ratio)	V/C Ratio* (Major)	V/C Ratio* (Minor)
NW Hill Rd./SW 2nd St.	0.75/0.75	0.35	0.05
NW Hill Rd./NW Baker Creek Rd.	0.75/0.75	0.31	0.13
NW Westside Rd./NW Meadow Lake Rd.	0.75/0.75	0.38	0.31
NE Abbey Rd./NE Hendricks Rd.	0.75/0.75	0.27	0.13
OR 240/NE Kuehne Rd.	0.75/0.75	0.45	0.31
N. Aspen Way/NE Bell Rd.	0.75/0.75	0.06	0.02
OR 18/OR 99W/McDougall Rd.	0.70/0.75	**0.82**	**>1.0**
OR 18/SE Ash Rd.	0.70/0.75	0.01	**>1.0**
OR 18/SE Lafayette Hwy.	0.70/0.70	0.54	**>1.0**
OR 154/OR 233	0.70/0.75	0.35	0.21
OR 154/Stringtown Rd.	0.70/0.75	0.21	0.30
OR 153/Hopewell Rd.	0.70/0.75	0.33	0.00
OR 154/SE Fairview Rd.	0.70/0.75	0.02	0.01
OR 240/Worden Hill Rd.	0.75/0.75	0.01	0.00
Zimri Rd./Bell Rd.	0.75/0.75	0.06	0.10
Springbrook Rd./Bell Rd.	0.75/0.75	0.04	0.03
Parrett Mountain Rd./Schaad Rd.	0.75/0.75	0.01	0.00
Gun Club Rd./Mineral Springs Rd.	0.75/0.75	0.04	0.01
Chehalem Dr./North Valley Rd.	0.75/0.75	0.10	0.01
OR 18/OR 153	0.70/0.75	0.58	0.26
OR 99W/OR 233	0.70/0.75	0.38	0.54
OR 47/OR 99W	0.70/0.70	0.44	**>1.0**
OR 154/OR 153	0.70/0.70	0.26	0.15
OR 221/OR 153	0.75/0.75	0.18	0.10
OR 99W/Fox Farm Rd.	0.70/0.75	0.66	**>1.0**

* V/C ratio for the worst movement is reported. Bold/shaded cells indicate intersections not meeting the mobility target.

Traffic Operations Needs

As for existing conditions, turn lane needs were determined for unsignalized intersections using the turn lane criteria contained in the APM.[10] The volume criterion for left-turn lanes is based on the hourly opposing plus advancing volume per lane, hourly turning volume, and posted speed limit at an intersection. Thus, as the opposing plus advancing volume and/or turning volume increases, or as the speed limit increases, the volume threshold at which a turn lane should be considered decreases. The volume criterion for right-turn lanes is based on the hourly approaching volume in the outside lane (through plus right-turn volume), hourly turning volume, and speed limit. As any of these factors increases, the volume threshold for a right-turn lane decreases. Table 6 shows the intersections where future left-turn lane needs were found. The left-turn volume is listed along with the threshold for which a turn lane would be warranted based on the advancing/opposing traffic volumes. Table 7 shows similar data for intersections where future right-turn lane needs were found.

Table 6 – Future Left-Turn Lane Needs

Roadway	Intersection	Direction	Left-Turn Volume	Left-Turn Volume Threshold
State Highways				
OR 240	Kuehne Rd.	WB	614	11
OR 219	Bell Rd.	NB	40	13
OR 219	Bell Rd.	SB	50	12
OR 154	Stringtown Rd.	NB	248	13
OR 154	Fairview Rd.	NB	19	10
OR 154	Fairview Rd.	SB	10	10
OR 99W	OR 47	EB	334	10
OR 154	OR 153	NB	49	10
OR 221	OR 153	NB	123	17
OR 99W	Fox Farm Rd.	NB	105	46
County Roadways				
Hill Rd.	2nd St.	SB	63	23
Hill Rd.	Baker Creek Rd.	WB	172	19
Kuehne Rd.	Hendricks Rd.	SB	241	15

[10] Oregon Department of Transportation, Analysis Procedures Manual, (2011).

Table 7 – Future Right-Turn Lane Needs

Roadway	Intersection	Direction	Right Turn Volume	Right-Turn Volume Threshold
State Highways				
OR 18	Ash Rd.	EB	83	0
OR 18	OR 154	NB	95	87
OR 18	OR 154	WB	22	0
OR 18	OR 154	EB	18	0
OR 153	Hopewell Rd.	EB	252	28
OR 18	OR 153	NB	20	20
OR 18	OR 153	SB	31	20
OR 99W	OR 47	WB	49	20
OR 99W	Fox Farm Rd.	SB	195	85
OR 99W	Fox Farm Rd.	EB	60	0

Table 8 summarizes intersections where either a left-turn or a right-turn lane would be warranted based on future volumes and posted speeds. The results of the analysis are shown in Figure 6. A majority of the future turn lane needs are on state highways.

