

MINUTES
MILWAUKIE CITY COUNCIL WORK SESSION
OCTOBER 1, 2013

Mayor Ferguson called the work session to order at 5:00 p.m. in the City Hall Conference Room.

Council Present: Council President Hedges and Councilors Scott Churchill, Mark Gamba, and Mike Miller

Staff Present: City Manager Bill Monahan, Assistant to the City Manager Teri Bankhead, City Recorder Pat DuVal, Finance Director Casey Camors, Community Development Director Steve Butler, and Engineering Director Jason Rice.

Media: Michael Bamesberger, *The Oregonian*

City Manager's Report

Mr. Monahan reviewed the agenda. The application for the Ed Zumwalt Volunteer of the Year Award was posted on the City's website. Election law training was scheduled for board, commission, and committee members on November 20, 2013. He discussed the Portland General Electric (PGE) franchise and the Clackamas Fire District #1 (CFD#1) lease agreement for the Public Safety Building (PSB). Because of scheduling difficulties, there was a proposal that a subcommittee of Milwaukie City Council members and North Clackamas School District School District #12 (NCSD#12) convene.

Mr. Monahan discussed Ed Parecki's letter and invoice to the City for repairs he had done. He recommended not paying and had not seen any reason for taking responsibility.

Mr. Rice discussed downtown standards a full build out and what was defined as sidewalk. Mr. Parecki had done work beyond what was requested of him including the right-of-way up against the curb.

Mr. Monahan noted that if the issue goes to it, Citycounty Insurance Services (CIS) may decide to pay. The group discussed responsibility for the sidewalk and bulbouts.

Parks and Sustainability

Ms. Herrigel brought displays of materials that could and could not go into curbside recycling. She discussed the status of the Riverfront Park Project and Tree City USA designation. The contract award for the City Swale/Median Maintenance was scheduled for the October 15 City Council agenda, and new garbage rates were now in effect.

Councilor Gamba had made some contacts at the recent League of Oregon Cities (LOC) Conference and thought a Milwaukie urban forestry program looked promising.

Engineering

Mr. Rice reported on the Quiet Zone Implementation. The City received the Right of Entry Permit from Union Pacific and notified the contractor. Improvements were expected to be done in 30 days, and then staff would apply for the Quiet Zone with the Federal Rail Administration (FRA). The Harrison Street Paving Project should be completed on October 4, 2013, followed by striping on Main and Harrison Streets. He

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Approved Minutes

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provide a schedule of upcoming Clackamas County Transportation System Plan (TSP) meetings.

Mr. Butler reported the City Council would have its first hearing on the Milwaukie TSP on October 15 and updated the group on the Moving Forward Milwaukie Project.

Mayor Ferguson announced the community booth would be set up at the October 18 Milwaukie High School football game, and on October 30 there would be an Oregon Passenger Rail briefing at the Milwaukie Center.

Mayor Ferguson recessed the work session at 5:40 p.m. for the Budget Committee meeting and reconvened it at 5:59 p.m.

Transportation System Plan Update

Mr. Kelter reviewed the Work Session outline in preparation for the public hearing scheduled for October 15. He discussed the relationship between the City's TSP which implemented the State Transportation Planning Rule for a long range multimodal transportation plan. The local TSP also needed to be consistent with Metro's Regional Transportation Plan (RTP). The document adjusted the planning horizon to 2035 and confirmed the plans for various modes to provide redundancy and to meet the needs of the community. This Plan, however, did not specify streets that would be repaved as the Street Surface Maintenance Plan (SSMP) did; the Capital Improvement Plan (CIP) determined project funding priorities. The TSP identified needs to improve the system and provided high level guidance.

When the assessment began it was determined that certain areas of the 2007 TSP needed updating such as deleting completed projects and reprioritizing projects as needed. For budgetary and staffing reasons, the Planning Department operated with the philosophy that the new Metro requirements could be addressed with a "light touch" approach to the update. Keeping the skeleton of the document, a public involvement process was launched; however, it was not as extensive as the 2007 effort. On September 24, 2013, the Planning Commission voted unanimously to move the package forward to the City Council.

Councilor Gamba asked why Metro required municipalities to do a TSP.

Mr. Kelter replied, in order to develop a robust system, it was a State requirement to provide an updated local plan to be included as part of regional plan.

Councilor Miller asked for clarification of the strikeouts and highlighting.

Mr. Kelter responded that as the Planning Commission hearing neared, staff started making changes that were recommended. The addendums were changes proposed to the original draft document. The edits highlighted in yellow were completed after the Planning Commission hearing. He was preparing an addendum list with all the changes and brief descriptions.

