City of Tualatin

MEETING AGENDA

TRANSPORTATION TASK FORCE

November 1, 2012
5:00pm – 7:00pm

Tualatin Police Department Training Room
8650 SW Tualatin Road

---

1. WELCOME AND CALL TO ORDER
Purpose of the Meeting: Transportation System Plan meeting focused on the Draft TSP including remaining questions of the 65th Avenue extension and Boones Ferry North widening.

2. COMMUNICATION FROM THE PUBLIC
Limited to 3 minutes
A. Comments from City of Rivergrove *(Note: see information in this packet)*

3. GENERAL ITEMS
A. Accept Meeting #15 Summary
B. Announcements

4. LINKING TUALATIN UPDATE

5. PRESENTATION
A. Overview of the Draft TSP
B. Prioritization of Projects
C. City-wide Traffic Analysis *(Note: see information in this packet)*

6. DISCUSSION
A. Consideration of Draft TSP Low Build Scenario
B. Outstanding Questions: 65th Avenue Extension and Boones Ferry Road

7. COMMUNICATION FROM THE PUBLIC
Limited to 3 Minutes

8. NEXT MEETING
A. None

City of Rivergrove • PO Box 1104 • Lake Oswego, OR 97035

Rivergrove's Response & Recommendations
To the Proposed Tualatin River Bridge at 65th

The proposal to build a 2 to 4 lane bridge (Tualatin TSP) or a 5 lane bridge (Metro RTP) at 65th astonishes residents in this quiet, established residential neighborhood. They ask:

- Why was a project of this mammoth scale designed for our community?
- How is it that Metro, Tualatin and two Counties can plan a bridge that bisects our City, destroys our quiet riverside community, violates the City's long term ordinances, Metro's Title 3 ordinance, and runs counter to FEMA's flood requirements in the Tualatin River Floodway?
- Why would planners favor the destruction of established and thriving residential communities over equally or more satisfactory planning choices for connectivity through commercial and industrial land west of I-5?
- And finally, has Metro considered that the traffic from this bridge would impair and even prevent the development of another Metro goal in our area: the High-Speed and Light-Rail Regional Program?

The attached slideshow and documentation offer not only Rivergrove's emphatic objections to this bridge, they also offer our City's planning recommendations to accomplish both goals—improved vehicular connectivity and the proposed network of high-speed and light rail.

REACTION OF CITIZENS

On October 8, 2012, the City of Rivergrove held a public meeting to hear citizen response. Attendance was exceptionally brisk, with attendees from the four communities affected by this bridge: Rivergrove, Tualatin (N of river), Lake Oswego and the Rosewood Neighborhood.

Citizen attendees were strongly opposed to this bridge for several valid reasons:

1. Congestion at McEwan/65th and Boones Ferry/ I-5 is now unreasonably high at rush hours and noon hour. 1200 additional vehicles would render it completely unnavigable.

2. The Tualatin Floodway occupies the entire width of the City of Rivergrove at this point, where flooding has caused extreme damage to nearby homes. Flood ordinances and FEMA requirements are designed to help control future flooding.
3. This bridge is not in compliance with the ordinances of the City of Rivergrove.
4. The fragile riparian area is a designated bird sanctuary and home to Rivergrove's bald eagles.
5. Travel from one end of Rivergrove to the other would be possible only by leaving the city limits and traveling through two other cities to reach the contiguous portion.
6. The scale of this project is unbelievably huge for the size of the community. The total combined width of proposed vehicular and pedway bridges is similar to that of the massive nearby I-5 bridge.
7. The proposed bridge is less than 1500 feet from the I-5 freeway bridge. It is neither fair nor reasonable to subject a residential community to the noise and fumes of another major roadway at such a close distance from an existing major bridge.
8. There is already connectivity on the other side of the freeway and this can be widened to carry additional traffic through commercial and industrial areas, not through our communities of single family homes.
9. There is concern for the safety of children who walk to school from and other pedestrians walking across the planned major arterial.
10. The communities on the north side of the river near the proposed bridge were not a party to the planning of the bridge.
11. This proposed project does not comply with the universal planning principle that calls for honoring a city's residential neighborhoods.
12. It also allows Commercial Traffic Sprawl into established, thriving residential neighborhoods.
13. The citizens have spoken and they are united in their wish to find a better approach to the connectivity problem and in their opposition to a vehicular bridge at 65th.

RECOMMENDATIONS

The City of Rivergrove is pleased to submit the attached slideshow, illustrating a proposal developed by one of our citizens. These recommendations involve the preservation of the McEwan rail line for high-speed or light rail, without the onslaught of 1200 additional cars at rush hours. They also involve the reconnection of Lower Boones Ferry Road over or under I-5, and the redirection of that road and Bridgeport Road to better control traffic around the Lake Oswego/Durham I-5 exit. And finally, they offer our neighbors in Tualatin an additional access to I-5, and relief from the problem of congestion, without harm to innocent bystanders.

The City of Rivergrove suggests that a **feasibility study** be conducted to evaluate our recommendations, to determine the best solution to the congestion problem in the area.

City of Rivergrove, Oregon; October 10, 2012

The City of Rivergrove's

Response & Recommendations

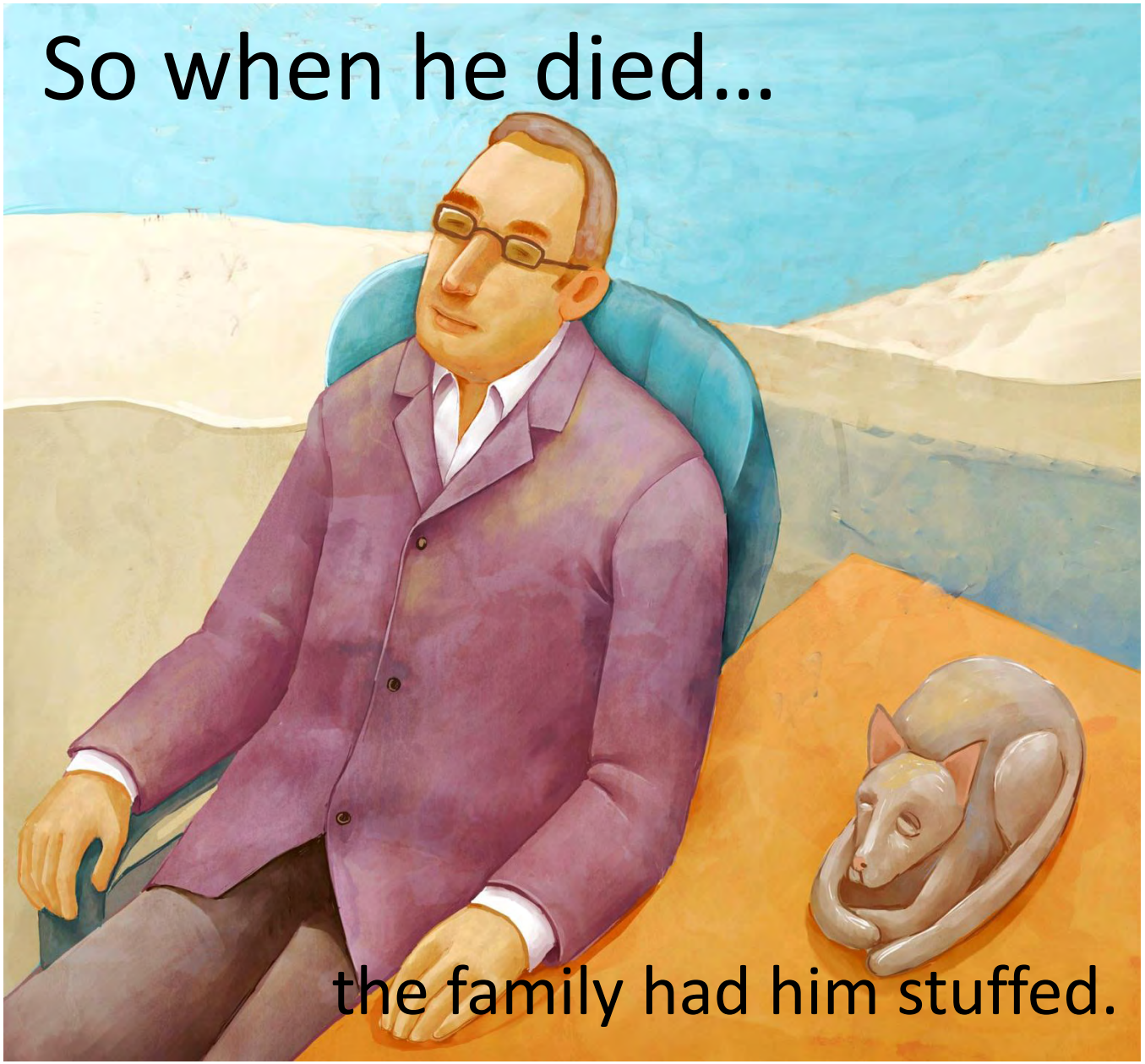
To the Proposed Bridge at 65th

Meet Uncle Albert,

a decent fellow

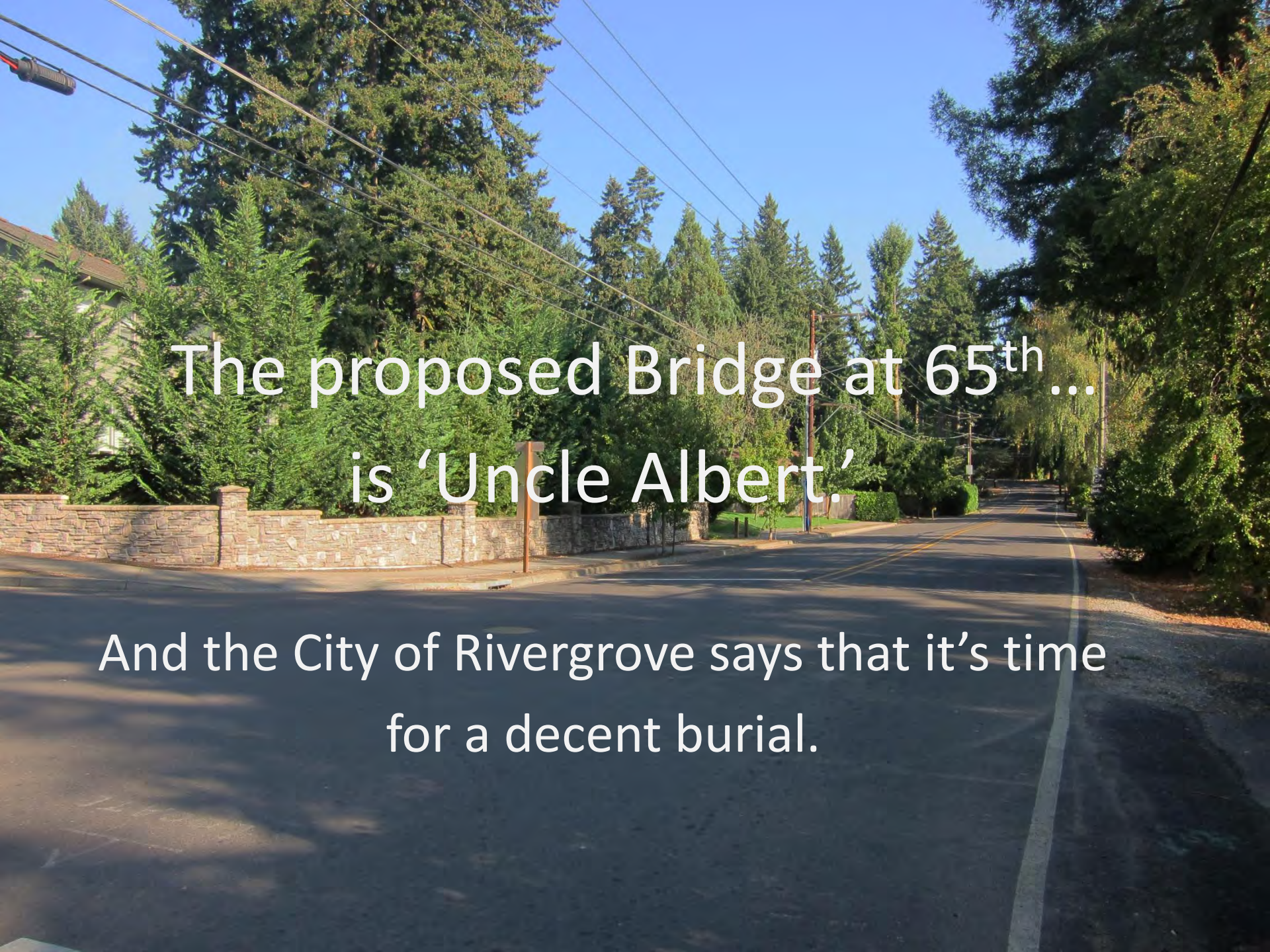
who always came in handy

to round out the guest list.


So when he died…
the family had him stuffed.

He still comes in handy…

to avoid having 13 at the Thanksgiving table.


The proposed Bridge at 65th …
is ‘Uncle Albert.’
And the City of Rivergrove says that it’s time
for a decent burial.

Although ‘Uncle Albert’ still occupies a place on TSPs and the RTP…

he no longer serves a useful real-life purpose.

His only function is to make planning numbers come out right on paper—at the expense of:

- 4 thriving, vigorous residential communities,
- Metro/ODOT’s High-Speed/Light Rail Plans,
- the health and safety of the Tualatin River and those (humans and wildlife) who live there.

This Bridge

cannot be built in this

Tualatin Floodway location.

City of Rivergrove's Resolution 231-2012

explains why.

What is planned for this quiet intersection?

City of Tualatin: 2 bridges 2-to 4-lane vehicular plus a bike and pedestrian bridge.

Clackamas County: ditto, on th s County side of the county l

REMOVED
at the City's request

Washington County: ditto, on the Washington County side of the line.

Metro: a 5-lane vehicular bridge plus a bike & pedestrian bridge.

Put this into perspective…

The new Stafford bridge—on busy Stafford Road—is just TWO lanes!!

Moreover, the proposed 65th Street Bridge would be less than 1500 feet from the 6-lane I-5 bridge.

WHAT are you doing to our beautiful, peaceful, residential community???

What's wrong with all this connectivity? A whole lot…

Among many other concerns, the bridge at 65th:

- is no longer in compliance with today's land use ordinances, Metro's Title 3 & FEMA's enhanced Floodway requirements;
- would dump 1000 to 1200 cars per rush hour into a heavily congested zone being studied for Metro/ODOT's high-speed / light rail programs;
- bisects an attractive, quiet residential community and brings commercial traffic into three others.

Nevertheless, why not leave it as a 'Placeholder'?

The bridge is taking valuable planning resources from other sustainable transportation options that could be developed.

Remember.....

- it violates Rivergrove's land use ordinances & Metro's Title 3
- it violates Rivergrove's Comprehensive Plan & Resolution
- it conflicts with FEMA requirements
- it conflicts with Metro's and ODOT's High-speed/Light Rail programs
- it conflicts with sensitive lands and wildlife
- there is overwhelming public opposition to:
  - the destruction of four quiet residential communities, and
  - the introduction of commercial traffic into solid residential neighborhoods
- thus it directly violates the Tualatin Task Force's own guidelines

Keeping a **flawed plan**
prevents focusing on
a **VIABLE PLAN.**

In 2002, even though identified as non-viable, this bridge was kept on the TSP as a ‘placeholder.’

Ten years later, many people assume that,
if it's on the TSP, it's good to go.

It isn't—and it wasn't 10 years ago.

It’s a good example of how a non-compliant 'placeholder' on a TSP produces confusion, wastes resources and prevents the search for solutions.

Rivergrove asks…

Why has such a plan—for a bridge that no longer serves the highest and best land use purposes and can no longer be built under today's land use ordinances and policies—been allowed to grow…

and grOW…

over Rivergrove's objections?

The answer: Rivergrove has had no TSP (it's exempt) and therefore has had no official voice.

Not for long…

Rivergrove City Council has voted to begin work on a TSP.

In the meantime…

let's explore another option that will:

- address congestion at McEwan/Lower Boones,
- preserve Metro's light rail plan,
- honor the integrity of residential areas, according to Task Force guidelines,
- avoid development in the Tualatin Floodway,
- maintain a safe, quiet environment, and
- benefit citizens of Tualatin, Lake Oswego, Rosewood Neighborhood and Rivergrove.

City of Rivergrove's Recommendations & Response
Planned Vehicular Bridge at 65th

October 7, 2012 / M. Salch for The City of Rivergrove

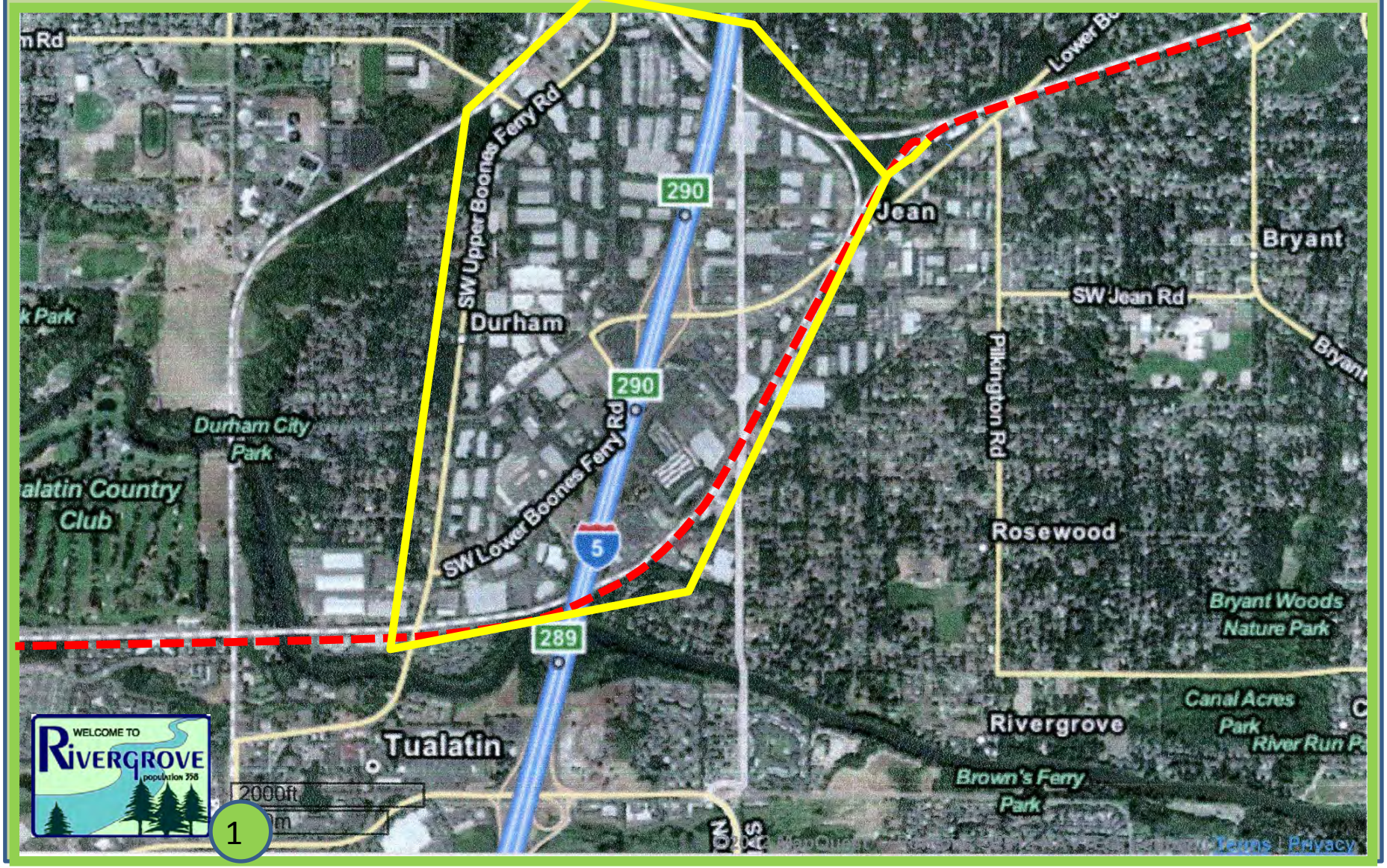
CONTENTS:

ASSUMPTIONS:

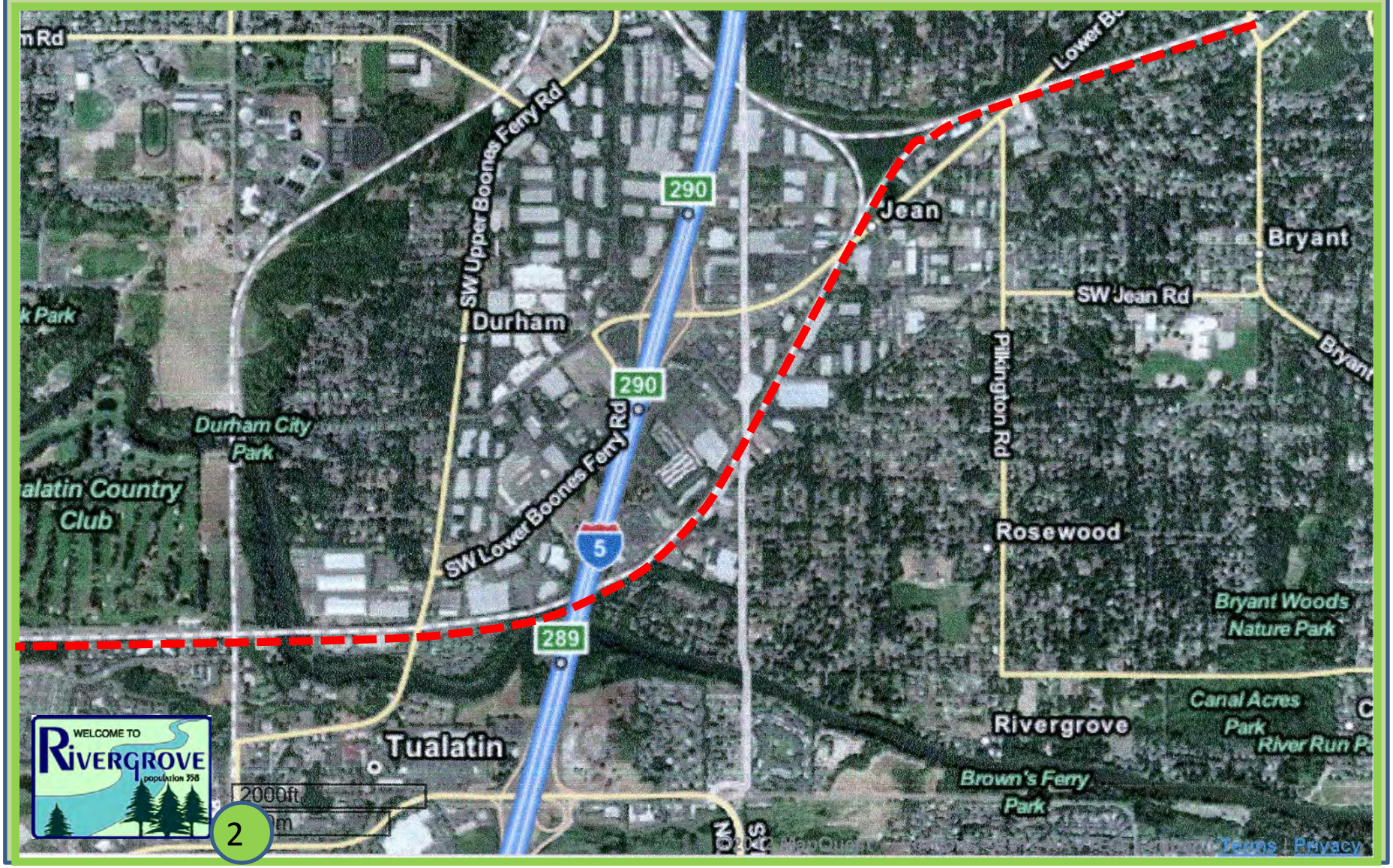
RECOMMENATIONS:

CONCLUSIONS:

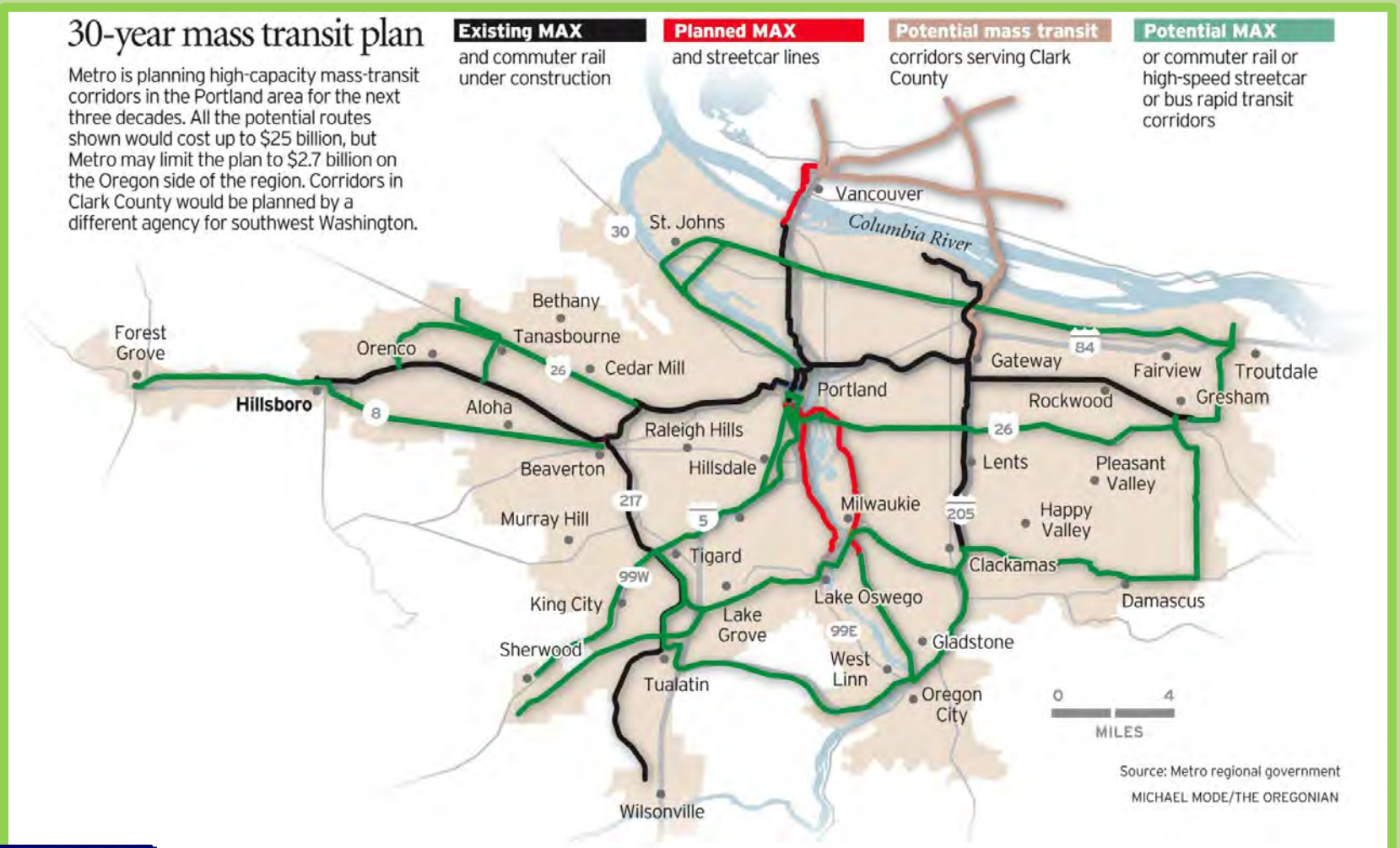
<u>ASUMPTION #1:</u> The Neighboring Jurisdictional Transportation Planning Processes are looking for a way to relieve vehicular traffic congestion in the Lower Boones Ferry Rd/65th/McEwan Rd area.



ASSUMPTION #2: A key component relative to any new development in the Lower Boones Ferry Rd/65th/McEwan Rd area should be the Union Pacific Right-of-Way.



ASSUMPTION #3: The Union Pacific Right-of-Way is "of interest" to Metro. Part of a 30-yr Mass Transit Plan…..potential MAX line.



ASSUMPTION #4:

In 2010, the ODOT received $8.9 million in federal grants to continue their planning efforts aimed at improving passenger rail service between Eugene and Portland.

The Union Pacific Right-of-Way is included in this study.

Open houses in Oregon City, Lake Oswego will help plan future high-speed rail service

Published: Friday, September 07, 2012, 10:57 AM Updated: Friday, September 07, 2012, 11:06 AM

By **Rick Bella, The Oregonian**

View full size

Upcoming open houses in Oregon City and Lake Oswego will explore the possibilities of high-speed passenger rail service between Portland and Eugene.

Oregon Department of Transportation planners are putting on the open houses, two of six to be held in Willamette Valley cities.

The 125-mile line between Portland and Eugene is part of the federally designated Pacific Northwest Rail Corridor that has been targeted for upgrades. ODOT is leading an environmental review process that will affect a number of important decisions, including future routes and stations.

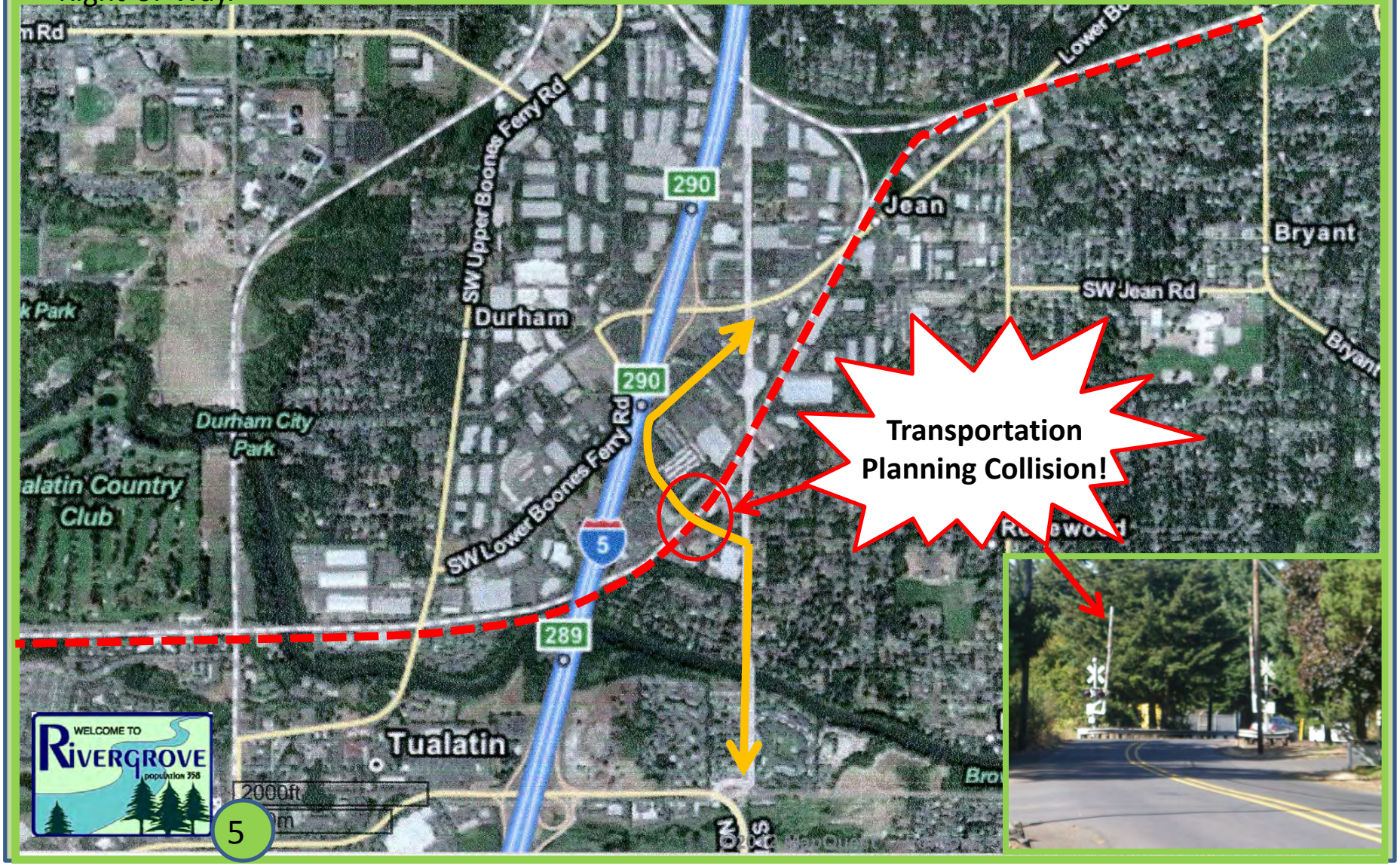
The project will also determine the number of daily trips, travel-time objectives and whether the trains will be powered by electric or diesel-electric engines.

All open houses will be held 5 to 7 p.m., with child care provided.

The schedule of open houses:

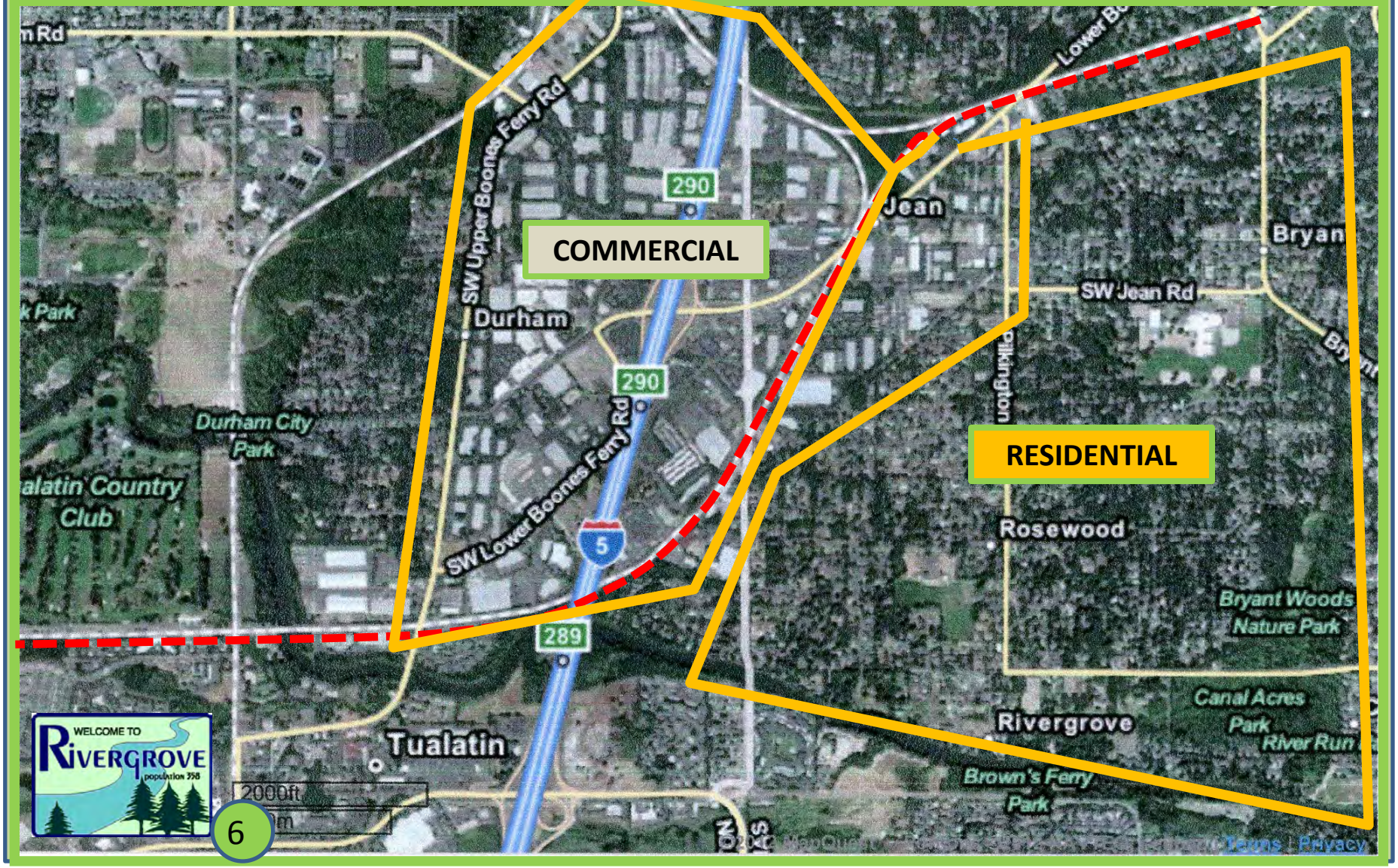
- **Salem, Sept. 6:** ODOT Transportation Building, Gail Achterman Conference Room 355 Capitol St. N.E.
- **Oregon City, Sept. 11:** Clackamas Community College, Gregory Forum Room A, 19600 Molalla Ave.
- **Albany, Sept. 12:** Albany Public Library Meeting Room, 2450 14th Ave. S.E.
- **Lake Oswego, Sept. 13:** Phoenix Inn, 14905 Bangy Road
- **Portland, Sept. 18:** Metro Council Chambers , 600 N.E. Grand Ave.
- **Eugene, Sept. 19:** Atrium Building, Lobby, 99 W. 10th Ave.

ASSUMPTION #5: Long-range vehicular traffic plans that include building a new 2-5-lane bridge over the Tualatin River and running traffic up/down 65th is in a "Planning Collision" with the long-range interests & studies that include an LRT (Light Rail Transit) or HSR (High-Spd Rail) on the Union Pacific Right-of-Way.