Table 8 – Future Turn Lane Need Summary

Intersection	Northbound		Southbound		Eastbound		Westbound	
	LT	RT	LT	RT	LT	RT	LT	RT
State Highways								
OR 240/Kuehne Rd.							√	
OR 219/Bell Rd.	√		√					
OR 18/Ash Rd.						√		
OR 154/Stringtown Rd.	√					√		
OR 153/Hopewell Rd.						√		
OR 99W/OR 47					√			√
OR 154/OR 153	√							
OR 221/OR 153	√					√		
OR 154/Fairview Rd.	√		√					
OR 18/OR 154		√				√		√

Intersection	Northbound		Southbound		Eastbound		Westbound	
	LT	RT	LT	RT	LT	RT	LT	RT
OR 18/OR 153		√		√				
OR 99W/Fox Farm Rd.	√			√		√		
County Roadways								
Kuehne Rd./Hendricks Rd.			√					
Hill Rd./2nd St.			√					
Hill Rd./Baker Creek Rd.							√	

Safety Needs

The Highway Safety Manual (HSM)[11] contains Crash Modification Factors (CMFs) which can be used to estimate future crash rates. The CMFs are used to adjust estimates of average crash frequency for the effects of specific geometric design and traffic control features for local sites. Some of the CMFs are based on traffic volume. Therefore, to estimate the effect of higher future traffic volumes on crash rates, the CMFs can be applied using the following procedure:

- Calculate CMF values for the base year and future year, using existing and future traffic volumes for the CMFs that are volume-based.
- Calculate composite CMF values for the base and future years by multiplying the individual CMF values.
- Estimate future crash rate by multiplying the ratio of the future year composite CMF to the base year composite CMF by the base year crash rate. Any resulting difference between the base year and future year crash rates is due to the volume differences.

CMFs are available for both roadway segments and intersections.

[11] American Association of State Highway and Transportation Officials, Highway Safety Manual, (2010).

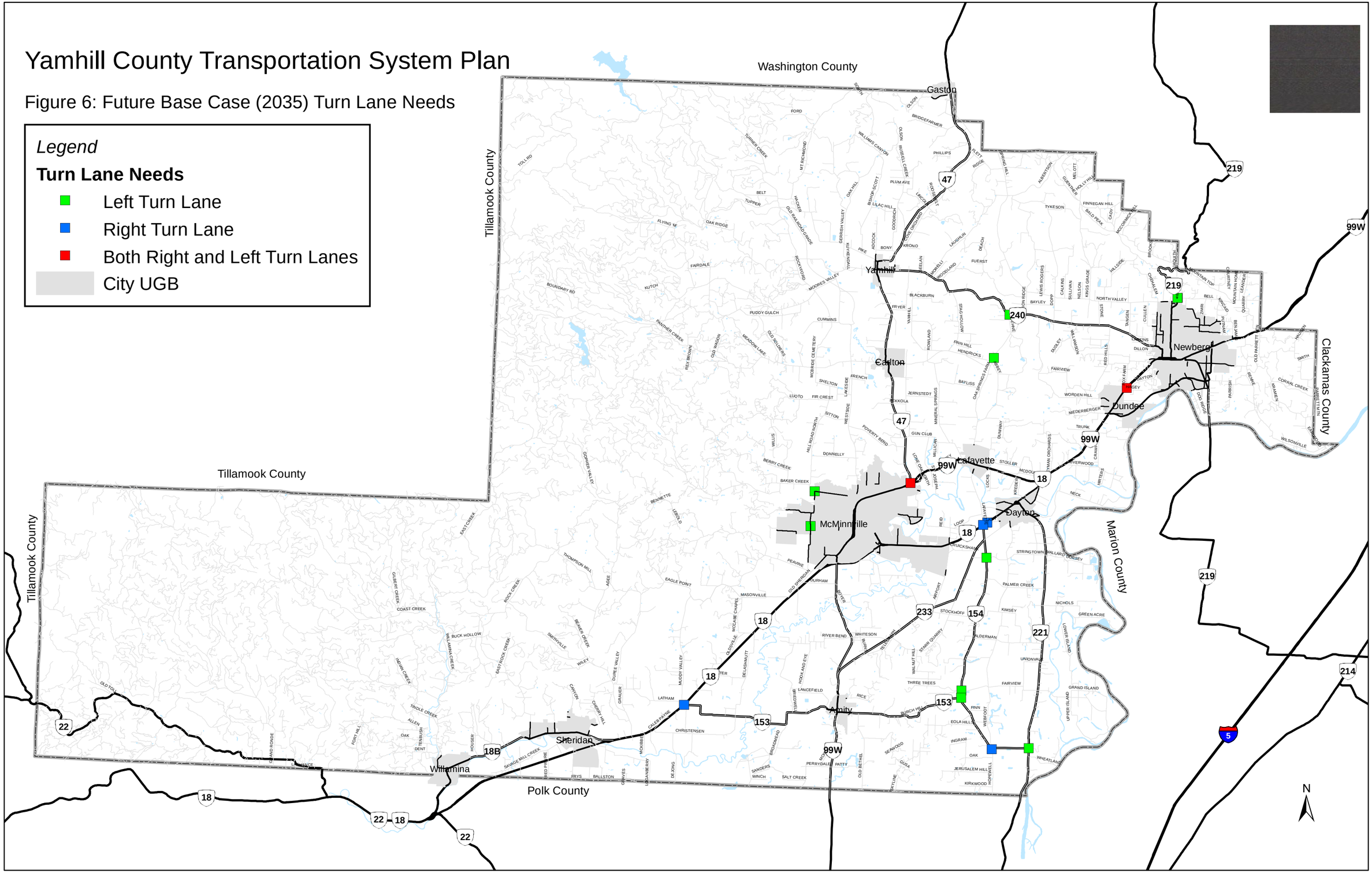
Yamhill County Transportation System Plan