Mr. Kelter showed an outline of the tables in the document and pointed out chapters 5 – 9 that addressed the basic modes of the transportation system. He briefly reviewed the action plan lists.

Councilor Miller suggested referencing the SSMP or making it an addendum.

Mr. Monahan suggested adding something to the executive summary to clarify that the existing conditions were taken into account along with the SSMP information.

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Mr. Kelter would look in the revised document for a place where additional language might be added in response to City Council comments.

Council President Hedges expressed some concerns with one person's requesting a change to the document who was not a Public Safety Advisory Committee (PSAC) member. He felt that destroyed the document's credibility. One person approached staff and caused a change.

Mr. Butler replied that staff was trying to be very open to accepting comments. Staff may follow up on a comment it feels is valid.

Councilor Churchill observed a typo was one thing, but unnecessary influence could be construed as a concern. When it came to approval, individual comments should be noted as being heard and be considered by the Planning Commission. It was good to hear a professional opinion with Planning Commission interpretation.

Mr. Kelter said the document would be refreshed in terms of project priorities, the SSMP addendum, and the staff recommendation to the Planning Commission.

Mr. Monahan thought it was important for people to know what processes their questions and feedback go through.

Mr. Rice added that some project suggestions did not fit with the TSP and needed to be considered as part of the utility maintenance schedule. He did not believe all individual comments made it to the list of changes.

The Council Goals Update was rescheduled to the end of the regular session.

Mayor Ferguson adjourned the work session at 7:01 p.m.

Respectfully submitted,



Pat DuVal, Recorder

WORK SESSION

Worksession Outline – October 1, 2013

TSP Update Project



1. Purpose/Goal of the Worksession:

Prepare Council for public hearing on October 15, 2013:

- a. Recap the Project
- b. Explain the Document
- c. Address Key Issues
- d. Answer Council Questions

2. Project Background

- a. How the TSP Works
- b. Scope of 2013 Update: "Refresh"
- c. TSP Structure
- d. Project Lists
- e. Amendments to August 20 draft

3. Review of Proposed Amendments to the TSP

- a. Key Concerns
 - i. SSMP and maintenance
 - ii. Project specificity
 - iii. Neighborhood Greenways (on-street parking, no bike lanes, not a separate path, no templates)
 - iv. Linwood/Harmony intersection
 - v. Overall funding issues
 - vi. Adjustments to Project Priorities

4. Wrap Up = Questions before Public Hearing?



MILWAUKIE

Dogwood City of the West

EXHIBIT

tabbles

10/1/13 WS

Memorandum

To: City Council

From: Steve Butler, Community Development Director
JoAnn Herrigel, Parks and Sustainability Director
Jason Rice, Engineering Director
Ryan Marquardt, Senior Planner
Tom Larsen, Building Official

CC: Bill Monahan, City Manager

Date: October 1, 2013

Re: Community Development Department Projects - City Council Update for 10/1/13 Work Session

Parks & Sustainability

- Neighborhood Park Completion
- Park District Cost Allocation
- **City Swale/Median Maintenance Contracts**
- Sustainability Plan
- **Tree City USA**
- Public/Government Access
- **Milwaukie Riverfront Park**
Garbage rates

Engineering

- **Quiet Zone Implementation**
- Adams Street Connector
- **Harrison Street Water Contract**
- 17th Avenue Bike/Ped. Path
- **Clackamas County TSP Update**
- Street Surface Maintenance Program
- ADA Ramp Grant - CDBG

Planning

- Annexations
- Land Use and Development Review
- **Transportation System Plan Update**
- Light Rail Permitting
- Zoning Code Enforcement
- **Moving Forward Milwaukie: Enhancing Our Commercial Districts**
- Code Amendments

Community Development

- Kellogg Ped/Bike Bridge
- ODOT TGM Grant
- Adams Street Lanterns

Building

- Updates

Parks & Sustainability

Milwaukie Riverfront Park

- James Holm, the Corps of Engineers staff person reviewing the Riverfront Park permit, reports that the CCSD#1 agreement is the last item needed for permit issuance. James' last day at the Corps is October 4. He had planned to draft the permit before his last day. The Federal government shutdown may affect his ability to do so.
- Appraisal for the easement the City is requesting of CCSD#1 is complete. CCSD#1 also completed its own appraisal. A meeting with CCSD#1 staff, the City Manager, the Mayor and County Commissioner Savas is being scheduled to discuss the agreement.