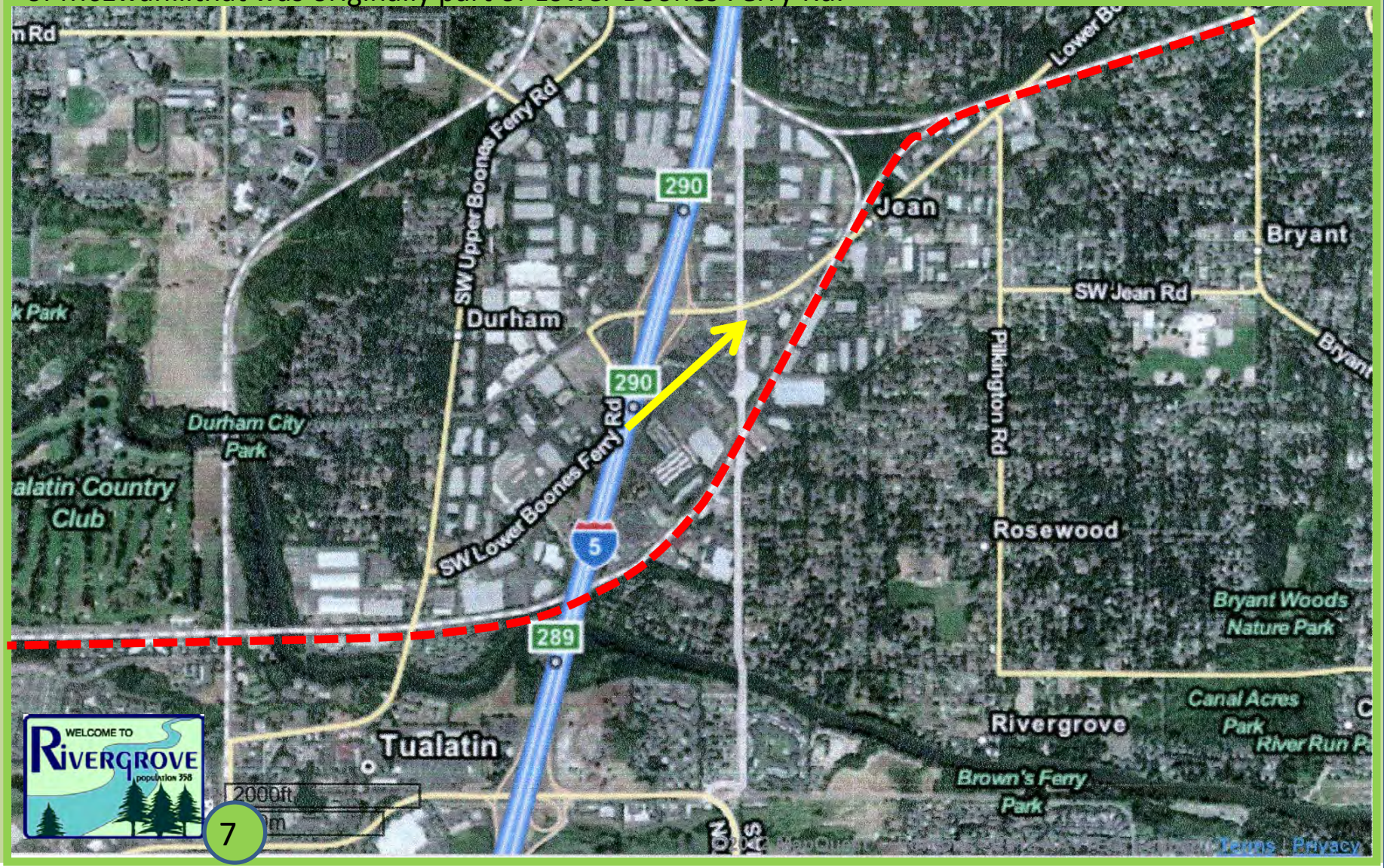


RECOMMENDATION #1: Keep commercial-related vehicle traffic in/out of the commercial areas--on the Major & Minor Arterials & Freeways--and out of the residential neighborhoods.

(This is a fundamental in transportation planning as well as a Task Force guideline.)



RECOMMENDATION #2: A feasibility study to relieve congestion in the Lower Boones Ferry Rd/65th/McEwan Rd area with a "Re-attachment" of Lower Boones Ferry (west of I5) to Lower Boones Ferry (east of I5). This would include going over or under I5. Requires a commercial section of McEwan…that was originally part of Lower Boones Ferry Rd.



Lower Boones Ferry Rd, West of I5, Looking Northeast.
Improved Roadway. No Obstructions in Jumping I-5

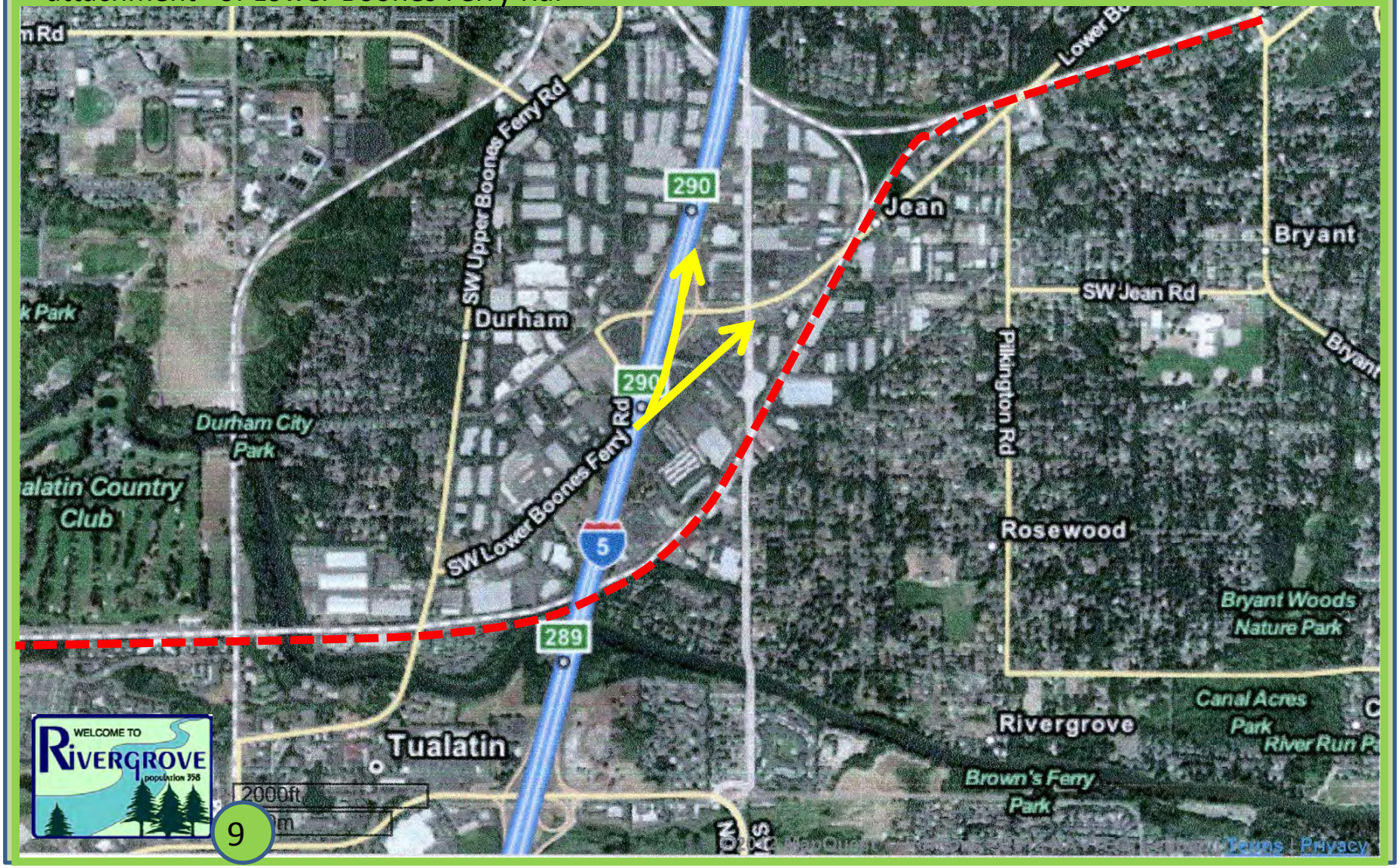
SW McEwan Rd (Originally Lower Boones Ferry Rd)
East of I5, Looking Southwest.

Improved Roadway. No Obstructions in Jumping I-5

RECOMMENDATION #2 (Continued):

Re-attachment" of Lower Boones Ferry (west of I-5) to Lower Boones Ferry (east of I-5) is a "Clear Shot"….

RECOMMENDATION #3: A feasibility study to relieve congestion in the Lower Boones Ferry Rd/65th/McEwan Rd area by adding an enhanced northbound I-5 access ramp with the "Re-attachment" of Lower Boones Ferry Rd.



RECOMMENDATION #4: A feasibility study to relieve congestion in the Lower Boones Ferry Rd/65th/McEwan Rd area that includes making the "Re-Attachment" of Lower Boones Ferry Rd an Eastbound One-Way and making Bridgeport Rd a Westbound One-Way.

CONCLUSIONS:

The current proposal to relieve congestion in the Lower Boones Ferry Rd/65th/McEwan Rd area by building a new 2-5-lane bridge over the Tualatin River and running traffic up/down 65th will obviously result in collateral damage on several fronts. Nothing has addressed that traffic northwest of McEwan and 65th.

This plan is on a Collision Course with all long range interests by ODOT and/or Metro relative to the Union Pacific Right-of-Way. If ignored, this proposal will result in even more vehicles stuck in traffic waiting for an LRT or HSR to pass.

The plan will be expensive; it includes battles involving (a) concerns over more traffic next to a school zone, (b) protecting the 100-yr Floodplain and Tualatin Floodway (will require FEMA involvement), (c) concerns for the documented riparian zone and bird sanctuary along the river, and (d) the archaeological significance reported by the seniors. It is a great plan for promoting cut-through traffic when I-5 slows-down--so damaging to residential.

In support of Metro's commitment for more efficient utilization of the available land, it is recommended that a more effective and less costly method be considered to relieve the congestion in the Lower Boones Ferry Rd/65th/McEwan Rd area.

Recommendation #2, #3, and #4 (pages 8, 9, 10) of this document offer suggestions as to how to solve the traffic issue within the Lower Boones Ferry Rd/65th/McEwan Rd area…without sprawling out of the immediate area.

Another option is to acknowledge that Interstate I-5 in this area has sufficient rights-of-way. It is recommended that more creative solutions be considered to relieve the congestion in the Lower Boones Ferry Rd/65th/McEwan Rd area, solutions that give the good tax-payers value without impact upon bystanders. The author of this document can be made available to help achieve this goal.

Rivergrove requests…

that "Uncle Albert," the planned 65th Bridge which:

- can no longer be built under today's ordinances,
- no longer represents the highest and best use of transportation planning and funding, and
- is so damaging to 4 residential communities,

be given a decent burial.

The City asks that you please remove this bridge from your Transportation Plan and, with Rivergrove's involvement, focus on ways to address, rather than simply transfer, congestion.

RESOLUTION 231-2012

A Resolution Opposing Vehicular Bridges in the City of Rivergrove

WHEREAS, the City of Rivergrove had adopted Ordinance 70-2001, an ordinance adopting amendments to the Rivergrove Land Development and Flood Damage Prevention Ordinances and the Rivergrove Comprehensive Plan in order to comply with the requirements of Metro's Urban Growth Management Functional Plan; and

WHEREAS, the Rivergrove Land Development Ordinance, section 5.070 states, "There shall be no new development within 25 feet of the ordinary high watermark of the Tualatin River. There shall be no new development within 25 feet of a wetland area identified by the U.S. Army Corps of Engineers"; and

WHEREAS, the Rivergrove Land Development Ordinance, section 5.090 states, "No new accessory structures may exceed 20 feet in height; and

WHEREAS, the new FEMA Risk Maps have updated and expanded the Tualatin River floodway (Exhibit A); and

WHEREAS, bridges utilizing environmentally sensitive area are inconsistent with the Rivergrove Comprehensive Plan which states that the City will protect its open space, scenic and historic areas; and

WHEREAS, additional traffic flow and the noise associated with it is inconsistent with the Rivergrove Comprehensive Plan which states in the Air, Water and Land Resource Element, "The City enjoys a quiet, peaceful environment. Preservation of this quietude is essential to the preservation of the character of the community"; and

WHEREAS, additional traffic flow is inconsistent with the Rivergrove Comprehensive Plan which states in the Transportation Element, "Rivergrove's position is that the sections of Childs Road and Pilkington Road in our City should be classified as neighborhood collectors",

NOW, THEREFORE, BE IT RESOLVED, that the City of Rivergrove finds that the construction of a new bridge across the Tualatin River in or near the City of Rivergrove is inconsistent with the City's ordinances and plans and, therefore the City opposes the construction of such a bridge.

This Resolution is adopted by the Rivergrove City Council this 8th day of October 2012.

APPROVED:

Heather Kibbey, Mayor

Sheri Richards, City Manager/City Recorder

Emails received from residents of the City of Rivergrove:

Sent: Saturday, October 13, 2012 1:22 PM
Subject: Tualatin river bridge at 65th

Hello Ms. Hofmann,

My family lives in the Rosewood Neighborhood on [redacted]. I would like to express my opposition to a vehicular bridge at 65th. I had heard of a ped/bike bridge and would be okay with that. A vehicular bridge would destroy our quiet and peaceful environment. Also, the intersection at McEwan and Boones Ferry would quickly fail spectacularly forcing traffic through the neighbor hood. If they want a connection between just Tualatin and LO it would be better situated down near Bryant. The 65th location just encourages I5 traffic to route through a quiet neighborhood and would ruin our peace and degrade our property values. Please work to have this option removed from Metro and Clackamas County's plans.

Sent: Friday, October 12, 2012 3:32 PM
Subject: oppose the 4 lane vehicular bridge planned for 65th Avenue at Childs

Hello,

I was unable to attend the meeting held at River Grove Elementary school on Monday October 8th, due to work constraints.

I am opposed to this bridge, we do not need MORE traffic in the local neighborhoods. More traffic is a danger to all living in the area. There is no reason to bring in over 1000 additional vehicles to this area. There is currently congestions problems in these areas without the additional 1000 vehicles. There is a safety concern for all neighbors.

If widening 65th on the southside has no effect on ANY neighborhoods then this would seem to be the best alternative. I am not proposing that you keep the traffic out of my neighborhood and place it in someone else's backyard, so to speak. If widening on the southside brings no ill effects to local neighborhoods then your choice is simple.

Thank you and I am hoping that this project will be rethought before it is implemented. It makes no sense to endanger people's lives with more traffic.

Sent: Wednesday, October 10, 2012 3:00 PM
Subject: 4-Lane Vehicular Bridge Planned for 65th Avenue at Childs

I object strenuously to the plan to widen 65th north of Childs to a Major Arterial, 5 lanes. If there must be access to the proposed bridge across the Tualatin River at 65th, ***widening 65th only south of the river is the option I would support.*** Keeping traffic out of local neighborhoods, especially freight traffic, is the only way to preserve safety and property values.

Do not support the widening of 65th north of Childs.

Thank you for your time.

Sent: Tuesday, October 09, 2012 8:18 PM
Subject: Re: Proposed 65th St. Expansion

To those concerned re: 65th street proposed expansion,

Our family has lived for [redacted] years [redacted] from the proposed major arterial overpass to connect 65th.

There seems little to gain by connecting 65th through an overpass. Where will the traffic travel to? Will we become a major expressway in our quiet residential neighborhood? What is the proposed cost and how will it be funded? Monies can be better spent elsewhere.

We find the current viable options to reach 65th either through one exit South I-5 or through Borland Road from the East end adequate. Our residential 25 mph road has already seen a steady stream of traffic that often exceeds the speed limit. Families use the roadways to walk their pets, students walk to and from school, and the school bus stops right where you propose to build a major expressway. For the safety and livability of our home life we express our sincere opposition to the proposed overpass.

Thank you for your consideration,

Sent: Monday, October 08, 2012 6:18 PM
Subject: 65th Street Bridge

I have lived at [redacted] for [redacted] years. My house is paid for. PLEASE do not build the bridge. Doing so would ruin everything about our area that my neighbors and I love.

Sent: Monday, October 08, 2012 4:45 PM
Subject: Fwd: City of Tualatin TPS Plans calling for a Vehicular Bridge to be constructed across the Tualatin River

My wife [redacted] and I want to be on the record that we strongly oppose any effort to expand and widen 65th to 5 lanes and/or construct a 2 to four lane bridge over the Tualatin River at 65th. This plan is a bad idea and violates the TPS Task Force self imposed guideline priority to "KEEP TRAFFIC OUT OF LOCAL NEIGHBORHOODS and to " KEEP FREIGHT OFF NEIGHBORHOOD ROADS". Placing an additional 1000 to 1200 vehicles through our neighborhoods at each rush hour is simply not acceptable. Keep the traffic out of our neighborhoods and leave it on I-5 where it belongs.

Sent: Monday, October 08, 2012 7:42 AM
Subject: Bridge

I am writing to ask that a bridge planned for 65th Ave. at Childs Rd not be approved.

This is a quiet neighbourhood that doesn't need any more traffic. It has enough as it is.

I am concerned about the closing of the Portland RV Park across the river, it seems like the bridge decision has already been okayed, and that the removal of the RV Park was one of the first steps.

Please don't bring the bridge to Rivergrove.

Thanks,

Sent: Sunday, October 07, 2012 4:18 PM
Subject: 4-lane Vehicular Bridge Planned for 65th Avenue at Childs

Dear City and Neighborhood Association personnel,

I am writing as a member of the Rivergrove community to express my concern regarding the possible construction of a multi-lane bridge across the Tualatin River at 65th and Childs Road. [redacted] years ago my husband and I moved to Rivergrove so that our children would be close to the schools and we would have a safe neighborhood in which to live. Indeed, my son has been able to safely walk to both Rivergrove Elementary and Waluga. With the new pedestrian path on Pilkington, it is now even safer for children in our neighborhood. A multi-lane bridge with a major arterial would destroy that safety and quiet of the Rivergrove community. Moreover, I have understood that the TSP Task Force has guideline priorities to "Keep traffic out of local neighborhoods" and to "Keep freight off neighborhood roads." A multi-lane bridge does not reflect those priorities.

With a tight economy and budget cuts at the local and state levels, it is a highly inefficient use of tax payer dollars to put another multi-lane bridge in close proximity to the I-5 bridge. As a tax payer, I see this proposed vehicular bridge as a wasteful choice given all the existing roads and bridges in Clackamas County that truly need repair. Please spend our tax dollars wisely and forgo plans for a vehicular bridge across the Tualatin River in the Rivergrove neighborhood.

Sincerely,

Sent: Sunday, October 07, 2012 4:03 PM
Subject: Childs Rd-Bridge

My name is [redacted] I live at [redacted] Lake Oswego. My wife and I have lived here [redacted] years. Recently we received information that the Tualatin Transportation System Plan (TSP) is working on plans to build a vehicular bridge across the Tualatin River at 65th street. The bridge would be 2 to 4 lanes wide and Tualatin estimates that 1000 to 1200 vehicles would cross over it during the rush hour. Also, they intend to widen 65th north of Childs Rd to make a major Arterial of 5 lanes.

As you know, Childs Rd in the vicinity of Rivergrove is an area that is residential, in fact, all of Childs Road east of I-5 is residential and there is no Commercial businesses allowed in most of the area, partly to reduce traffic. Such a venture that Tualatin TSP is planning would create a large amount of traffic and much inconvenience or even a possible hazard to those of us who's drive ways, cul-de-sac, streets and lanes have no other exit except Childs Rd. I and my family oppose this.

Sincerely,

Sent: Saturday, October 06, 2012 3:23 PM
Subject: bridge

My husband and I are not in favor of the widening of 65th and the bridge. Can't be at the meeting, so please register us as not in favor. We live at [redacted] Lake Oswego, Or. 97035 (Rivergrove).

Sent: Friday, October 05, 2012 9:25 AM
Subject: Vehicular Bridge planned for 65th

To everyone involved in this project: My name is [redacted] and I live on [redacted] just a [redacted] 65th and Childs.

I would like to express a very strong objection to a bridge that would cross the Tualatin River connecting to 65th Ave. This would completely change the environment of our neighborhood that seems to me would be to no ones benefit. Traffic on Childs already is very busy. We are a community of families that live here because of the neighborhood feel. A bridge and the traffic it would bring would change all that.

Sent: Monday, October 01, 2012 9:06 AM
Subject: Vehicular Bridge over Tualatin River at 65th

To Whom It May Concern:

We would like to advise you that we are concerned about the subject project on the Tualatin River. We have read the recent correspondence to your offices from the Mayor of Rivergrove, Heather Kibbey, concern the bridge. We agree with and support Mayor Kibbey comments.

We hope that this will be resolved to every-ones satisfaction.

City of Tualatin

Transportation Summit Summary
September 20, 2012, 5:00-8:30pm
Tualatin Police Department
8650 SW Tualatin Road
Tualatin, OR 97062

MEETING OVERVIEW
This was a combination Transportation Summit and the 15th meeting of the Transportation Task Force. The event included an open house format with displays and staff available to answer questions, a presentation by the Technical Team, a town hall forum, results of the Live Traffic Modeling open house station, and the Transportation Task Force. While signing in, members of the public were encouraged to fill out comment forms and place an order at the Live Traffic Modeling table.