Figure 6: Future Base Case (2035) Turn Lane Needs

Legend

Turn Lane Needs

- Left Turn Lane
- Right Turn Lane
- Both Right and Left Turn Lanes
- City UGB



Use of this procedure to estimate future crash rates for the seven locations examined in the existing conditions analysis was investigated. These locations are:

- Abbey Rd./Hendricks Rd. intersection
- Stringtown Rd. between OR 154 and OR 221
- Worden Hill Rd. from OR 240 to the beginning of pavement
- OR 99W/OR 18/McDougall Rd. intersection
- OR 18 between OR 154/Lafayette Hwy. and Ash Rd.
- OR 18/SW Red Prairie Rd. intersection
- OR 99W/OR 47 intersection

For the roadway segments, the volume-based CMFs for which data were available were the lane width CMF and shoulder width CMF. The CMF values for both of these geometric features do not vary below 400 vehicles per day (vpd) or above 2,000 vpd. The existing and future volumes for the Stringtown Rd. segment between OR 154 and OR 221 are below 400 vpd. Therefore, there would be no difference between the base year and future year composite CMFs for this segment. The ratio of the composite CMFs would be 1.0, with no change in the estimated future crash rate compared to the base year rate based on these factors. Similarly for the OR 18 segment between OR 154/Lafayette Hwy. and Ash Rd., the existing and future year volumes are above 2,000 vpd, so that the ratio of the composite CMFs would be 1.0, with no change in the estimated future crash rate.

The segment on Worden Hill Rd. between OR 240 and the beginning of pavement is gravel, so there are no defined lane or shoulder widths. Therefore, the lane and shoulder width CMFs could not be applied for this segment.

There are no volume-based CMFs for intersections, so the future crash rate estimation procedure could not be applied for the intersections.

Geometric Needs

Future geometric needs for state highways may differ from existing needs depending on the level of future traffic volumes. Such a difference may occur where an existing geometric feature is adequate for lower volumes, but falls below the standard for higher future volumes.

Potential volume-based differences for geometrics were investigated for lane and shoulder widths. Based on the standards in the Highway Design Manual,[12] future lane width needs were identified at the following locations where there are no existing needs:

- OR 219 – Yamhill County line to North Valley Rd. (M.P. 15.61 – M.P. 17.92)
- OR 153 – east of OR 18 to west of Deer Creek Flats Rd. (M.P. 0.0 – M.P. 0.76)
- OR 153 – east of Deer Creek Flats Rd. to Yamhill River (M.P. 0.97 – M.P. 2.84)
- OR 153 – Yamhill River to Broadmead Rd. (M.P. 3.35 – M.P. 3.98)

The lane width need would apply to both sides of the highway at each of these locations.

There would no differences in shoulder width needs along state highways due to the higher future volumes.

The lane width and shoulder width standards for county roads are based strictly on functional classification and do not consider traffic volume. Therefore, future lane and shoulder width needs for county roads would be the same as existing needs.

Figure 7 shows the future geometric needs on both state highways and county roads.

BICYCLE AND PEDESTRIAN

Because traffic volumes will remain low on most county roads and some state highways, shared roadways will continue to be adequate for bicycle use along these facilities. For roadways with existing bicycle needs, the level of need will become higher as traffic volumes increase. These are roadways with higher bicycle and vehicle volumes and:

- The shoulder width standard is not met; or
- The shoulder is not paved.