Tree City USA

- Staff is reviewing the City and Park District's current tree-related expenses to determine whether we meet the \$2.00 per capita requirement. Required code changes and potential tree board establishment is also being researched. Staff will report back to Council in early November on project status.
- City staff will also be meeting with Friends of Trees to learn more about its potential applicability to Milwaukie.

City Swale/Median Maintenance Contracts

- Responses to Request for Proposals for the landscaping contract are due October 3. Contract award will be on the October 15 Council agenda.

Garbage Rates

- Ride-along for Councilors interested in doing can/cart inspections with the garbage haulers set for **October 15**.
- New garbage rates are effective today. The rates are posted on the City web site.

Engineering

Quiet Zone Implementation

- Staff received the Right-of-Entry Permit from Union Pacific this morning and has notified the contractor.
- Over the next 30 days, the City's Contractor will coordinate flagging services with Union Pacific.
- Once construction begins, Staff expects that all of the improvements under this contract will be completed within 30 days.
- After all the work is complete, Staff will apply for the "Quiet Zone" with the Federal Rail Administration.
 - Currently Staff expects to provide 30 days for this decision to take place (**prior to December 31st, 2013**).

Harrison Street - SSMP Paving Schedule

- Staff is currently communicating with ODOT, TriMet and the Public that all of the **remaining paving work** will take place on **Friday October 4th**. This is of course weather dependent.
- Once all of the paving is complete, the contractor will come back in and stripe Main Street and Harrison Street.

Clackamas County TSP Update

- The next meetings available for public comment are:
 - **Planning Commission Meeting** on October 28th at 6:30 p.m.
 - **Planning Commission Meeting** on November 4th at 6:30 p.m.

Both will be held at the Development Services Building Auditorium located at 150 Beavercreek Road in Oregon City.

Planning

Transportation System Plan Update

- Council will have its first hearing on the TSP Update on Tuesday, October 15th. Associate Planner Brett Kelter will brief Council at tonight's worksession on the Planning Commission's recommendation hearings, public comments on the update, and key issues for Council's consideration in preparing for the October 15th hearing.

Moving Forward Milwaukie: Enhancing Our Commercial Districts

- The **Project Kickoff event** is scheduled for this **Thursday, October 3rd, from 6:00 – 7:30 pm**. It will be held at St. John's Episcopal Church, 2036 SE Jefferson St. The first hour of the event from 6 – 7 pm will be a workshop featuring live audience polling and a forum to tell the project team how new development should look and function. There will be an open house starting at 7 pm for one-on-one conversations with the project consultant team and City staff.
- The first meeting of the Project Advisory Committee (PAC) was held last Monday September 23rd. Sixteen of the 18 PAC members attended, in addition to 6 other community members. The PAC discussed the scope and purpose of the project, the upcoming project kick-off meeting, and had a preliminary overview of the project opportunity sites.
- The opportunity sites for the project have been finalized. A panel consisting of Councilor Churchill, city and Metro staff, and the project consultant identified 2 additional opportunity sites downtown: (1) the western side of 21st Ave between Jackson St and Jefferson St.; and (2) the Graham's Stationary Building at 11049 SE Main St. The other opportunity sites are the Murphy and MacFarland sites in central Milwaukie, and the Town Center site across from City Hall, Cash Spot site, and the "triangle" site adjacent to the light rail station in downtown Milwaukie.



MILWAUKIE CITY COUNCIL WORK SESSION

City Hall Conference Room
10722 SE Main Street
www.milwaukieoregon.gov

AGENDA
October 1, 2013

A light dinner will be served.

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|-----------|------------------|--|--------------|-----------|
| 1. | 5:00 p.m. | City Manager's Report | Bill Monahan | |
| | | • Goals Update | | |
| 2. | 5:30 p.m. | Budget Committee Quarterly Report | Casey Camors | 1 |
| 3. | 6:15 p.m. | Transportation System Plan Update | Brett Kelter | 24 |
| 4. | 7:00 p.m. | Adjourn Work Session | | |

Information

Executive Session: The City Council may meet in executive session pursuant to ORS 192.660(2). All discussions are confidential and those present may disclose nothing from the Session. Representatives of the news media are allowed to attend Executive Sessions as provided by ORS 192.660(3) but must not disclose any information discussed. No Executive Session may be held for the purpose of taking any final action or making any final decision. Executive Sessions are closed to the public.

Public Notice

- The Council may vote in work session on non-legislative issues.
- The time listed for each discussion item is approximate. The actual time at which each item is considered may change due to the length of time devoted to the one previous to it.
- The Council requests that mobile devices be set on silent or turned off during the meeting.
- The City of Milwaukie is committed to providing equal access to information and public meetings per the Americans with Disabilities Act. For special accommodations, please call 503-786-7502 or email ocr@milwaukieoregon.gov at least 48 hours prior to the meeting.