Open House
Sixty-eight people signed into the Open House. The Open House included a welcome table, project displays, and a Live Traffic Modeling station. Project displays included:

- Bike/ped projects - with cost estimate, funding sources, and priority
- Bike boulevard system
- Transit projects
- Transit projects table
- Loop bus route
- Street projects
- Street projects table
- Street extensions/urban upgrades
- Street extensions projects tables
- No Build Option
- Low Build Option - Without 65th Ave Extension
- Low Build Option - With 65th Ave Extension
- Low Build Option - With 65th Ave Extension and 5 lane
- Low Build Option - With Boones Ferry Road North Widening

Presentation
Theresa Carr, Terra Lingley, and Alan Snook gave a PowerPoint presentation called "Putting it All Together". Download the PowerPoint here: www.tualatintsp.org/files/tualatintsp_overview_finalsmall_1.pdf) The PowerPoint included:

- Putting it All Together
- Presentation Outline
    - Review highlights from modal plans
        - Transit
        - Bicycle, Pedestrian, Trail
        - Roadway
            - Intersections
            - Street Upgrades and Extensions
        - Freight
    - Review traffic findings from key scenarios
- Where we are in the TSP Process (graphic, beginning of Step 4)

- Progress Since our August 23rd Meeting
    - We met with City Council on September 10th
    - We developed the transit, roadway, bicycle, pedestrian, and trail modal plans
    - We have prepared cost estimates, funding sources, and prioritization
- What We're Asking of You Tonight
    - Do the modal plans reflect Tualatin's goals and objectives for its TSP?
    - Do we have the priorities right?
    - Talk about the traffic implications of doing nothing, vs.
        - Expanding capacity of the existing network
        - Extending 65th Avenue
        - Expanding Boones Ferry Road north of downtown
- Reminder of Goals and Objectives (graph)
- Transit Projects
    - Shuttle Circulator Route
- Bike, Pedestrian, and Trail Modal (map)
    - Bike boulevard System (map)
- Roadway Modal Plan
    - Functional Classification Network (map)
    - Freight Element (map)
    - Roadway Element Map
- Scenarios Rely on Transportation Task Force Guidance
    - Includes compilation of guidance from 7 refinement areas
    - Looked at various options for 65th Ave
        - No extension
        - 2-lane bridge extension
        - 5-lane widening of 65th with 4-lane bridge extension
    - Looked at widening Boones Ferry Road north of Martinazzi
- Assumed Future 2035 Scenarios and Roadway Projects (map)
- No Build Option (map)
- Low Build Option - Without 65th Ave Extension (map)
- Low Build Option - With 65th Ave Extension
- Low Build Option - With 65th Ave Extension and 5 lane
- Low Build Option - With Boones Ferry Road North Widening
- Transportation System Plan Timeline
- What Happens Next?
    - Discuss and finalize TSP recommendations
    - Refine the implementation
        - Code language
        - Prioritization
        - Costs and funding
- Develop the draft TSP
- Begin discussing TSP document with Planning Commission, TPARK, and City Council

Live Traffic Modeling Results

During the open house, participants were encouraged place orders at the live traffic-modeling table. Following the Town Hall forum, Alan Snook gave a brief overview of one of the submitted orders: the extension of Tualatin Road east, over the park and Tualatin River and connecting with Boones Ferry Road. In the 2035 forecast, 1060 vehicles would use the facility, which would significantly reduce the number of vehicles along Martinazzi Avenue and Lower Boones Ferry Road near

downtown. It was noted that this project is not under consideration and was just a demonstration of the live traffic modeling station at the open house.

There was a request to include travel times in future traffic models.

- A new east-west roadway crossing I-5 between Tualatin and Wilsonville, including a new I-5 interchange south of I-205.
- A west extension of Herman Road (to Boones Ferry Road) paired with closure of Tualatin Road north of Boones Ferry Road.
- A grade-separated Railroad crossing on Tualatin-Sherwood Road, west of Boones Ferry Road.
- Travel-time on Hall Boulevard (between Cedar Hills Blvd and Durham Road) with and without the north-south connection.
- Other travel time requests from a given start point to a given end point.

Town Hall Forum

For one hour, members of the public were encouraged to make comments to the entire group and ask questions of the technical team. Topics covered included:

- How land use is considered when forecasting traffic volumes?
    - It was noted that future land uses are anticipated, with adjustments made by Tualatin City staff.
- There were numerous citizens of Rivergrove and the Rosewood Neighborhood of Lake Oswego that spoke against the extension of 65th Ave over the Tualatin River. Many felt that the extension would cut Rivergrove in half, would not be compatible with current land use and traffic in the area, would lead to pedestrian and traffic safety issues and would put Tualatin's problems in and through Rivergrove.
- Is the Kmart redevelopment and traffic changes accounted for in the model?
    - Yes, the model shows an increase in use, and the redevelopment potential of that site.
- Transit should be supported, including WES, as a way to remove some single-occupancy-vehicles from Tualatin-Sherwood Road.
- There were numerous comments in support of the Task Force promoting projects that will help the business community in Tualatin that depends on access in and through Tualatin.
- We are setting priorities, emotion should be taken out of the decision-making but balance is important. It is good to hear the Rivergrove perspective.
- There was a request to see if a grade separation of the railroad underneath Tualatin-Sherwood Road would significantly improve traffic movement.
- Biking and walking will become important in the future, access points to the Tonquin Trail will be very important.
- It was noted that the Tualatin Chamber Shuttle had been selected for a pilot program that will dovetail with the Linking Tualatin work to help improve connections to transit and in turn improve freight, bike, and pedestrian movement.
- Cut through traffic should not be promoted.
- 2-lane roads might seem insignificant but they can eventually become 5-lanes or more in the future.
- Small fixes won't work, the Western Bypass is needed.
- Smart lights and other technology improvements are needed.
- Does the traffic modeling include transit and bike improvements?
    - Yes, it assumes a 5% or less mode split for transit use.

- It was requested to find the base mode split for transit use that would help alleviate transportation problems.
- Alice Rouyer from the City of Tualatin noted that the City met with representatives from Rivergrove. They were invited to join the Task Force early in the process and had been included in Task Force communications. She acknowledged that there was a lack of communication between the two cities in July when the 65th Ave extension was being discussed actively at the Task Force. She apologized for the lack of communication but noted that officials from Rivergrove have had a chance to read through all project materials and have been briefed on the process and progress. In addition, the City of Tualatin had met with the Lake Oswego Transportation Advisory Board the previous week.

In addition to the verbal comments made during the Town Hall Forum, eight comment cards were returned. Complete comment card comments are included in **Appendix A.**

APPENDIX A: COMMENT CARD COMMENTS

Comments: ***1.*** *It is very difficult and dangerous walking across Tualatin-Sherwood Rd at Martinazzi – Right turn on red, cars at times do not pay attention to pedestrians.* ***2.*** *Leaving the K-Mart parking lot to turn left gets a back up of traffic; the right turn lane is rarely used - as I have seen.* ***3.*** *Nyberg turning right at Martinazzi to Boones Ferry is a huge back up of traffic most of the time and rush hour is worse. Are all of these cars going to Tualatin Rd residences or using Tualatin Rd to 99?*
Have you visited tualatintsp.org? *Yes.*
How did you hear about the meeting? *Email, Tualatin monthly newsletter.*
Most effective method of contact? *City Newsletter, Tualatin Life.*
Was today's presentation informative? *Yes. Thanks for all the hard work and efforts at improvement.*

Comments: *Improve the radius at Herman Rd NB to 124th NB. Needs to be designed like WB67 at the very least. The roundabout at Herman and Tualatin Rd in not good for freight, when large enough for trucks, it does not slow down Argo's. 65th needs to happen to help clean I-5 interchanges and Boones Ferry Rd.*
Have you visited tualatintsp.org? *Yes.*
How did you hear about the meeting? *Word of mouth.*
Most effective method of contact? *Email.*
Could something be done differently to convey information? *No.*
Was today's presentation informative? *Yes.*

Comments: ***1.*** *Please plan on Bus pull-outs along Tualatin Sherwood Rd.* ***2.*** *Tonquin Trail is now "Ice Age Tonquin Trail".* ***3.*** *Please use Wilsonville as an example for our own transit – 340,000 trips* ***4.*** *We urgently need more transit rather than road widening or new roads!!! #1 – first determine largest numbers, i.e. 12,000 employees in Tualatin – 75% from out of town, how about out-of-town workers living IN TOWN. First Priority! All of the other "models" should be 2nd, 3rd, 4th etc. Too much persuasion by Eryn!! Re: stands for Yellow on red!! Pressure!!*
Have you visited tualatintsp.org? *Yes.*
How did you hear about the meeting? *Word of mouth, newspaper, council and meeting*
Most effective method of contact? *Mailing, city newsletter, Tualatin Life.*
Could something be done differently to convey information? *This new process was <u>huge</u>, 160 details! (And a first in this style?) What a job! Thanks.*
Was today's presentation informative? *Yes. One weakness: City appointed "citizen reps" did not actually represent or even know about CIO's. This was a real drawback – NOT REPRESENTATIVE. CONSTANT PROBLEM: Hearing!!!! Use LO method!*
Note: *Martinazzi is pronounced to rhyme with "snazzy", according to Loyce Martinazzi.*

Comments: *Take the 65th Bridge to the city of Rivergrove off the Plan.*
Have you visited tualatintsp.org? *No.*
How did you hear about the meeting? *City of Rivergrove*
Most effective method of contact? *Mailing.*
Could something be done differently to convey information? *Meet with citizens and council.*
Was today's presentation informative? *Somewhat.*

Comments: *Good presentation and open house. Good planning process.*

Have you visited tualatintsp.org? *Yes*
How did you hear about the meeting? *Email*

Most effective method of contact? *Email*
Could something be done differently to convey information? *Add Rivergrove members to committee.*
Was today's presentation informative? *Yes.*

Have you visited tualatintsp.org? *Yes.*
How did you hear about the meeting? *Mail, email, word of mouth.*
Most effective method of contact? *Mailing, email, city newsletter.*
Could something be done differently to convey information? *No. I think you have done a good job.*
Was today's presentation informative? *Yes, I learned a lot.*

Have you visited tualatintsp.org? *Yes.*
How did you hear about the meeting? *Email.*
Most effective method of contact? *Email.*
Was today's presentation informative? *Yes, great job of consolidating a lot of emotional request into practical projects.*

Tualatin Transportation Task Force
DRAFT Meeting #15 Summary
September 20, 2012, 5:00-8:30pm
Tualatin Police Department
8650 SW Tualatin Road
Tualatin, OR 97062

Committee Members Present

Alan Aplin – *TPC Rep.*
Allen Goodall – *Business Rep.*
Bethany Wurtz – *Tualatin Tomorrow Rep.*
Bill Beers – *TPC Rep.*
Bruce Andrus-Hughes – *TPARK*
Nic Herriges – *Alt. Citizen Rep.*
Candice Kelly – *Alt. Tualatin Tomorrow Rep.*
Cheryl Dorman – *Tualatin Chamber of Commerce*
Brian Harper (sub for Deena Platman) – *Metro*
Joelle Davis – *City Councilor*
Jan Giunta – *CIO Rep.*
Mike Riley – *CIO Rep.*
Monique Beikman – *City Councilor*
Nancy Kraushaar – *Citizen Rep.*
Steve L. Kelley – *Washington County*
Wade Brooksby – *City Councilor*
Mayor Lou Ogden – *Mayor of Tualatin*

Committee Members Absent

Amanda Hoffman – *City of Wilsonville*
Brian Barker – *TVF&R*
Charlie Benson – *Citizen Rep.*
Gail Hardinger – *Alt. Business Rep.*
Karen Buehrig – *Clackamas County*
Kelly Betteridge – *TriMet*
John Howorth – *Alt. Citizen Rep.*
Julia Hajduk – *City of Sherwood*
Judith Gray – *City of Tigard*
Lidwien Rahman – *ODOT*
Travis Evans – *Citizen Rep.*
Ray Phelps – *Business Rep.*
Ryan Boyle – *Citizen Rep.*

Public in Attendance

68 members of the public
signed in at the Open House

Staff, Project Team and Special Guests

Alice Rouyer – *City of Tualatin*
Ben Bryant – *City of Tualatin*
Dayna Webb – *City of Tualatin*
Kaaren Hofmann – *City of Tualatin*
Aquilla Hurd-Ravich– *City of Tualatin*
Cindy Hahn – *City of Tualatin*
Theresa Carr – *CH2M Hill*
Terra Lingley – *CH2M Hill*
Alan Snook – *DKS Associates*
Mat Dolata – *DKS Associates*
Eryn Kehe – *JLA Public Involvement*
Sam Beresky – *JLA Public Involvement*

TRANSPORTATION TASK FORCE MEETING #15

Eryn welcomed the group and thanked them for their attendance and participation. She let the group know that the project team is looking for feedback on:

- The modal plans
- Priorities

- 65th Avenue Extension and type of extension
- Expanding Boones Ferry Road north of downtown

Eryn said that the goal was for consensus of the Task Force. If consensus is not reached by finding a middle ground, the conversation can continue at the October 4th. If consensus is not reached at the October 4th Task Force meeting, the decision will be made by City Council.

GENERAL ITEMS
Accept Meeting #14 Summary

- *The summary was approved by all green signs of those who chose to vote.*

Announcements
There will be a Washington County open house for the 124th project on September 24th from 5:30-8:00 p.m. at the Tualatin Valley Fire and Rescue training facility.

Modal Plan Roundtable
Each task force member was asked to share their thoughts on the modal plans. Many members agreed with the modal plans while others had nothing further to share. Eryn mentioned the emailed comments (handout) from the three absent citizen representatives, Ryan, Travis, and John. Comments from present members included:

- Appreciation for the hard work of the project team with a good overall impression of the modal plans.
- Do not like the limited description of the "Chamber Shuttle", it should be referred to as a "Community Shuttle." In addition, it should not just be a west-side loop but a loop through the entire city. Some members felt that transit should be promoted as much as possible.
- Mayor Odgen said that there have been discussions with the TriMet board about pursuing a new model of shared responsibility, local community service. He let the group know that possibly Tualatin could become a test site for that kind of service.
- Councilor Brooksby appreciated the presentation of the materials and specifically liked the Freight slide.

65th Avenue Extension Discussion
It was noted that there were multiple options to discuss:

- No Build Option
- Low Build Option - Without 65th Ave Extension (three lane road, two lane bridge)
- Low Build Option - With 65th Ave Extension (five lane road, four lane bridge)

General Discussion Included:

- A member expressed a concern about learning about Rivergrove's opposition to the project at such a late date.
- During the Town Hall Forum, a Rivergrove resident said that a bridge through their town was not legally possible and would not be built. Is that true, what is possible?
    - Theresa mentioned that the 65th extension is in the current Tualatin TSP, in the Washington County TSP and the Metro Regional Transportation Plan (RTP). She mentioned that Lake Oswego and Clackamas County are currently updating their TSPs but are a little further behind Tualatin in their processes. She added that the project could be in the long term projects list and included as a refinement area in the short term to begin the conversations with Rivergrove, Lake Oswego, the counties and Metro. If the project is included in the Tualatin TSP, the project will be

part of larger regional conversation and can provide guidance for any future development in the area.

Temperature Check: Eryn asked members to indicate their support for a multi-modal 65th Avenue bridge to be included in the long-term, 10-20 year TSP project list:

- *1 red sign*
- *3 yellow signs*
- *Multiple green signs*

General Discussion Included:

- The person with the red vote said that Rivergrove is firmly against the bridge so it is a bridge to nowhere. With further discussion with Rivergrove and Lake Oswego, they could support a bike/ped only bridge.
- Members said that leaving it in the plan will keep the conversation and planning going.
- If it is kept in the long-term plan, looking that far out into the future, it is possible that it could become a benefit to both communities as an alternative to I-5, including bike/ped connections that do not exist on I-5. The type, size, and location decisions will be far down the road.
- Residents of Tualatin get upset that many roads in Tualatin are just a pass through, why would Tualatin want to do that to another community?
- It was noted that it is included in Clackamas County's 2035 TSP list at $45 million. It was felt that it should be left to Clackamas County, not Tualatin.
- Steve L. Kelley said that things do change over time and that traffic changes are not linear. He let the group know that there will be more congestion in the future and needs could change rather quickly.
- A member noted that it is the Tualatin TSP that they are working on, decisions that benefit Tualatin should be talked about.
- Members expressed that even if it is in the plan, funding and design will be 40 or 50 years into the future.
- A member said that they could possibly vote for the project if there are discussions with Lake Oswego and Rivergrove and if the project is more vague in its description, i.e., a N/S connection over the river somewhere along the east side of Tualatin.
- A member expressed a concern that the small projects and small fixes are not enough. A Westside Bypass is needed to take traffic around the region rather than through it.

Eryn asked for a second vote:

- *4 red sign*
- *2 yellow signs*
- *6 green signs*

The topic will be revisited at the October 4th Task Force meeting.

Low Build Four-lane Boones Ferry Bridge with Widening to the North – Without 65th
It was noted that at the previous Task Force Meeting that the ODOT representative stated that the bridge is not on a priority list for ODOT replacement. The technical team recommended this project but questions the high cost and minor benefits.

Temperature Check, to support adding the project:

- *6 red sign*

- *3 yellow signs*
- *3 green signs*

General Discussion Included:

- Voted red because it makes things worse in the core.
- Voted red because it creates a funnel effect.
- Voted green because of the technical recommendation, but unsure now.
- Voted green because all options are needed, it should not be removed from consideration.
- Voted green because it could eventually become part of a bigger project and should be left in the TSP as a long term option.

Eryn asked for a second vote:

- *4 red sign*
- *3 yellow signs*
- *6 green signs*

The topic will be revisited at the October 4th Task Force meeting.

Mayor Ogden asked to see travel times included in the data. Alan asked the group to email him suggested trips, point A to point B, and will model travel times for those trips.

NEXT MEETING:
October 4, 2012 – Transportation Task Force Meeting, final meeting

Meeting adjourned.

MEMORANDUM
CITY OF TUALATIN

TO: Transportation Task Force

FROM: Tualatin TSP Team

DATE: October 25, 2012

SUBJECT: Task Force Meeting – November 1, 2012

We're looking forward to the next meeting on **Thursday, November 1st at 5:00 PM** at the Police Station. The intent is for this meeting to be the final meeting of the Task Force, offering a final review of the TSP before it enters the official public hearings process. With that in mind, the Task Force will:

1. Consider and give final direction on the low build scenario (this includes all of the projects accepted by the Task Force in previous meetings and does not include Boones Ferry bridge widening or 65th bridge extension);
2. Review and consider the city-wide traffic analysis conducted since the September 20th Task Force meeting; and
3. Give direction on the Boones Ferry Road and 65th Avenue Refinement Areas.

Please be aware the city-wide traffic analysis is fairly technical. The technical team will walk through the results at the meeting.

Thanks again for your service to the City of Tualatin. See you on the 1st.

Technical Memorandum

City-Wide Traffic Analysis Results for Roadway Capacity Scenarios

PREPARED FOR:	Tualatin Transportation System Plan Project Management Team
PREPARED BY:	Theresa Carr, CH2M HILL Alan Snook, DKS & Associates Mat Dolata, DKS & Associates
COPIES:	Terra Lingley, CH2M HILL Eryn Deeming Kehe, JLA
DATE:	October 17, 2012

This memorandum highlights traffic analysis findings for six roadway infrastructure scenarios prepared for Tualatin's Transportation System Plan (TSP). The purpose is to provide information about the benefits and tradeoffs of various capacity projects being considered in the TSP, with a focus on a possible extension of 65th Avenue to the north and the possible widening of Boones Ferry Road north of Martinazzi. Both of these projects center on a crossing of the Tualatin River: the 65th Avenue extension would be a new crossing, and the Boones Ferry Road widening would be a widening of an existing crossing. This memorandum provides information to support decision makers and the community with finalizing TSP recommendations (fall of 2012). The analysis centers on mobility/access, one of the TSP's seven evaluation categories. The other evaluation categories are: safety, vibrant community, equity, economy, health and the environment, and ability to be implemented.

Information is organized into four sections: (1) project scenarios, which includes descriptions of the six scenarios analyzed; (2) results, which highlights the intersection operations, traffic volumes, and travel time changes associated with each scenario; (3) conclusions and recommendations; and (4) next steps.