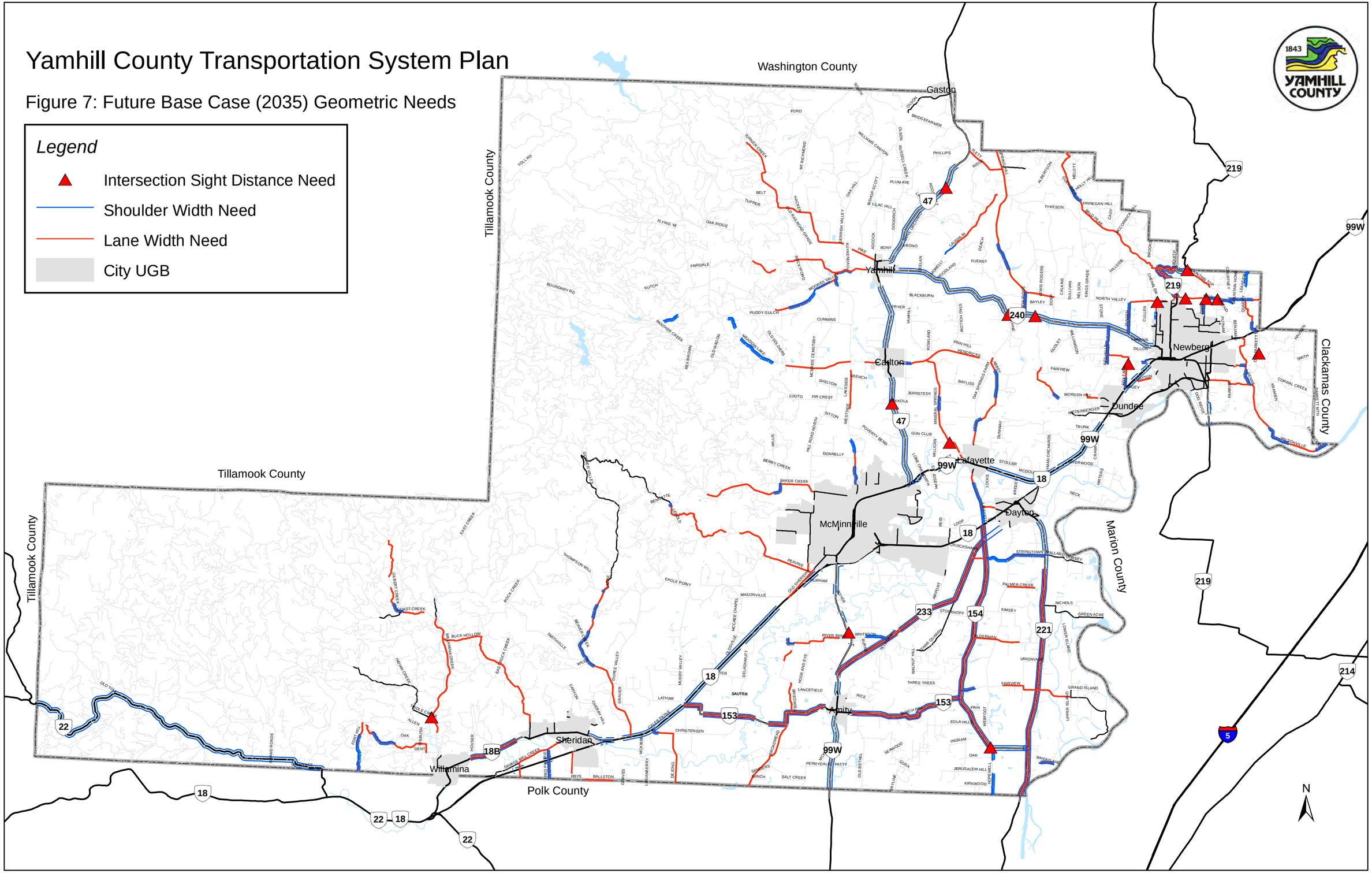
[12] Oregon Department of Transportation, Highway Design Manual, (2003).

Yamhill County Transportation System Plan

Figure 7: Future Base Case (2035) Geometric Needs

Legend

- Intersection Sight Distance Need
- Shoulder Width Need
- Lane Width Need
- City UGB



The locations identified in the existing conditions analysis meeting these criteria were:

- OR 47
- OR 99W
- OR 154/Lafayette Hwy.
- Westside Rd.
- Old Sheridan Rd.

Due to higher traffic volumes, the level of need will also be higher at those locations with pedestrian needs identified in the existing conditions analysis. These are largely the same as the locations with bicycle needs, in addition to OR 18B between Sheridan and Willamina.

YAMHELAS WESTSIDER TRAIL

Yamhill County Parks Department has been working with the Friends of Yamhelas Westsider Trail, citizens, and local businesses on a proposal to acquire the abandoned Union Pacific Railroad right-of-way for the Yamhelas Westsider Trail. The trail will eventually run from OR 99W through the cities of Carlton, Yamhill, and Gaston, linking with the state highway bicycle trail to Forest Grove and Hagg Lake (see Figure 8). Access will be available from intersecting county roads and nearby OR 47.

The trail will connect urban neighborhoods to regional open spaces, serving pedestrians, joggers, equestrians and bicyclists. The Friends of Yamhelas Westsider Trail has been awarded $1.4 million in grant money by the Oregon Transportation Commission – enough to pay for almost 13.5 miles of the 17 miles of Union Pacific right-of-way needed.[13]

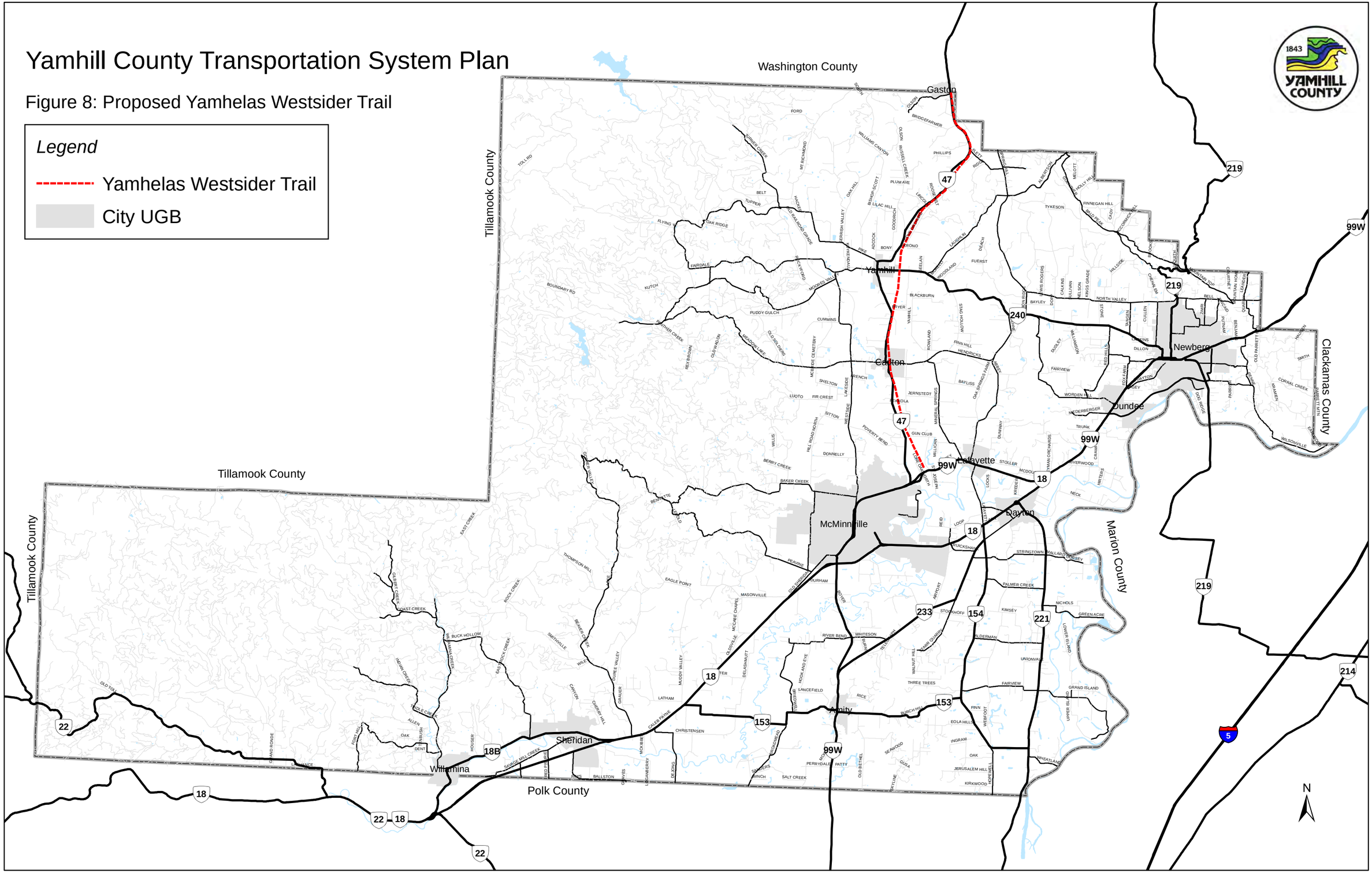
[13] www.yamhelaswestsidetrail.org website, accessed July 24, 2013.

Yamhill County Transportation System Plan

Figure 8: Proposed Yamhelas Westsider Trail

Legend

- Yamhelas Westsider Trail
- City UGB



CORRIDOR HEALTH

The Corridor Health Tool was used to calculate a future corridor health score for each corridor segment by applying the same set of factors, weights, and formulas used for the existing conditions analysis. The factors correspond to the same areas of need described in the previous sections, i.e., mobility, traffic operations, safety, geometrics, and bicycle and pedestrian facilities.

The sum of the weights for the factors is equal to 100. The formulas were set up to produce scores for each factor ranging from zero to one, with a score of one representing "perfect" health and a score of zero indicating very poor conditions or performance. The weights and formulas for each factor are shown in Table 9.