Project Scenarios

What follows are descriptions of the six scenarios evaluated in this memo, and a description of the three components of the traffic analysis: (1) intersection level of service, (2) traffic volume shifts, and (3) travel times. Each of these three components reveals something different about overall system performance: from what it feels like to live near a major roadway capacity project, to how much time drivers spend waiting to proceed through an intersection, to what effect a project can have on the total amount of time it takes a driver to cross town.

Six scenarios were analyzed:

1. ***Existing conditions.*** An existing conditions analysis takes into account what drivers experience *today*. It is based on traffic counts collected in October 2011 throughout the City, site visits to

verify intersection geometry and land uses, and observed and recorded travel times (also from fall 2011). Existing conditions lay a solid foundation on which to compare all future scenarios.

2. ***Future "no build."*** This scenario takes into account the projected growth in population and employment in Tualatin and elsewhere over the next 20+ years (Year 2035), assuming the transportation network will remain the same. The only transportation projects are included in this scenario are those with funding and a subset of projects on Metro's fiscally-constrained Regional Transportation Plan (RTP), such as the extension of 124th Avenue south of Tualatin-Sherwood Road. This scenario allows us to consider what congestion concerns might arise in the future.
3. ***Future "low build."[1]*** The future "low build" scenario begins with the assumption that there will be "no build" and then adds in those projects that the Tualatin Task Force (TTF) agreed to unanimously during the evaluation and refinement area analysis meetings (May through August 2012). A list of projects included in the "low build" scenario is included below. This scenario does not include any changes to 65th Avenue or Boones Ferry Road north of Martinazzi Avenue.
4. ***Future "low build" with 65th Avenue extension.*** This scenario begins with the "low build" option and then adds an extension of 65th Avenue to the north, from Nyberg Road to the vicinity of Childs Road north of the Tualatin River. This option was analyzed with the assumption that the existing three-lane cross section of 65th Avenue between Nyberg Road and Sagert Street would be retained and the northerly extension would transition to a two-lane cross section over the river, continuing as a two-or three-lane roadway towards Lakeview Boulevard.
5. ***Future "low build" with Boones Ferry Road widening.*** This scenario begins with the "low build" option and then adds a widening of Boones Ferry Road to five lanes north of Martinazzi Avenue. The existing cross section of three lanes would be retained through Tualatin's downtown core.
6. ***Future "low build" with 65th extension and Boones Ferry Road widening.*** This scenario begins with the "low build" option and then adds a widening of Boones Ferry Road to five lanes north of Martinazzi Avenue and an extension of 65th Avenue to the north, from Nyberg Road to the vicinity of Childs Road north of the Tualatin River. This scenario is a combination of Scenarios 4 and 5.

The traffic analysis for each of these scenarios relies on both the traffic counts collected during the fall of 2011 and Metro's regional travel demand model. For each of the scenarios analyzed, major infrastructure improvements were:

(1) Coded into the Metro regional travel demand model;
(2) Post-processed to be calibrated to traffic counts taken for the TSP; and
(3) Analyzed in the Synchro operational analysis software at an intersection-specific scale.

[1] The "low-build" scenario assumes the following projects:

- Tualatin-Sherwood Road as a five lane facility (throughout Tualatin, including widening of Sherwood segment as per Regional Transportation Plan)
- Boones Ferry Road as a three lane facility for entire length
- Herman Road as a two lane facility from Teton Ave to Tualatin Road
- Tualatin Road as a "30 mph" roadway
- Signal at Teton Avenue/Tualatin Road
- Teton Avenue as a three lane road from Herman Road to Avery Street

Intersection Level of Service

An analysis of intersection-level traffic operations helps to understand the driver experience of waiting at specific intersections along the network. The wait can be long, frustrating, and—in some cases—unsafe when traffic volumes are high, when there is a mix of different types of users (e.g., railroad trains, freight trucks, bicycles), or when there are multiple approaches and traffic movements. To mitigate this, traffic engineers work to keep intersection performance within certain congestion thresholds or mobility standards. Mobility standards can vary depending on where the intersection is located, who owns (and therefore controls) it, and its main purpose.

Depending on the location, roadways and intersections are owned and operated by one of three jurisdictions: (1) City of Tualatin, (2) Washington County, or (3) the Oregon Department of Transportation (ODOT). These jurisdictions measure traffic operations in different ways – either by level of service (LOS) or by volume-to-capacity (v/c). These terms are defined below:

- Level of service (LOS): A "report card" rating (A through F) based on the average delay experienced by vehicles at the intersection. LOS A, B, and C indicate conditions where traffic moves without significant delays over periods of peak hour travel demand. LOS D and E are progressively worse operating conditions. LOS F represents conditions where average vehicle delay has become excessive and demand has exceeded capacity. This condition is typically evident in cars waiting through more than one signal cycle to get through an intersection.
- Volume-to-capacity (v/c) ratio**:** This measure is a range and represents how full an intersection is with vehicles. The ratio is similar to a percentage, for example, if a glass of water were 75 percent full, it would have a v/c ratio of 0.75. A lower ratio indicates smooth operations and minimal delays. As the ratio approaches 1.00, congestion increases and performance is reduced. If an intersection reports v/c higher than 1.0, it indicates that volumes are higher than capacity.

The City of Tualatin uses a LOS standard; depending on intersection type, the acceptable standard is either LOS D or LOS E. Washington County and ODOT use a v/c standard, which compares traffic volumes to intersection capacity. Both agencies define the acceptable mobility standard at or under a 0.99 v/c.

The next section of this memorandum compares intersection-level performance with congestion thresholds at these intersections:

1. Along Tualatin-Sherwood Road
    a. Tualatin-Sherwood Road/124th Avenue
    b. Tualatin-Sherwood Road/Boones Ferry Road
    c. Tualatin-Sherwood Road/Martinazzi Avenue
2. Along Boones Ferry Road
    a. Boones Ferry Road/Tualatin-Sherwood Road
    b. Boones Ferry Road/Tualatin Road
    c. Boones Ferry Road/Martinazzi Avenue
    d. Boones Ferry Road/Lower Boones Ferry Road
3. Along 65th Avenue
    a. 65th Avenue/Sagert Street
    b. 65th Avenue/Borland Road
    c. 65th Avenue/Nyberg Road

Shifts in Traffic Volumes from One Roadway to Another

Coding infrastructure improvements into Metro's travel demand model—Step 1 of the analysis process outlined at the top of this page—will provide key outputs that will be helpful in understanding the major trends of specific infrastructure projects. One of those trends is traffic volume shifts. Volume shifts provide an understanding of the scale of activity both at new connections and at the existing connections that are "relieved" by a new one. For example, when a new roadway is added to the network, volume shift diagrams help illustrate the number of trips that involve the new roadway, and—of those trips—how many are new trips versus those that have been diverted from elsewhere in the system. This analysis is only relevant to Scenarios 4-6, as these are the scenarios which introduce one or both of the river crossing projects that could affect traffic routing. Further, volume shifts were only recorded for these key roadways:

- Tualatin Road
- Herman Road
- 99W
- I-5
- Boones Ferry Road
- Tualatin-Sherwood Road
- Martinazzi Avenue
- Sagert Street
- Borland Road
- 65th Avenue
- Nyberg Road

Travel Time

Travel time is one of the most intuitive measures of traffic performance. Drivers know the amount of time it takes to get from one place to another, and the extent to which congestion can change travel times. What follows is a comparison of travel times, for each scenario, between these key north-south and east-west destination pairs:

- Boones Ferry Road
  - Tualatin High School to Bridgeport Village
  - Tualatin High School to Nyberg Interchange
- Tualatin Road
  - 115th/Tualatin to Bridgeport Village
  - 115th/Tualatin to Nyberg Interchange
- Tualatin-Sherwood Road (TSR)
  - TSR/Cipole Road to Bridgeport Village
  - TSR/Cipole Road to Nyberg Interchange
- Borland Road and 65th Avenue
  - Bridgeport Elementary School to Nyberg Interchange
  - Sagert/65th to Bridgeport Village

Results

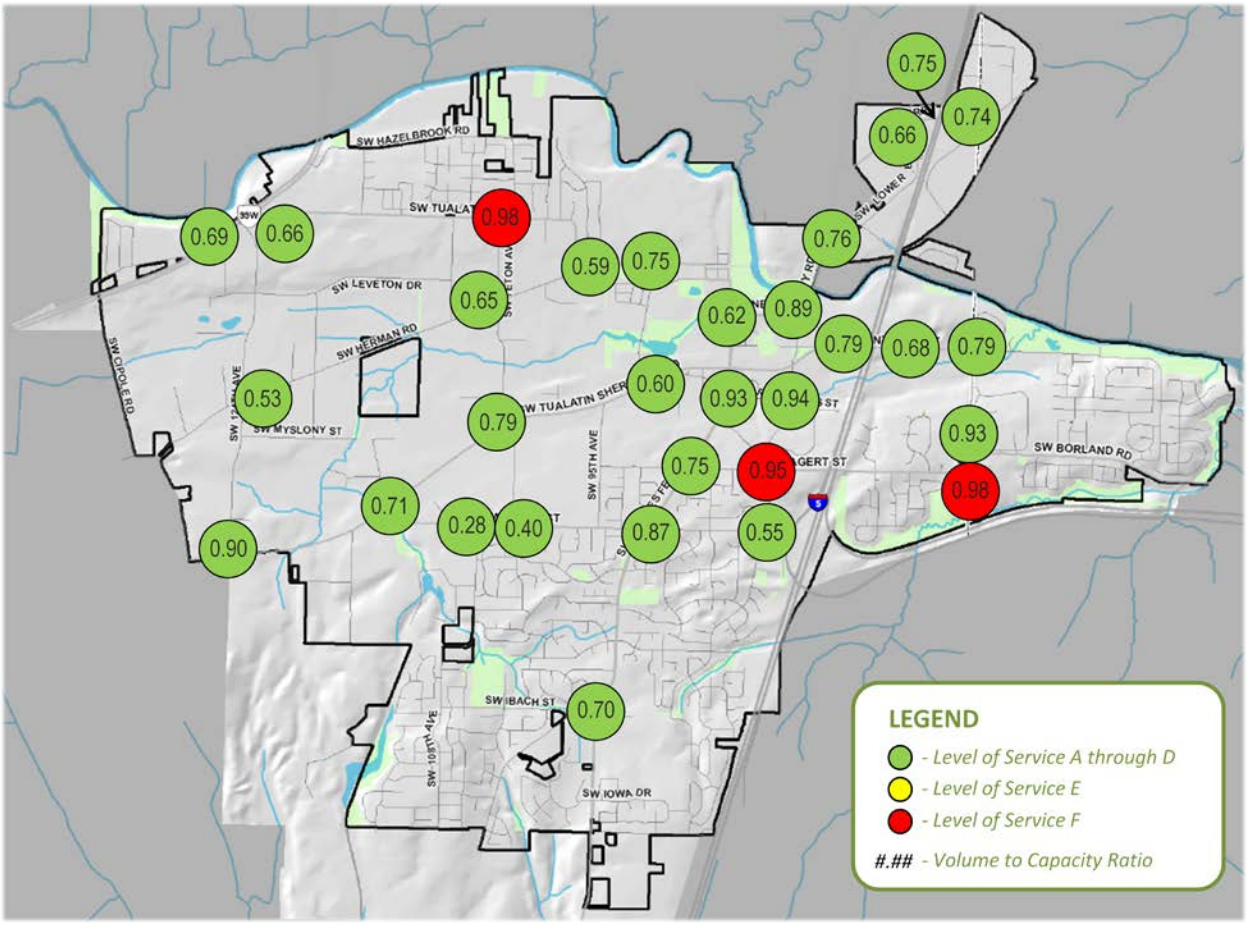
This section includes a description of findings from intersection operations, traffic volume shifts, and travel times for each of the scenarios outlined in the previous section. Appendix A provides the traffic operations results by scenario with and without intersection-level optimizations.

Scenario 1: Existing Conditions

Traffic Operations

Figure 1 shows traffic conditions for all 30 study intersections in Tualatin as of October 2011. It is based on counts collected on weekdays during the morning (7:00 a.m.to 9:00 a.m.) and afternoon (4:00 p.m. to 6:00 p.m.) traffic rush hours. In addition, 24-hour counts were conducted at 11 locations on key roadways in Tualatin to provide an understanding of the fluctuations in traffic throughout the day and night. Figure 1 illustrates the current operations within the City of Tualatin. Green circles indicate the intersection meets City accepted standards and red circles indicate that standards are not met. Numbers within the circles indicate the intersection v/c ratio. Three intersections currently do not meet City accepted standards: (1) Tualatin Road/Teton Road, which performs at an LOS F with a v/c ratio of 0.98, (2) 65th Avenue/Sagert Street, which performs at an LOS F with a v/c ratio of 0.98; and (3) Martinazzi Avenue/Sagert Street, which performs at an LOS F with a v/c ratio of 0.95.

Figure 1. Intersection Operations, Existing Conditions



Travel Times

In addition to intersection and daily volume profiles, the project team collected corridor data related to travel times and speeds during the p.m. peak period. These travel times are recorded in Table 1 below. As can be seen, it takes between 9 and 10 minutes to drive north-south through Tualatin on Boones Ferry Road, and between 11 and 13 minutes to drive east-west through the City on Tualatin-Sherwood Road. These current travel times are compared to various future scenarios in the pages that follow.

TABLE 1
Existing (2011) P.M. Peak Period (4:00 p.m. to 6:00 p.m.) Travel Time Data

Corridor	From	To	Average Travel Time
SW Boones Ferry Road	Tualatin High School	Bridgeport Village	10 min, 20 sec
	Bridgeport Village	Tualatin High School	9 min, 10 sec
SW Boones Ferry Road	Tualatin High School	Nyberg Interchange	7 min, 25 sec
	Nyberg Interchange	Tualatin High School	7 min, 5 sec
SW Tualatin Road	115th Avenue	Bridgeport Village	8 min, 35 sec
	Bridgeport Village	115th Avenue	8 min, 30 sec
SW Tualatin Road	115th Avenue	Nyberg Interchange	8 minutes
	Nyberg Interchange	115th Avenue	8 min, 40 sec
SW Tualatin-Sherwood Road	Cipole Road	Bridgeport Village	11 min, 40 sec
	Bridgeport Village	Cipole Road	13 minutes
SW Tualatin-Sherwood Road	Cipole Road	Nyberg Interchange	8 min, 40 sec
	Nyberg Interchange	Cipole Road	10 min, 10 sec
SW Borland Road / 65th Ave	Bridgeport Elementary	Nyberg Interchange	3 min, 10 sec
	Nyberg Interchange	Bridgeport Elementary	2 min, 20 sec
SW Borland Road / 65th Ave	Bridgeport Elementary	Bridgeport Village	9 min, 10 sec
	Bridgeport Village	Bridgeport Elementary	8 min, 25 sec

SOURCE: All Traffic Data, November 2011 (Existing), Metro Travel Demand Forecast Model (2035)
NOTE: All travel times are rounded to the nearest 5 seconds

Scenario 2: Future "No Build" (2035)

Traffic Operations

By 2035, there will be much more congestion throughout the network in Tualatin, both along Tualatin-Sherwood Road (intersection with Teton Road, Boones Ferry Road, and Martinazzi Avenue), along Boones Ferry Road (intersections with Lower Boones Ferry Road, Martinazzi Avenue, Tualatin-Sherwood Road, Sagert Road, and Avery Street), along Teton Avenue (intersections with Tualatin Road, Tualatin-Sherwood Road, and Avery Street), and along 65th Avenue (intersections with Borland Road and Sagert Street). Operations are illustrated in Figure 2 below.

Travel Times

Travel times are summarized in Table 2 for the future (Year 2035) "no build" scenario. Travel times in the north-south direction would increase over existing conditions substantially, from between 9 and 10 minutes to between 12 and 15 minutes. Travel time increases would be more dramatic in the east-west direction: from between 11 and 13 minutes to approximately 17 minutes. Table 2 shows the travel time differences between the future no build and existing conditions. In most instances travel times increase by at least one minute. Some locations travel times increase by over 4 minutes – for example between Tualatin High School and Bridgeport Village, between 115th Avenue and Bridgeport Village, and between Bridgeport Village and Cipole Road. One destination pairing (Bridgeport Village to Bridgeport Elementary) saw a travel time increase of 6 minutes.

Figure 2. Intersection Operations, Future (2035) "No Build" Conditions

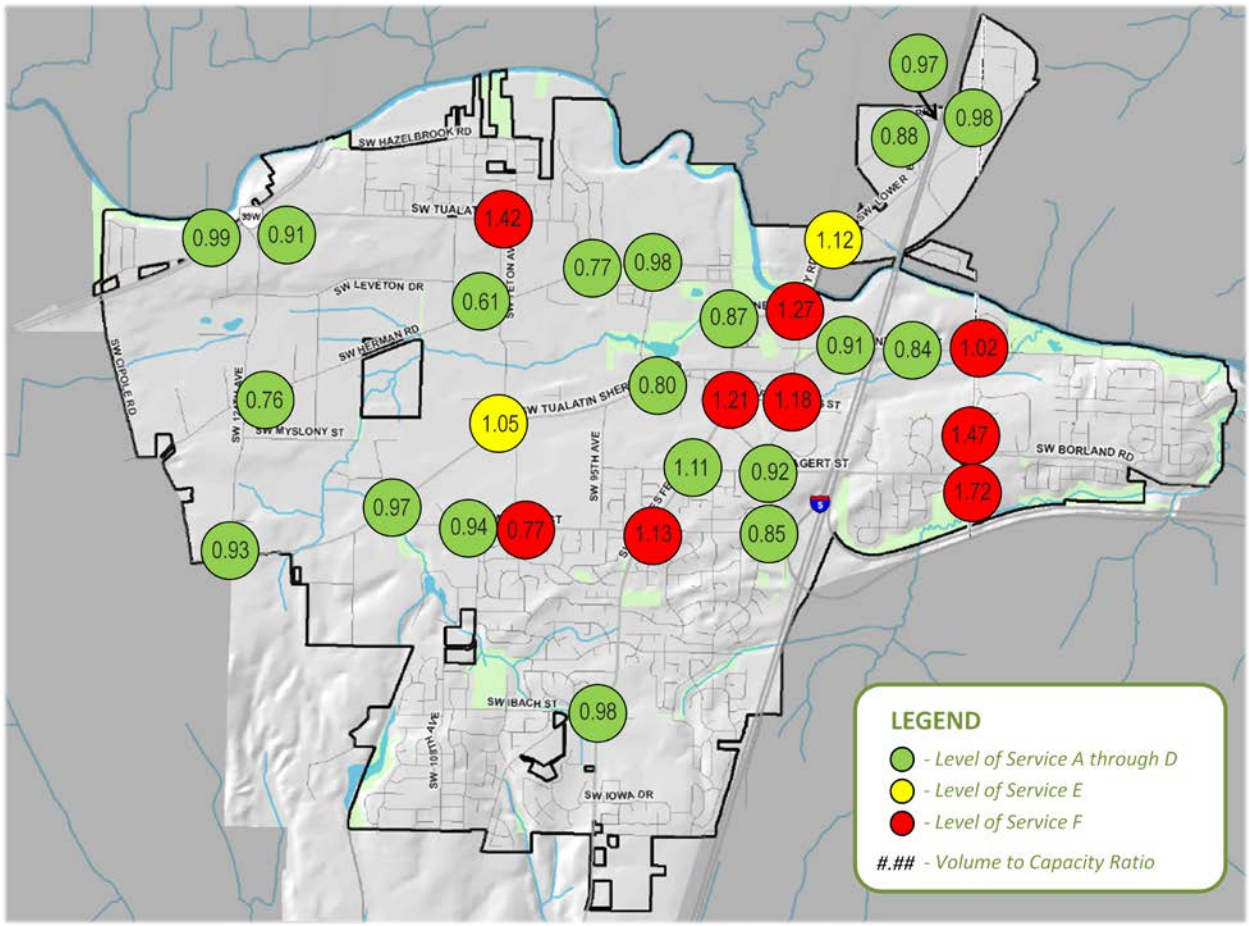


TABLE 2
Future (2035) "No Build" P.M. Peak Period (4:00 p.m. to 6:00 p.m.) Travel Time Data