Table 9 – Corridor Health Score Weights and Formulas

Factor	Weight	Scoring Formula
Safety	35	=0.5/X if X $\geq$ 0.5; else 1 Where: X = 0.7*(Fatal +Injury Crash Rate for Segment/ Average for Facility Category) + 0.3*(Total Crash Rate for Segment/ Average for Facility Category)
Traffic Operations	15	=1-min(Turn Lane Need, Max. Turn Lane Need)/ Max. Turn Lane Need*
Geometrics	20	=0.2*min(Lane Width/Lane Width Standard,1)+0.8*min(Shoulder Width/Shoulder Width Standard,1)
Bicycle/Pedestrian Facilities	15	=(% of Segment with Adequate Bicycle/Pedestrian Facilities)/100**
Mobility	15	=min((1-VC)/(1-VC Standard),1)

* Turn lane need is the number of turn lanes (left-turn and right-turn) needed per segment. Since segment endpoints were defined by intersections with minor collector roadways or above, a value of four was assumed for the maximum turn lane need (i.e., the need for a left-turn lane and right-turn lane at each end of the segment).

** Bicycle/pedestrian facilities were considered to be adequate if the shoulder width standard was met.

The factor scores were multiplied by the weights to produce an overall corridor health score for each segment ranging between 0 and 100, with 100 representing the best score attainable and 0 being the worst score.

Results

The segments were assigned to good, fair, and poor categories of corridor health based on the scores. The scores corresponding to each category are:

- Good – 75 – 100
- Fair – 50 – 74
- Poor - < 50

The future corridor health category for each state highway and county roadway segment is shown Figure 9. The percentages of state highway mileage by corridor health category are presented in Table 10.

Table 10 – Future Corridor Health – State Highways

State Highway	Corridor Health							
	Good		Fair		Poor		Total	
	Miles	%	Miles	%	Miles	%	Miles	%
OR 18	10.3	64%	5.9	36%	0	0%	16.2	100%
OR 18B	2.0	67%	0	0%	1.0	33%	3.0	100%
OR 22	0	0%	2.9	22%	10.0	78%	12.9	100%
OR 47	3.1	22%	7.3	51%	3.9	27%	14.3	100%
OR 99W	10.5	59%	7.2	41%	0	0%	17.7	100%
OR 153	0	0%	7.4	56%	5.9	44%	13.3	100%
OR 154	0	0%	2.4	38%	3.9	62%	6.3	100%
OR 219	1.5	33%	0.7	16%	2.3	51%	4.5	100%
OR 221	0	0%	6.1	62%	3.8	38%	9.9	100%
OR 233	2.3	28%	4.4	54%	1.5	18%	8.2	100%
OR 240	1.2	12%	4.0	38%	5.2	50%	10.4	100%
Total	30.9	27%	48.3	41%	37.5	32%	116.7	100%

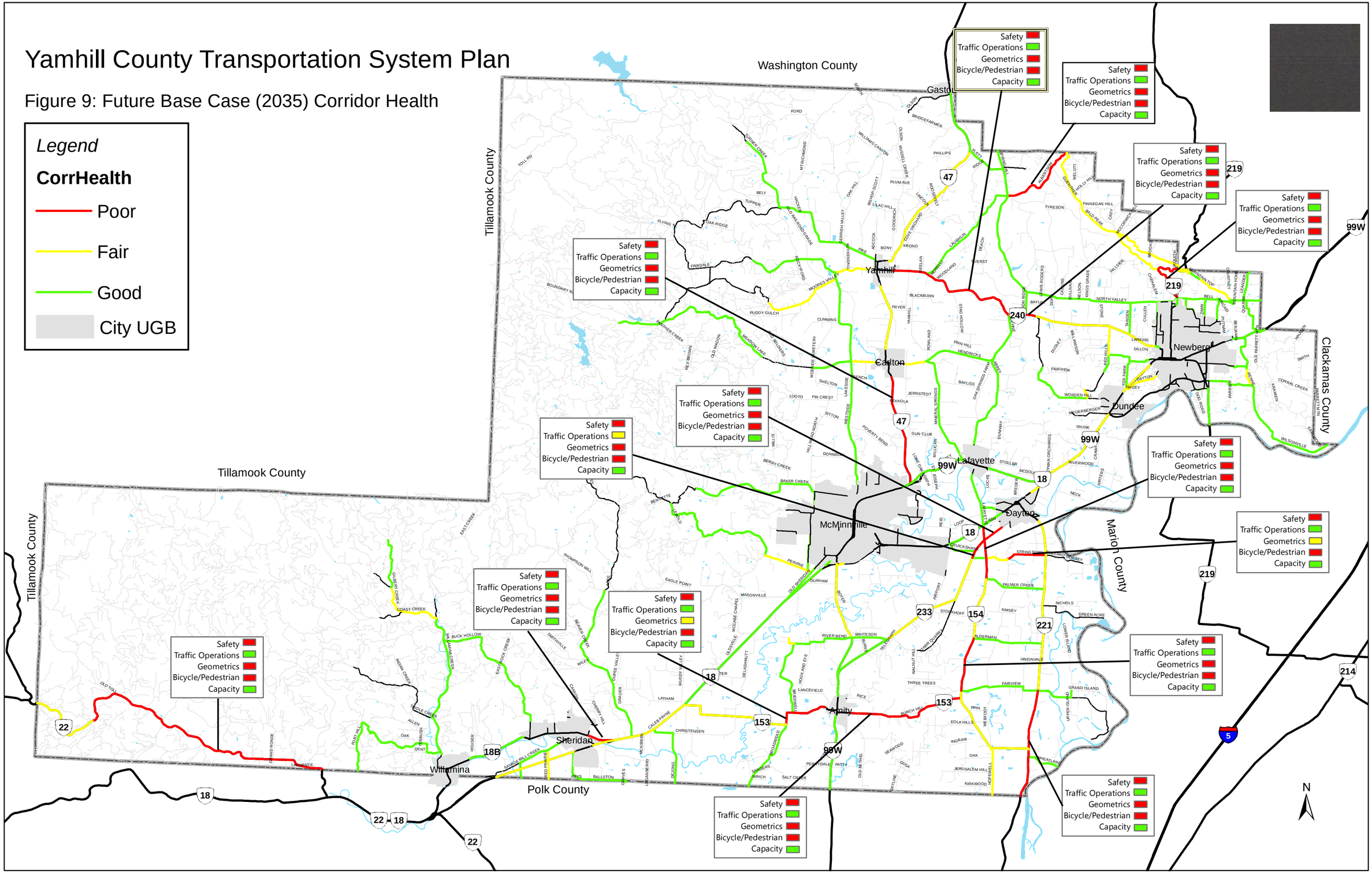
Yamhill County Transportation System Plan

Figure 9: Future Base Case (2035) Corridor Health

Legend

CorrHealth

- Poor
- Fair
- Good
- City UGB



The percentages of overall state highway mileage falling within each corridor health category are:

- Good – 27%
- Fair – 41%
- Poor - 32%

Corridor health remains the same in the future for most state highway segments. Along OR 99W, the segments between Newberg and Dundee improve from poor to fair because of the improved mobility with the construction of the Newberg-Dundee Bypass. The segment of OR 153 from Hopewell Rd. to OR 221 changes from good to fair because of the shoulder width needs associated with the higher future volumes along this segment. The segment of OR 18 from Red Prairie Rd. to the Yamhill County line and the segment of OR 219 north of North Valley Rd. both change from fair to poor because of the additional turn lane needs resulting from higher future volumes.

As for existing conditions, nearly all of the county roadway mileage falls within the good or fair categories, as reflected in the following percentages:

- Good – 88%
- Fair – 7%
- Poor - 5%

The Corridor Health category would not change for any of the county road segments.

TRANSIT

Based on the anticipated slow rates of population and employment growth within the rural portion of the county, the type and level of future needs for Yamhill County Transit Area (YCTA) transit services will likely be similar to the existing needs. These include the need for:

- Improved transportation services
    - Transportation services during evenings and weekends
    - More frequent bus stops
    - Service to large employers such as the Spirit Mountain Casino and the Riverside Drive industrial area
    - Improved travel time reliability on OR 99W

- Expanded transportation service to specific areas
    - Outlying areas of Yamhill County
    - Inter-city transportation between Yamhill and Carlton
    - Inter-city transportation between Sheridan, Willamina and Grand Ronde (West Valley)
    - More regional connections (e.g., the Oregon coast)
- Improved transit facilities
    - Designated bus stops with signs and posted schedules
    - Transit shelters for fixed routes
    - Sidewalks, curb cuts, loading spaces, and crosswalks
    - Better ADA accessibility
    - Transit center in McMinnville
    - Bus pull-outs

In addition to the future YCTA needs, future commuter rail needs were identified in the Yamhill County Commuter Rail Study.[14] The study evaluated the potential for commuter rail operation from McMinnville to Milwaukie utilizing existing freight railroad lines which generally parallel OR 99W (see Figure 10). Key findings from the study include the following:

- Assuming an upgrade of the line and a maximum 60-mph operation, travel time would be 68 minutes from McMinnville to Milwaukie and 46 minutes from Newberg to Milwaukie.
- A schedule of five inbound trips in the morning peak period and five outbound trips in the evening peak based on 30-minute frequencies appears realistic. Two trains in each peak would run to and from McMinnville, with the remainder operating to and from Newberg.