Corridor	From	To	Average Travel Time	Difference from Existing Conditions
SW Boones Ferry Road	Tualatin High School	Bridgeport Village	15 min, 5 sec	+4 min, 45 sec
	Bridgeport Village	Tualatin High School	12 min, 10 sec	+3 min
SW Boones Ferry Road	Tualatin High School	Nyberg Interchange	9 min, 40 sec	+2 min, 15 sec
	Nyberg Interchange	Tualatin High School	8 min, 10 sec	+1 min, 5 sec
SW Tualatin Road	115th Avenue	Bridgeport Village	13 minutes	+4 min, 25 sec
	Bridgeport Village	115th Avenue	11 min, 40 sec	+3 min, 10 sec
SW Tualatin Road	115th Avenue	Nyberg Interchange	10 min, 35 sec	+2 min, 35 sec
	Nyberg Interchange	115th Avenue	10 min, 25 sec	+1 min, 45 sec
SW Tualatin-Sherwood Road	Cipole Road	Bridgeport Village	17 minutes	+5 min, 20 sec
	Bridgeport Village	Cipole Road	17 min, 20 sec	+ 4min, 20 sec
SW Tualatin-Sherwood Road	Cipole Road	Nyberg Interchange	11 minutes 35 sec	+2min, 55 sec
	Nyberg Interchange	Cipole Road	11 min, 50 sec	+1 min, 45 sec
SW Borland Road / 65th Ave	Bridgeport Elementary	Nyberg Interchange	3 min, 20 sec	+15 sec
	Nyberg Interchange	Bridgeport Elementary	3 min, 30 sec	+1 min, 10 sec
SW Borland Road / 65th Ave	Bridgeport Elementary	Bridgeport Village	12 min, 55 sec	+3 min, 45 sec
	Bridgeport Village	Bridgeport Elementary	14 min, 25 sec	+6 min

SOURCE: All Traffic Data, November 2011 (Existing), Metro Travel Demand Forecast Model (2035)
NOTE: All travel times are rounded to the nearest 5 seconds

Scenario 3: Future "Low Build"

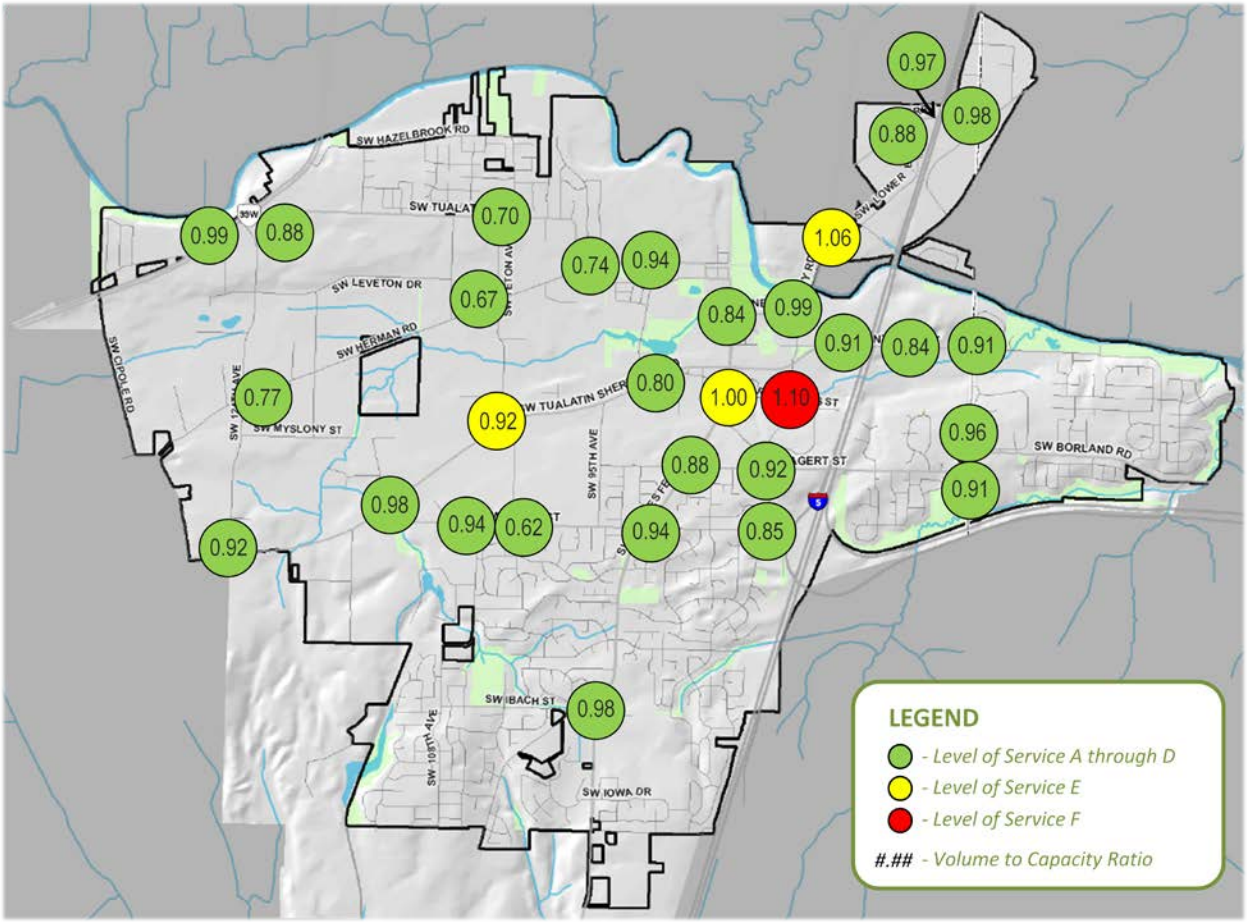
Traffic Operations

As described above, the future "low build" scenario serves as a starting point that represents all of the roadway infrastructure projects agreed to by the Task Force, Planning Commission, Tualatin Parks Advisory Committee, and City Council through the project evaluation and refinement area evaluation phases of the TSP. These include widening Tualatin-Sherwood Road between Cipole and Teton Roads, widening Teton Road to three lanes, and other intersection-specific treatments.

Raw outputs from the traffic model Synchro (as shown in Appendix A) indicate that up to ten study intersections have a v/c higher than 1.0 and/or LOS of F. However, intersections can be optimized to improve performance through one or more of these treatments:

- Signal timing adjustments
- Adding a turn lane in one or two directions (such as an eastbound left-turn lane)
- Restriping an approach lane to allow turn movements from two lanes instead of one
- Restricting a driveway approach to right-in, right-out (only used if traffic volumes entering facility are very low)

Figure 3. Intersection Operations, Future (2035) "Low Build"



With adjustments, traffic operations can improve. As shown in Figure 3, three intersections would operate with v/c at or higher than 1.0; two of these (Boones Ferry Road/Lower Boones Ferry Road and Boones Ferry Road/Tualatin-Sherwood Road) would operate at an LOS E and one (Boones Ferry Road

and Martinazzi Avenue) operates at an LOS F. One additional intersection (Tualatin-Sherwood Road and Teton Avenue) would operate at an LOS E, but meets Washington County standards with a v/c of 0.92.

Travel Times

Travel times are summarized in Table 3 for the future (Year 2035) "low build" scenario.

TABLE 3
Future (2035) "Low Build" P.M. Peak Period (4:00 a.m. to 6:00 p.m.) Travel Time Data

Corridor	From	To	Average Travel Time	Difference from Future No Build
SW Boones Ferry Road	Tualatin High School	Bridgeport Village	15 min, 5 sec	No difference
	Bridgeport Village	Tualatin High School	12 min, 10 sec	No difference
SW Boones Ferry Road	Tualatin High School	Nyberg Interchange	9 min, 40 sec	No difference
	Nyberg Interchange	Tualatin High School	8 min, 10 sec	No difference
SW Tualatin Road	115th Avenue	Bridgeport Village	13 min, 30 sec	+30 sec
	Bridgeport Village	115th Avenue	12 minutes	+20 sec
SW Tualatin Road	115th Avenue	Nyberg Interchange	10 min, 55 sec	+20 sec
	Nyberg Interchange	115th Avenue	10 min, 50 sec	+25 sec
SW Tualatin-Sherwood Road	Cipole Road	Bridgeport Village	17 minutes	No difference
	Bridgeport Village	Cipole Road	17 min, 25 sec	+5 sec
SW Tualatin-Sherwood Road	Cipole Road	Nyberg Interchange	11 min, 35 sec	No difference
	Nyberg Interchange	Cipole Road	12 minutes	+10 sec
SW Borland Road / 65th Ave	Bridgeport Elementary	Nyberg Interchange	3 min, 20 sec	No difference
	Nyberg Interchange	Bridgeport Elementary	3 min, 30 sec	No difference
SW Borland Road / 65th Ave	Bridgeport Elementary	Bridgeport Village	12 min, 50 sec	-5 sec
	Bridgeport Village	Bridgeport Elementary	14 min, 25 sec	No difference

SOURCE: All Traffic Data, November 2011 (Existing), Metro Travel Demand Forecast Model (2035)
NOTE: All travel times are rounded to the nearest 5 seconds

Travel times in the north-south direction would not change from the "no build" condition, and would increase slightly over the "no build" condition in the east-west direction.

Scenario 4: Future "Low Build" with 65th Avenue Extension

Traffic Operations

Scenario 4 is the future "low build" (Scenario 3) with the extension of 65th Avenue to the north over the Tualatin River. Under this scenario, the cross section of 65th Avenue would remain three lanes between Nyberg Road and Sagert Street and then transition to two lanes south of Sagert Street. The northerly extension would involve three lanes transitioning to a two-lane bridge over the Tualatin River, connecting with 65th Avenue in Rivergrove in the vicinity of Childs Road.

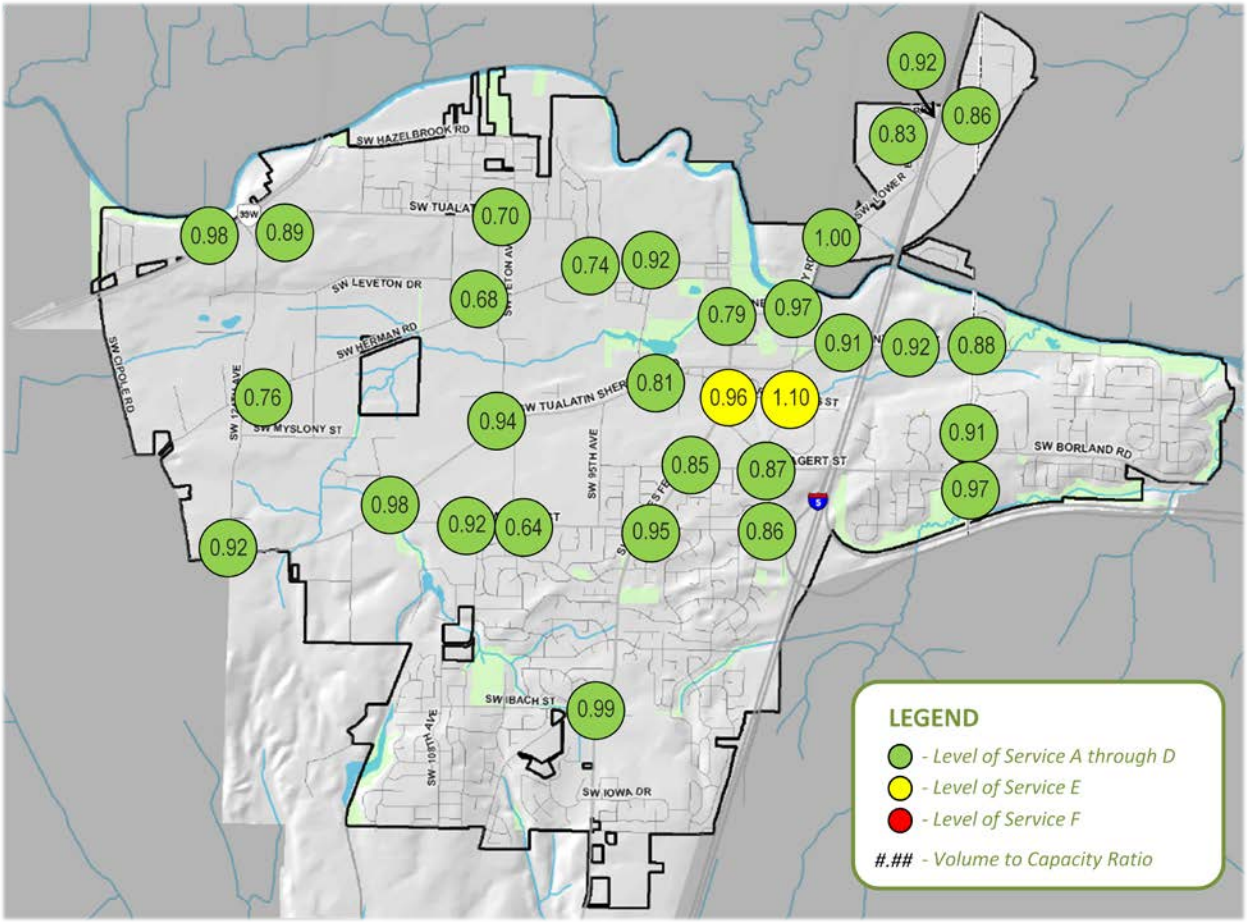
Raw outputs from the traffic model Synchro, as shown in Appendix A, indicate that up to 10 study intersections would have a v/c higher than 1.0 and/or LOS of F. However, when optimized to improve performance, traffic operations would improve. Figure 4 illustrates the traffic operations at all study intersections. Those intersections which show an improvement over the "low build" scenario alone are highlighted in Table 4 below.

TABLE 4
Future (2035) Operational Analysis Comparison between Scenario 3 and Scenario 4

	Scenario 3 ("Low Build")		Scenario 4 ("Low Build" with 65th Extension)	
	LOS	V/C	LOS	V/C
I-5 NB Ramps and SW Lower Boones Ferry Road	D	0.98	C	0.86
I-5 SB Ramps and SW Lower Boones Ferry Road	D	0.97	D	0.92
SW 72nd Avenue and Lower Boones Ferry Road and Bridgeport Road	D	0.88	D	0.83
SW Boones Ferry Road and SW Lower Boones Ferry Road	E	1.12	D	1.00
SW Tualatin Road and SW Boones Ferry Road	C	0.87	C	0.79
SW Boones Ferry Road and SW Tualatin-Sherwood Road	F	1.21	E	0.96

Scenario 4 shows only one intersection (Boones Ferry Road/Martinazzi Avenue) operating with v/c higher than 1.0, and one intersection (Boones Ferry Road/Lower Boones Ferry Road) operates at a v/c of a 1.0. No intersections would operate with an LOS F. Two intersections (Boones Ferry Road/Martinazzi Avenue and Boones Ferry Road/Tualatin-Sherwood Road) would operate at an LOS E. In this scenario, Boones Ferry Road/Tualatin-Sherwood Road would meet Washington County standards with a v/c of 0.96.

Figure 4. Intersection Operations, Future (2035) "Low Build" with 65th Avenue Extension



Traffic Volume Shifts

In this scenario, traffic volumes would shift to 65th Avenue and drivers would use the new crossing between Tualatin and Lake Oswego/Rivergrove. Moderate increases in traffic volumes would occur along 65th Avenue between Nyberg Street and Sagert Street and between Childs Road and Lakeview Boulevard. Minor increases in traffic would occur south of Sagert Street to Norwood Road, along Childs Road, along Sagert Street, and along Nyberg Road east of 65th Avenue. Traffic volumes would decrease along I-5 between the Lower Boones Ferry Road and Nyberg Road interchanges, which indicates that some drivers would take I-5 for short, local trips in this location. Minor to moderate traffic decreases would also occur on Boones Ferry Road between Lower Boones Ferry Road and Sagert Street and along Stafford Road.

Travel Times

Travel times are summarized in Table 5 below for the future (Year 2035) "low build" scenario with an extension of 65th Avenue over the Tualatin River.

TABLE 5
Future (2035) "Low Build" with 65th Avenue Extension P.M. Peak Period (4:00 p.m. to 6:00 p.m.) Travel Time Data

Corridor	From	To	Average Travel Time	Difference from Future "No Build"
SW Boones Ferry Road	Tualatin High School	Bridgeport Village	13 min, 40 sec	-1 min, 25 sec
	Bridgeport Village	Tualatin High School	11 min, 20 sec	-50 sec
SW Boones Ferry Road	Tualatin High School	Nyberg Interchange	10 min	+20sec
	Nyberg Interchange	Tualatin High School	8 min, 25 sec	+15 sec
SW Tualatin Road	115th Avenue	Bridgeport Village	12 min, 20 sec	-40 sec
	Bridgeport Village	115th Avenue	11 min, 25 sec	-15 sec
SW Tualatin Road	115th Avenue	Nyberg Interchange	11 min, 10 sec	+35 sec
	Nyberg Interchange	115th Avenue	11 min	+35 sec
SW Tualatin-Sherwood Road	Cipole Road	Bridgeport Village	16 min	-1 min
	Bridgeport Village	Cipole Road	16 min 25 sec	-55 sec
SW Tualatin-Sherwood Road	Cipole Road	Nyberg Interchange	12 min	+25 sec
	Nyberg Interchange	Cipole Road	12 min, 25 sec	+40 sec
SW Borland Road/65th Ave	Bridgeport Elementary	Nyberg Interchange	3 min, 20 sec	No difference
	Nyberg Interchange	Bridgeport Elementary	3 min, 30 sec	No difference
SW Borland Road/65th Ave	Bridgeport Elementary	Bridgeport Village	10 min, 40 sec	-2 min, 15 sec
	Bridgeport Village	Bridgeport Elementary	12 min, 10 sec	-2 min, 15 sec

SOURCE: All Traffic Data, November 2011 (Existing), Metro Travel Demand Forecast Model (2035)

NOTE: All travel times have been rounded to the nearest 5 seconds

Travel times would decrease under this scenario by approximately 1 minute among various destination pairs. This difference is most notable for travel times extending through Tualatin either north-south or east-west. This is due to the fact that the main east-west pairing would actually extend northward along Boones Ferry Road and would benefit from the lower traffic volumes on Boones Ferry Road. In addition, however, travel times between Bridgeport Elementary School near Borland Road and 65th Avenue and Bridgeport Village would decrease by more than 2 minutes in both directions (northbound and southbound).