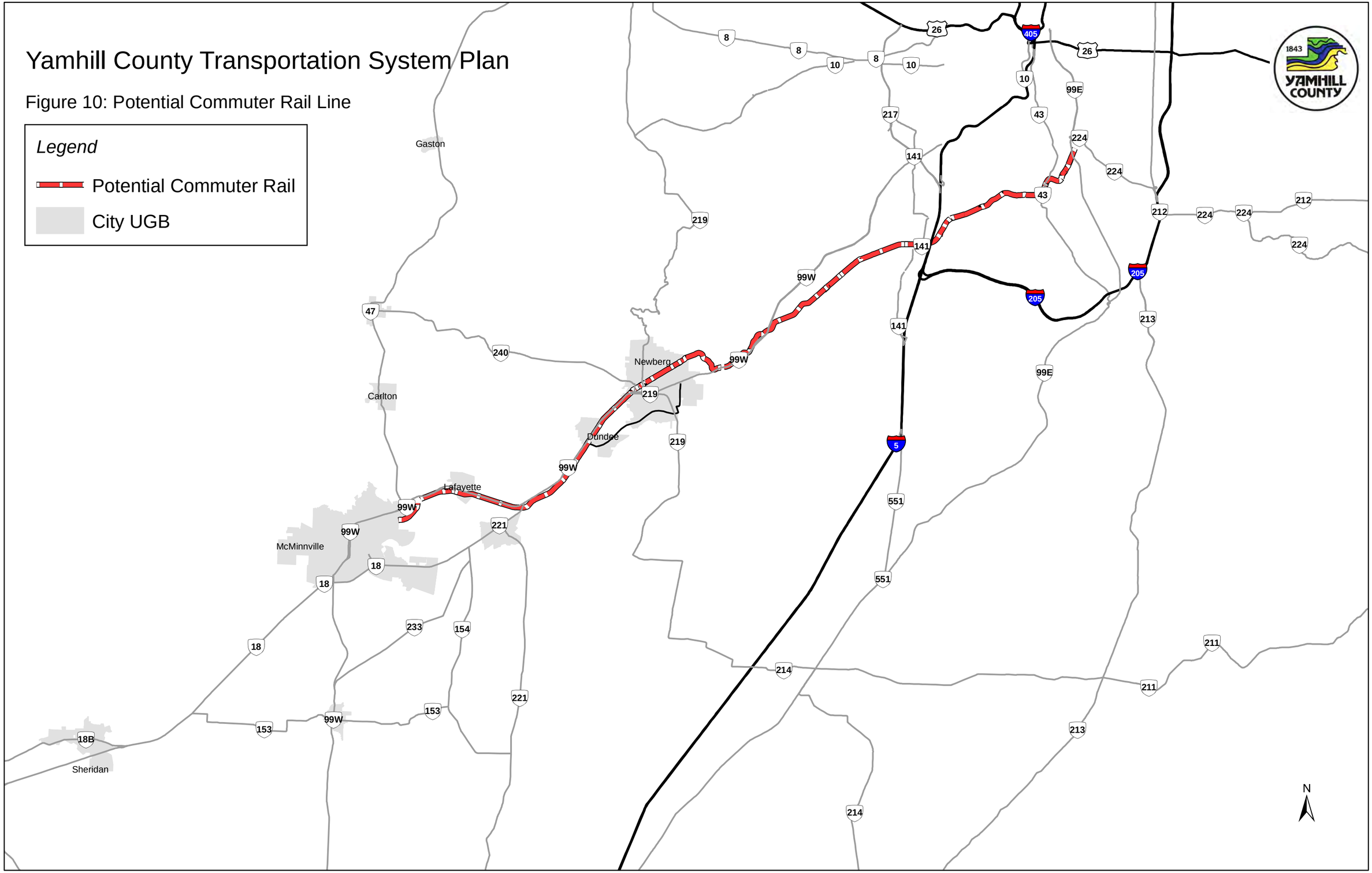
[14] Oregon Department of Transportation, Yamhill County Commuter Rail Study, (1998).

Yamhill County Transportation System Plan

Figure 10: Potential Commuter Rail Line

Legend

- Potential Commuter Rail
- City UGB



- Although adequate for low-speed freight service, the line would require considerable upgrading to accommodate commuter rail operations safely and cost-effectively. In particular, most of the bridges and trestles would require replacement or substantial upgrading, a significant number of ties would require replacement, much of the rail would have to be replaced, and many grade crossings would require upgraded protection to accommodate the increased speeds.
- The estimated capital cost to place a McMinnville-to-Milwaukie commuter rail line into operation would be $112.2 million (1997 dollars). The estimated costs include the upgrading of track, replacement of trestles, upgrading of crossing protection, vehicles, maintenance facilities, centralized train control, stations, and park-and-ride lots.
- The estimated operating cost would be $3.0 million annually.
- Daily boardings for 2015 are estimated to be 1,580. With the travel patterns heavily oriented towards the metropolitan area in the morning and away in the evening, there appears to be limited rationale for providing reverse commute service.
- Given the number of riders with trip destinations in the OR 217 corridor and Wilsonville, a timed connection with a Beaverton to Wilsonville line would be important.
- Aside from regular commute functions, the line would provide opportunities to develop excursion travel to other attractions in the corridor.