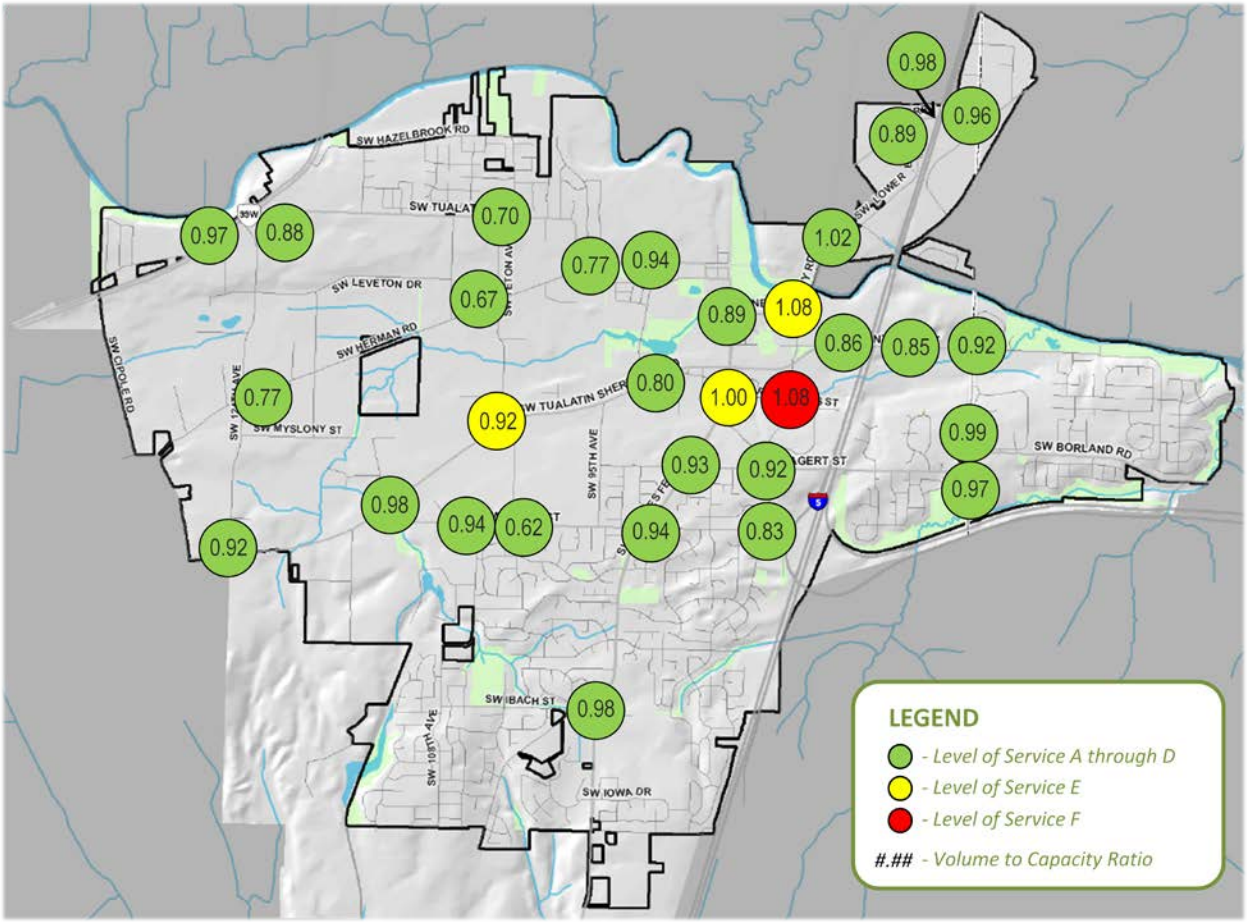
Scenario 5: Future "Low Build" with Boones Ferry Road Widening

Traffic Operations

Scenario 5 is the future "low build" (Scenario 3) with the widening of Boones Ferry Road to five lanes north of Martinazzi Avenue. Under this scenario, the cross section of 65th Avenue would remain three lanes between Nyberg Road and Sagert Street and not be extended north over the Tualatin River. Boones Ferry Road would be widened to a five lane section between Martinazzi at the south and Lower Boones Ferry Road at the north, replacing the existing two lane structure over the Tualatin River with a four lane structure.

Raw outputs from the traffic model Synchro (as shown in Appendix A) indicate that up to 12 study intersections would have a v/c higher than 1.0 and/or LOS of F. However, when optimized to improve performance, traffic operations would improve so that 4 intersections operate at a v/c at or above 1.0. As shown in Figure 5, these are: Boones Ferry Road/Tualatin-Sherwood Road, Martinazzi Avenue/Tualatin-Sherwood Road, Martinazzi Avenue/Boones Ferry Road, and Boones Ferry Road/Lower Boones Ferry Road. In this scenario, Boones Ferry Road/Lower Boones Ferry Road improves slightly but not sufficiently by itself to meet ODOT standards. In addition, conditions worsen at the intersection of Martinazzi/Boones Ferry Road as this intersection represents where the cross section tapers back to its original three lane section through the heart of downtown Tualatin. Additional volumes cause congestion at this intersection.

Figure 5. Intersection Operations, Future "Low Build" with Boones Ferry Road Widening



Another observation is that traffic diverts in this scenario from Tualatin-Sherwood Road to Sagert Street, as it becomes quicker to stay on Boones Ferry Road. This worsens conditions slightly along Sagert Street, as seen at both the Boones Ferry Road and 65th Avenue intersections. However, conditions improve slightly along Tualatin-Sherwood Road between Boones Ferry Road and 65th Avenue.

Traffic Volume Shifts

Widening this segment of Boones Ferry Road diverts trips from I-5 to Boones Ferry Road between the Lower Boones Ferry Road and Tualatin-Sherwood Road interchanges. Shifts are moderate on Boones Ferry Road between Tualatin Road and Lower Boones Ferry Road, and minor north and south of these intersections.

Travel Times

Travel times for Scenario 5 are highlighted in Table 6 below.

TABLE 6
Future (2035) "Low Build" with Boones Ferry Road Widening P.M. Peak Period (4:00 P.M. to 6:00 P.M.) Travel Time Data

Corridor	From	To	Average Travel Times	Difference from Future No Build
SW Boones Ferry Road	Tualatin High School	Bridgeport Village	13 min, 40 sec	-1 min, 25 sec
	Bridgeport Village	Tualatin HS	11 min, 30 sec	-40 sec
SW Boones Ferry Road	Tualatin High School	Nyberg Interchange	9 min, 40 sec	No difference
	Nyberg Interchange	Tualatin HS	8 min, 10 sec	No difference
SW Tualatin Road	115th Avenue	Bridgeport Village	12 min, 30 sec	-30 sec
	Bridgeport Village	115th Avenue	11 min, 20 sec	-20 sec
SW Tualatin Road	115th Avenue	Nyberg Interchange	10 min, 55 sec	+20 sec
	Nyberg Interchange	115th Avenue	10 min, 40 sec	+15 sec
SW Tualatin-Sherwood Road	Cipole Road	Bridgeport Village	15 min, 50 sec	-1 min, 10 sec
	Bridgeport Village	Cipole Road	16 min, 40 sec	-40 sec
SW Tualatin-Sherwood Road	Cipole Road	Nyberg Interchange	11 min, 35 sec	No difference
	Nyberg Interchange	Cipole Road	12 minutes	+10 sec
SW Borland Road / 65th Avenue	Bridgeport Elementary	Nyberg Interchange	3 min, 25 sec	+5 sec
	Nyberg Interchange	Bridgeport Elementary	3 min, 30 sec	No difference
SW Borland Road / 65th Avenue	Bridgeport Elementary	Bridgeport Village	12 min, 10 sec	-45 sec
	Bridgeport Village	Bridgeport Elementary	13 min, 40 sec	-45 sec

SOURCE: All Traffic Data, November 2011 (Existing), Metro Travel Demand Forecast Model (2035)
NOTE: All travel times are rounded to the nearest 5 seconds

The travel time savings associated with this scenario are similar to what is seen under Scenario 4 ("low build" with 65th Avenue extension), with the notable exception of travel times between Bridgeport Elementary School in the vicinity of 65th Avenue / Borland Road and Bridgeport Village. Scenario 4 sees a travel time savings of over 2 minutes due to the extension of 65th Avenue whereas Scenario 5 sees a 45 second travel time increase. Other destination pairings, such as Tualatin High School/ Bridgeport Village, and Cipole Road/Bridgeport Village, see over a 1 minute travel time savings due to the widening of Boones Ferry Road.

Scenario 6: Future "Low Build" with 65th Avenue Extension and Boones Ferry Road Widening

Traffic Operations

Scenario 6 illustrates traffic operations when both Boones Ferry Road is widened north of Martinazzi Avenue and when 65th Avenue is extended northward over the Tualatin River. Raw outputs from the Synchro model show that up to nine intersections operate at a v/c of 1.0 or an LOS of F. However, by implementing such mitigations as signal timing modifications, restriping, and turn pockets at intersections, operations can be improved so that only two intersections (Martinazzi/Tualatin-Sherwood Road and Martinazzi/Boones Ferry Road) would continue to operate within failing conditions. In addition, operations would be much improved at several intersections under this scenario, as shown in the table below.

Although the operations improvements at the intersection of Boones Ferry Road and Tualatin-Sherwood Road would be slight, they would bring the intersection within the 0.99 v/c threshold and are thus reported here. Under this scenario, there would be substantial improvements at the intersection of Boones Ferry Road and Lower Boones Ferry Road and at the intersection of I-5 and Lower Boones Ferry Road, with better mobility from a combination of additional capacity along Boones Ferry Road and an alternate route east of I-5.

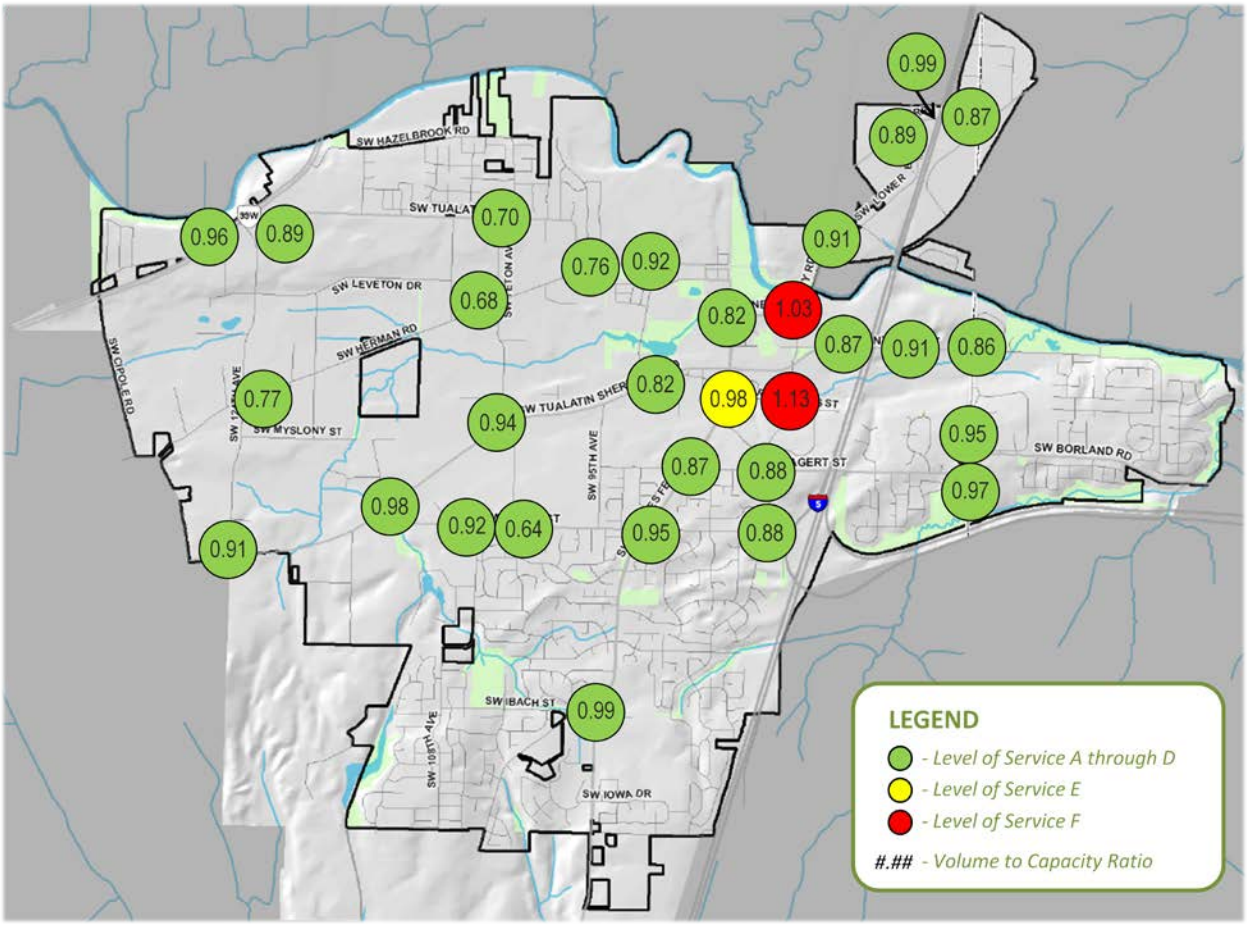
TABLE 7
Future (2035) Operational Analysis Comparison between Scenario 3 and Scenario 6

	Scenario 3 ("Low Build")		Scenario 6 ("Low Build" with 65th Extension and Boones Ferry Road Widening)	
	LOS	V/C	LOS	V/C
Boones Ferry/Tualatin-Sherwood Road	E	1.0	E	0.98
I-5 SB Ramps and Nyberg Road	D	0.91	C	0.87
Boones Ferry Road / Lower Boones Ferry Road	E	1.06	C	0.91
I-5 NB Ramps and Lower Boones Ferry Road	D	0.98	C	0.87
Martinazzi/Sagert	D	0.92	D	0.88
65th/Nyberg	C	0.91	C	0.86

Traffic Volume Shifts

Traffic volumes shift to 65th Avenue under this scenario, though with fewer shifts than under Scenario 4. Moderate increases in traffic volumes would occur along 65th Avenue between Nyberg Street and Sagert Street and between Childs Road and Lakeview Boulevard. Minor increases would continue south of Sagert Street to Norwood Road, along Childs Road, along Sagert Street, and along Nyberg Road east of 65th Avenue. Traffic volumes would decrease along I-5 between the Lower Boones Ferry Road and Nyberg Road interchanges, which indicates that some drivers would take I-5 for short, local trips in this location. Unlike Scenario 4, minor increases would occur on Boones Ferry Road between Lower Boones Ferry Road and Sagert Street, due to the extra capacity along that corridor.

Figure 6. Intersection Operations, Future (2035) "Low Build" with 65th Avenue Extension and Boones Ferry Road Widening



Travel Times

Travel times are summarized in Table 8 below for the future (Year 2035) "low build" scenario with an extension of 65th Avenue over the Tualatin River and a widening of Boones Ferry Road north of Martinazzi.

TABLE 8
Future (2035) "Low Build" with 65th Avenue Extension and Boones Ferry Road Widening P.M. Peak Period (4:00 P.M. to 6:00 P.M.) Travel Time Data

Corridor	From	To	Average Travel Times	Difference from Future No Build
SW Boones Ferry Road	Tualatin High School	Bridgeport Village	12 min, 35 sec	-2 min, 30 sec
	Bridgeport Village	Tualatin High School	10 min, 35 sec	-1 min, 35 sec
SW Boones Ferry Road	Tualatin High School	Nyberg Interchange	9 min, 50 sec	+10 sec
	Nyberg Interchange	Tualatin High School	8 min, 25 sec	+15 sec
SW Tualatin Road	115th Avenue	Bridgeport Village	11 min, 30 sec	-1 min, 30 sec
	Bridgeport Village	115th Avenue	10 min, 55 sec	-45 sec
SW Tualatin Road	115th Avenue	Nyberg Interchange	11 minutes	+25 sec
	Nyberg Interchange	115th Avenue	10 min, 55 sec	+30 sec
SW Tualatin-Sherwood Road	Cipole Road	Bridgeport Village	14 min, 55 sec	-2 min, 5 sec
	Bridgeport Village	Cipole Road	15 min, 40 sec	-1 min, 40 sec
SW Tualatin-Sherwood Road	Cipole Road	Nyberg Interchange	11 min, 50 sec	+15 sec
	Nyberg Interchange	Cipole Road	12 min, 20 sec	+30 sec
SW Borland Road / 65th	Bridgeport Elementary	Nyberg Interchange	3 min, 30 sec	+10 sec

TABLE 8
Future (2035) "Low Build" with 65th Avenue Extension and Boones Ferry Road Widening P.M. Peak Period (4:00 P.M. to 6:00 P.M.) Travel Time Data

Corridor	From	To	Average Travel Times	Difference from Future No Build
Avenue	Nyberg Interchange	Bridgeport Elementary	3 min, 30 sec	No difference
SW Borland Road / 65th	Bridgeport Elementary	Bridgeport Village	10 min, 25 sec	-2 min, 30 sec
Avenue	Bridgeport Village	Bridgeport Elementary	11 min, 50 sec	-2 min, 35 sec

SOURCE: All Traffic Data, November 2011 (Existing), Metro Travel Demand Forecast Model (2035)
NOTE: All travel times are rounded to the nearest 5 seconds

Travel time decreases under this scenario would be dramatic for some destination pairings. Between Tualatin High School and Bridgeport Village and between Bridgeport Elementary School and Bridgeport Village, for example, there are travel time savings of greater than 2 minutes. For traffic to and from the west (Tualatin Road, Cipole Road, 115th Avenue), there would be a travel time savings greater than a minute.

Conclusions

Looking at the six scenarios as a whole, we see that Tualatin is somewhat congested now, and becomes very congested in the future. The main roadways of Tualatin-Sherwood Road, Boones Ferry Road, 65th Avenue, Teton Avenue, and SW Avery Street bear the burden of this congestion, as observed in both intersection operations and travel times. In some locations, it is expected to take 6 minutes longer to travel across town than it does today.

The "low build" scenario does a fair job of mitigating intersection level problems. Adding signals, restriping lanes, and adding turn pockets by themselves can move cars more quickly through any given intersection but travel times show that conditions on the roadway sections between intersections remain congested. "Low build" travel times are no different than those seen under future no build.

Scenario 4, which combines the "low build" projects with the 65th Avenue extension, improves both intersection conditions and travel times. Travel time savings are seen for cross-town trips in both the north/south and east/west direction, but are most dramatic in the vicinity of 65th Avenue (between Bridgeport Elementary School and Bridgeport Village), where travel time reductions are in excess of two minutes.

Scenario 5, which combines the "low build" with widening Boones Ferry Road north of Martinazzi, displays similar travel time benefits to Scenario 4 except for this last pairing, which is purely a benefit of the 65th Avenue extension. Scenario 5 maintains much of the intersection level operations as under the "low build" and improves conditions at the Boones Ferry Road/Lower Boones Ferry Road intersection through additional capacity. Conditions at the Boones Ferry Road/Martinazzi Avenue intersection are worsened because this is the location that the roadway transitions back to its existing three lane section.

Scenario 6 intersection operations show that more traffic flows along Boones Ferry Road, but that capacity projects at Boones Ferry Road / Lower Boones Ferry Road accommodate some of this traffic. Operations from Scenario 6 are improved along sections of Tualatin-Sherwood Road, Boones Ferry Road, and along 65th Avenue. Of concern for Scenario 6 are the two Martinazzi intersections (Boones Ferry Road and Tualatin-Sherwood Road) which experience worsened traffic congestion in the afternoon rush hour. When intersection conditions are considered in combination with travel time savings, Scenario 6 benefits Tualatin more than any other scenario. Travel time savings in the north/south and east/west

directions are in excess of 2 minutes (Tualatin High School/Bridgeport Village, Cipole Road/Bridgeport Village, Bridgeport Elementary School/Bridgeport Village).

Next Steps

The Tualatin TSP is available in draft form as all project, program, and policy recommendations have been identified apart from the two river crossings described in this memorandum. At its next meeting, the Transportation Task Force will use the traffic analysis results to make a recommendation on which, if any, river crossing projects should be included in the TSP. This recommendation will then be taken into consideration by the Tualatin Planning Commission, Tualatin Parks Advisory Committee, and City Council as they begin deliberations on the TSP package as a whole.

This page left blank intentionally.

Appendix A: Traffic Operations and Travel Times Data

This page left blank intentionally.

APPENDIX A
PM Peak Hour Intersection Traffic Operations by Scenario (Without Intersection Mitigations)

Intersection	Jurisdiction	Minimum Standard	2011 LOS	2011 V/C	2035 No-Build LOS	2035 No-Build V/C	2035 Low-Build w/out 65th LOS	2035 Low-Build w/out 65th V/C	2035 Low-Build w/out 65th & w/BFR widened LOS	2035 Low-Build w/o 65th & w/BFR widened V/C	2035 Low-Build w/2-lane 65th LOS	2035 Low-Build w/2-lane 65th V/C	2035 Low-Build with 2-lane 65th & w/BFR widened LOS	2035 Low-Build with 2-lane 65th & w/BFR widened V/C
Signalized														
SW 124th Ave & Hwy 99W	ODOT	0.99	C	0.69	D	0.99	D	0.99	D	0.97	D	0.98	D	0.96
SW 124th Ave & SW Tualatin Rd	Tualatin	D	B	0.66	C	0.91	C	0.88	C	0.88	C	0.89	C	0.89
SW 124th Ave & SW Herman Rd	Tualatin	D	C	0.53	C	0.76	C	0.77	C	0.77	C	0.76	C	0.77
SW 124th Ave & SW Tualatin-Sherwood Rd	Wash. Co.	0.99	C	0.90	C	0.93	C	0.92	C	0.92	C	0.92	C	0.91
SW Avery St & SW Tualatin-Sherwood Rd	Wash. Co.	0.99	B	0.71	D	0.97	D	0.98	D	0.98	D	0.98	D	0.98
SW Teton Ave & SW Tualatin-Sherwood Rd	Wash. Co.	0.99	D	0.79	E	**1.05**	E	**1.05**	E	**1.05**	E	**1.07**	E	**1.06**
SW 90th Ave & SW Tualatin-Sherwood Rd	Wash. Co.	0.99	C	0.60	C	0.80	C	0.80	C	0.80	D	0.81	D	0.82
SW Boones Ferry Rd & SW Tualatin-Sherwood Rd	Wash. Co.	0.99	D	0.93	F	**1.21**	F	**1.19**	F	**1.17**	F	**1.18**	F	**1.18**
SW Martinazzi Ave & SW Tualatin-Sherwood Rd	Wash. Co.	0.99	D	0.94	F	**1.18**	F	**1.17**	F	**1.15**	F	**1.23**	F	**1.19**
I-5 SB Ramps & SW Nyberg Rd	ODOT	0.99	D	0.79	D	0.91	D	0.91	D	0.86	C	0.91	C	0.87
I-5 NB Ramps & SW Nyberg Rd	ODOT	0.99	B	0.68	C	0.84	C	0.84	C	0.85	C	0.92	C	0.91
SW 65th Ave & SW Borland Rd	Wash. Co.	0.99	D	0.93	F	**1.47**	F	**1.47**	F	**1.47**	F	**1.54**	F	**1.52**
SW Teton Ave & SW Herman Rd	Tualatin	D	C	0.65	B	0.61	C	0.67	C	0.67	C	0.68	C	0.68
SW Tualatin Rd & SW Herman Rd	Tualatin	D	B	0.59	B	0.77	B	0.74	B	0.77	B	0.74	B	0.76
SW 90th Ave & SW Tualatin Rd	Tualatin	D	B	0.75	D	0.98	C	0.94	C	0.94	C	0.92	C	0.92
SW Tualatin Rd & SW Boones Ferry Rd	Wash. Co	0.99	B	0.62	C	0.87	C	0.84	C	0.89	C	0.79	C	0.82
SW Martinazzi Ave & SW Boones Ferry Rd	Wash. Co	0.99	D	0.89	F	**1.27**	F	**1.27**	F	**1.24**	F	**1.20**	F	**1.18**
SW Boones Ferry Rd & SW Lower Boones Ferry Rd	ODOT	0.99	C	0.76	E	**1.12**	E	**1.12**	D	**1.05**	D	**1.00**	C	0.91
SW 72nd Ave & Lower Boones Ferry Rd & Bridgeport Rd	Wash. Co	0.99	C	0.66	D	0.88	D	0.88	D	0.89	D	0.83	D	0.89
I-5 SB Ramps & SW Lower Boones Ferry Rd	ODOT	0.99	C	0.75	D	0.97	D	0.97	D	**1.03**	D	0.92	D	0.99
I-5 NB Ramps & SW Lower Boones Ferry Rd	ODOT	0.99	B	0.74	D	0.98	D	0.98	D	**1.00**	C	0.86	C	0.87
SW Boones Ferry Rd & SW Avery St	Wash. Co.	0.99	C	0.87	F	**1.13**	F	**1.13**	F	**1.20**	F	**1.17**	F	**1.17**
SW Boones Ferry Rd & SW Sagert St	Wash. Co.	0.99	C	0.75	E	**1.11**	E	**1.11**	F	**1.13**	E	**1.09**	E	**1.07**
SW Boones Ferry Rd & SW Ibach St	Wash. Co.	0.99	B	0.70	D	0.98	D	0.98	D	0.98	D	0.99	D	0.99
SW 105th Ave & SW Avery St[2]	Tualatin	E	C	0.28	C	0.94	C	0.94	C	0.94	C	0.92	C	0.92
SW Martinazzi Ave & SW Sagert St[3]	Tualatin	E	**F**	0.95	D	0.92	D	0.92	D	0.93	D	0.87	D	0.88
SW 65th Ave & SW Nyberg Rd	Wash. Co	0.99	B	0.79	D	**1.02**	D	**1.02**	D	**1.02**	F	**1.50**	F	**1.41**

[2] Existing Conditions operations evaluated with minor street stop control.
[3] Existing Conditions operations evaluated with minor street stop control. HCM Methodology does not account for a three-lane approach for an all way stop (as exists for the southbound approach.) To estimate LOS and V/C for the intersection the three lanes (one dedicated to each movement) are combined into two: through-right and through-left lanes. Because of this approximation, actual performance may be slightly better than reported above.

APPENDIX A
PM Peak Hour Intersection Traffic Operations by Scenario (Without Intersection Mitigations)

Intersection	Jurisdiction	Minimum Standard	2011 LOS	2011 V/C	2035 No-Build LOS	2035 No-Build V/C	2035 Low-Build w/out 65th LOS	2035 Low-Build w/out 65th V/C	2035 Low-Build w/out 65th & w/BFR widened LOS	2035 Low-Build w/o 65th & w/BFR widened V/C	2035 Low-Build w/2-lane 65th LOS	2035 Low-Build w/2-lane 65th V/C	2035 Low-Build with 2-lane 65th & w/BFR widened LOS	2035 Low-Build with 2-lane 65th & w/BFR widened V/C
All-way Stop-control														
SW Martinazzi Ave & SW Avery St*	Tualatin	E	B	0.55	D	0.85	D	0.85	D	0.83	D	0.86	D	0.88
SW Teton Ave & SW Avery St*	Tualatin	E	C	0.40	**F**	0.77	**F**	0.77	**F**	0.77	**F**	0.76	**F**	0.76
SW 65th Ave & SW Sagert St*[4]	Wash. Co.	0.99	F	0.98	F	**1.72**	F	**1.72**	F	**1.72**	F	**1.87**	F	**1.87**
*Minor Street Stop-control**														
SW Teton Ave & SW Tualatin Rd	Tualatin	E	**F**	0.98	**F**	1.42	B**	0.70**	B**	0.70**	B**	0.70**	B**	0.70**

SOURCE: Consultant Team

*LOS and V/C reported for highest delay movement.

**Evaluated as a traffic signal. Assumes construction of traffic signal.

BOLD and highlighted dark grey text indicates meet minimum performance standard is not met

[4] HCM Methodology does not account for a three-lane approach for an all way stop (as exists for the southbound approach.) To estimate LOS and V/C for the intersection the dedicated southbound left turn lane and through lane are combined, due to the relatively small volume on the left turn movement. Because of this approximation, actual performance may be slightly better than reported above.

APPENDIX A
PM Peak Hour Intersection Traffic Operations by Scenario (With Mitigations)

Intersection	Jurisdiction	Minimum Standard	2011 LOS	2011 V/C	2035 No-Build LOS	2035 No-Build V/C	2035 Low-Build LOS	2035 Low-Build V/C	2035 Low-Build w/BFR widened LOS	2035 Low-Build w/BFR widened V/C	2035 Low-Build (w/2-lane 65th) LOS	2035 Low-Build (w/2-lane 65th) V/C	2035 Low-Build 2-lane 65th & w/BFR widened LOS	2035 Low-Build 2 lane 65th & w/BFR widened V/C	**Mitigation** (identified for Low-Build Scenario w/65th Avenue, unless noted otherwise)
Signalized															
SW 124th Ave & Hwy 99W	ODOT	0.99	C	0.69	D	0.99	D	0.99	D	0.97	D	0.98	D	0.96	
SW 124th Ave & SW Tualatin Rd	Tualatin	D	B	0.66	C	0.91	C	0.88	C	0.88	C	0.89	C	0.89	
SW 124th Ave & SW Herman Rd	Tualatin	D	C	0.53	C	0.76	C	0.77	C	0.77	C	0.76	C	0.77	
SW 124th Ave & SW Tualatin-Sherwood Rd	Wash. Co.	0.99	C	0.90	C	0.93	C	0.92	C	0.92	C	0.92	C	0.91	
SW Avery St & SW Tualatin-Sherwood Rd	Wash. Co.	0.99	B	0.71	D	0.97	D	0.98	D	0.98	D	0.98	D	0.98	
SW Teton Ave & SW Tualatin-Sherwood Rd	Wash. Co.	0.99	D	0.79	E	0.92	E	0.92	E	0.92	D	0.94	D	0.94	Signal Adjustments (Timing and Phasing)
SW 90th Ave & SW Tualatin-Sherwood Rd	Wash. Co.	0.99	C	0.60	C	0.80	C	0.80	C	0.80	D	0.81	D	0.82	
SW Boones Ferry Rd & SW Tualatin-Sherwood Rd	Wash. Co.	0.99	D	0.93	E	**1.02**	E	**1.00**	E	**1.00**	E	0.96	E	0.98	EBR, WBR, SBL pockets & Signal Adjustments
SW Martinazzi Ave & SW Tualatin-Sherwood Rd	Wash. Co.	0.99	D	0.94	E	**1.11**	F	**1.10**	F	**1.08**	E	**1.10**	F	**1.13**	EBT, NBR pocket, WBR prohibited & Signal Adjustments
I-5 SB Ramps & SW Nyberg Rd	ODOT	0.99	D	0.79	D	0.91	D	0.91	D	0.86	C	0.91	C	0.87	
I-5 NB Ramps & SW Nyberg Rd	ODOT	0.99	B	0.68	C	0.84	C	0.84	C	0.85	C	0.92	C	0.91	
SW 65th Ave & SW Borland Rd	Wash. Co.	0.99	D	0.93	D	0.96	D	0.96	D	0.99	C	0.91	D	0.95	NBR, WBL pocket & Signal Adjustments. Alternative access for EB approach (closed)
SW Teton Ave & SW Herman Rd	Tualatin	D	C	0.65	B	0.61	C	0.67	C	0.67	C	0.68	C	0.68	
SW Tualatin Rd & SW Herman Rd	Tualatin	D	B	0.59	B	0.77	B	0.74	B	0.77	B	0.74	B	0.76	
SW 90th Ave & SW Tualatin Rd	Tualatin	D	B	0.75	D	0.98	C	0.94	C	0.94	C	0.92	C	0.92	
SW Tualatin Rd & SW Boones Ferry Rd	Wash. Co	0.99	B	0.62	C	0.87	C	0.84	C	0.89	C	0.79	C	0.82	
SW Martinazzi Ave & SW Boones Ferry Rd	Wash. Co	0.99	D	0.89	D	0.99	D	0.99	E	**1.08**	D	0.97	F	**1.03**	Widen BFR east to create 2 EB entry lanes. Alternative access for SB approach (closed.) Restripe lanes & Signal adjustments.
SW Boones Ferry Rd & SW Lower Boones Ferry Rd	ODOT	0.99	C	0.76	E	**1.06**	E	**1.06**	D	**1.02**	D	**1.00**	C	0.91	RIRO on EB approach including prohibiting NBL.
SW 72nd Ave & Lower Boones Ferry Rd & Bridgeport Rd	Wash. Co	0.99	C	0.66	D	0.88	D	0.88	D	0.89	D	0.83	D	0.89	
I-5 SB Ramps & SW Lower Boones Ferry Rd	ODOT	0.99	C	0.75	D	0.97	D	0.97	D	0.98	D	0.92	D	0.99	
I-5 NB Ramps & SW Lower Boones Ferry Rd	ODOT	0.99	B	0.74	D	0.98	D	0.98	D	0.96	C	0.86	C	0.87	
SW Boones Ferry Rd & SW Avery St	Wash. Co.	0.99	C	0.87	D	0.94	D	0.94	D	0.94	D	0.95	D	0.95	EBR, SBR pockets & Signal Adjustments (Timing and Phasing)
SW Boones Ferry Rd & SW Sagert St	Wash. Co.	0.99	C	0.75	D	0.88	D	0.88	D	0.93	D	0.85	D	0.87	NBR pocket & Signal Adjustments (Timing and Phasing)
SW Boones Ferry Rd & SW Ibach St	Wash. Co.	0.99	B	0.70	D	0.98	D	0.98	D	0.98	D	0.99	D	0.99	
SW 105th Ave & SW Avery St[5]	Tualatin	E	C	0.28	C	0.94	C	0.94	C	0.94	C	0.92	C	0.92	
SW Martinazzi Ave & SW Sagert St[6]	Tualatin	E	**F**	0.95	D	0.92	D	0.92	D	0.92	D	0.87	D	0.88	

[5] Existing Conditions operations evaluated with minor street stop control.

APPENDIX A
PM Peak Hour Intersection Traffic Operations by Scenario (With Mitigations)

Intersection	Jurisdiction	Minimum Standard	2011 LOS	2011 V/C	2035 No-Build LOS	2035 No-Build V/C	2035 Low-Build LOS	2035 Low-Build V/C	2035 Low-Build w/BFR widened LOS	2035 Low-Build w/BFR widened V/C	2035 Low-Build (w/2-lane 65th) LOS	2035 Low-Build (w/2-lane 65th) V/C	2035 Low-Build 2-lane 65th & w/BFR widened LOS	2035 Low-Build 2 lane 65th & w/BFR widened V/C	**Mitigation** (identified for Low-Build Scenario w/65th Avenue, unless noted otherwise)
SW 65th Ave & SW Nyberg Rd	Wash. Co	0.99	B	0.79	C	0.91	C	0.91	C	0.92	C	0.88	C	0.86	Signal timing adjustments.
All-way Stop-control															
SW Martinazzi Ave & SW Avery St*	Tualatin	E	B	0.55	D	0.85	D	0.85	D	0.83	D	0.86	D	0.88	
SW Teton Ave & SW Avery St*	Tualatin	E	C	0.40	**F**	0.77	B**	0.62**	B**	0.62**	B**	0.64**	B**	0.64**	Traffic Signal
SW 65th Ave & SW Sagert St*[7]	Wash. Co.	0.99	F	0.98	D**	0.91**	D**	0.91**	D**	0.97**	D**	0.97**	D**	0.97**	**Traffic Signal & Restripe (NBL, EBL). Alternate access for WB approach (closed)**
*Minor Street Stop-control**															
SW Teton Ave & SW Tualatin Rd	Tualatin	E	**F**	0.98	**F**	1.42	B**	0.70**	B**	0.70**	B**	0.70**	B**	0.70**	Traffic Signal (assumed in Low-Build)

SOURCE: Consultant Team
*LOS and V/C reported for highest delay movement.
**Evaluated as a traffic signal. Assumes construction of traffic signal.
BOLD and highlighted dark grey text indicates meet minimum performance standard is not met

[6] Existing Conditions operations evaluated with minor street stop control. HCM Methodology does not account for a three-lane approach for an all way stop (as exists for the southbound approach.) To estimate LOS and V/C for the intersection the three lanes (one dedicated to each movement) are combined into two: through-right and through-left lanes. Because of this approximation, actual performance may be slightly better than reported above.
[7] HCM Methodology does not account for a three-lane approach for an all way stop (as exists for the southbound approach.) To estimate LOS and V/C for the intersection the dedicated southbound left turn lane and through lane are combined, due to the relatively small volume on the left turn movement. Because of this approximation, actual performance may be slightly better than reported above.

2035 PM Peak Travel Time Comparison by Scenario (minutes)

Corridor	From	To	Existing (2011)	No-Build (2035)	Low-Build	Low-Build w/ Boones Ferry Rd. Widening	Low-Build w/ 65th Extension	Low-Build w/65th Extension & Boones Ferry Rd. Widening
SW Boones Ferry Road	Tualatin HS	Bridgeport Village	10.3	15.1	15.1	13.7	13.7	12.6
	Bridgeport Village	Tualatin HS	9.2	12.2	12.2	11.5	11.3	10.6
SW Boones Ferry Road	Tualatin HS	Nyberg Interchange	7.4	9.7	9.7	9.7	10.0	9.8
	Nyberg Interchange	Tualatin HS	7.1	8.2	8.2	8.2	8.4	8.4
SW Tualatin Road	115th Ave	Bridgeport Village	8.6	13.0	13.5	12.5	12.3	11.5
	Bridgeport Village	115th Ave	8.5	11.7	12.0	11.3	11.4	10.9
SW Tualatin Road	115th Ave	Nyberg Interchange	8.0	10.6	10.9	10.9	11.2	11.0
	Nyberg Interchange	115th Ave	8.7	10.4	10.8	10.7	11.0	10.9
SW Tualatin-Sherwood Road	Cipole Rd	Bridgeport Village	11.7	17.0	17.0	15.8	16.0	14.9
	Bridgeport Village	Cipole Rd	13.0	17.3	17.4	16.7	16.4	15.7
SW Tualatin-Sherwood Road	Cipole Rd	Nyberg Interchange	8.7	11.6	11.6	11.6	12.0	11.8
	Nyberg Interchange	Cipole Rd	10.1	11.8	12.0	12.0	12.4	12.3
SW Borland Road / 65th Ave	Bridgeport Elementary	Nyberg Interchange	3.1	3.3	3.3	3.4	3.3	3.5
	Nyberg Interchange	Bridgeport Elementary	2.3	3.5	3.5	3.5	3.5	3.5
SW Borland Road / 65th Ave	Bridgeport Elementary	Bridgeport Village	9.2	12.9	12.8	12.2	10.7	10.4
	Bridgeport Village	Bridgeport Elementary	8.4	14.4	14.4	13.7	12.2	11.8

SOURCE: All Traffic Data, November 2011 (Existing), Metro Travel Demand Forecast Model (2035)

2035 PM Peak Travel Time Comparison by Scenario (Percent Change Relative to No-Build Scenario)

Corridor	From	To	Low-Build	Low-Build w/ Boones Ferry Rd. Widening	Low-Build w/ 65th Extension	Low-Build w/ 65th Extension & w/ Boones Ferry Rd. Widening
SW Boones Ferry Road	Tualatin HS	Bridgeport Village	0%	-10%	-9%	-16%
	Bridgeport Village	Tualatin HS	0%	-5%	-8%	-13%
SW Boones Ferry Road	Tualatin HS	Nyberg Interchange	0%	0%	3%	1%
	Nyberg Interchange	Tualatin HS	0%	0%	3%	2%
SW Tualatin Road	115th Ave	Bridgeport Village	3%	-4%	-5%	-12%
	Bridgeport Village	115th Ave	2%	-3%	-3%	-7%
SW Tualatin Road	115th Ave	Nyberg Interchange	3%	3%	6%	4%
	Nyberg Interchange	115th Ave	4%	3%	6%	5%
SW Tualatin-Sherwood Road	Cipole Rd	Bridgeport Village	0%	-7%	-6%	-13%
	Bridgeport Village	Cipole Rd	1%	-4%	-5%	-9%
SW Tualatin-Sherwood Road	Cipole Rd	Nyberg Interchange	0%	0%	4%	2%
	Nyberg Interchange	Cipole Rd	2%	1%	4%	4%
SW Borland Road / 65th Ave	Bridgeport Elementary	Nyberg Interchange	0%	1%	0%	4%
	Nyberg Interchange	Bridgeport Elementary	0%	0%	1%	0%
SW Borland Road / 65th Ave	Bridgeport Elementary	Bridgeport Village	0%	-5%	-16%	-19%
	Bridgeport Village	Bridgeport Elementary	0%	-5%	-15%	-18%

SOURCE: All Traffic Data, November 2011 (Existing), Metro Travel Demand Forecast Model (2035)