BUDGET COMMITTEE MEETING AGENDA

October 1, 2013 at 5:30 p.m.

City Hall

1. Call to order and roll call
2. Introductions
3. Approval of prior meeting minutes
4. Review of Quarterly Financial Report for the fourth quarter ended June 30, 2013 and discussion
5. Adjourn

**CITY OF MILWAUKIE
BUDGET COMMITTEE MEETING
JUNE 4, 2013**

Budget Committee Joint Session – Quarterly Report

Chair Stoll called the session to order at 6:30 p.m.

Members Present: Jesse Boumann, Scott Churchill, Jeremy Ferguson, John Fox, Mark Gamba, Mike Miller, and Ronn Palmer

Excused: Dave Hedges and Jeffrey Dondino

Staff Present: City Manager Bill Monahan, City Recorder Pat DuVal, and Finance Director Rina Byrne

Approval of prior meeting minutes

It was moved by Mr. Palmer and seconded by Mr. Gamba to approve the February 19, 2013 meeting minutes. Motion passed unanimously among the members present.

Chair Stoll commented on the biennial budget and asked Ms. Byrne to address supplemental budgets.

Ms. Byrne responded there would likely be a supplement budget presented in February 2014.

Review of Quarterly Financial Report for the third quarter ended March 31, 2013

Ms. Byrne reported that the bulk of property, franchise fees, and privilege taxes had been received and were reflected in the adoption of the supplemental budget. She noted that on page 5 of the Quarterly Financial Report (page 89 of the Work Session packet) the last column showed a generally positive change in fund balances. 94% of General Fund revenues from property taxes were received in November and we are on track to meet the full budget. Licenses and permits were on track, while some fees have been falling behind. Engineering and inspection fees, which got a boost from light rail, were not in a normal pattern. Franchise fees from Portland General Electric (PGE) were \$42,000 less than budgeted which was probably a result of energy conservation. NW Natural Gas franchise revenue was not received. Some department expenditures exceed their budgeted amounts. The Community Development budget was over, likely due to light rail and capital outlay, but would likely right itself by the end of the year.

Ms. Byrne reported that non-departmental would be fine by the end of the year, and all departments will likely come in under budget. She discussed Comcast and the County fiber network. Human Resources funds would not be used for negotiations this year. She reported that most of the library district funding had been received, and Library expenditures were within budget. Ms. Byrne addressed the Building Inspection Fund, with current revenues at 55% and expenditures at 77%.

Mr. Churchill wanted to make sure the budget forecast was conservative.

Ms. Byrne noted a general budget decrease was reflected and she would review expenditures for personnel services. For now she will stay with the positive fund balance, but she is not as optimistic as she once was. Referring to Work Session packet page 93, the Transportation Fund, she noted that overall the Street Surface Maintenance Program (SSMP) was in line with the budget, although the privilege tax was a bit over. The state gas tax varied from month to month, and if it continued to

come in lower, the City would end up at about 95% of the forecasted budget. Expenditures were all within budget. The materials and services line was under budget, but there were plans to use fees for a summer paving project. She would bring more information on the SSMP and state gas tax to the July study session. Revenue was less than budgeted, partly due to the state gas tax available fund balance starting with a negative balance. The SSMP fund did not have any personnel charges, and the program was largely contracted out. Referring to WS page 95, Ms. Bryne noted that the Water Fund revenue was close to budget and expenditures were within budget and definitely on track for planning for the biennium. Wastewater Fund expenditures would be in line with the budget by the end of the year.

Mr. Monahan discussed the wastewater recovery fee and systems development charge (SDC).

Ms. Byrne reported that the Stormwater Fund was also tracking on budget. The SDC Fund had nothing remarkable to report. The last two pages of the report address current projects, and she discussed the timing of and receipting of grants.

Adjourn

It was moved by Mr. Gamba and seconded by Mr. Palmer to adjourn the meeting. Motion passed unanimously among the members present.

Chair Stoll adjourned the Budget Committee meeting at 7:01 p.m.

Respectfully submitted

Pat DuVal, Recorder



To: Mayor and City Council

Through: Bill Monahan, City Manager

From: Casey Camors, Finance Director

Subject: Budget Committee

Date: October 1, 2013

ACTION REQUESTED

Presentation of and review of Quarterly Financial Report for informational purposes only.

HISTORY OF PRIOR ACTIONS AND DISCUSSIONS

The Budget Committee reviews the Quarterly Financial Report every quarter.

BACKGROUND

The City of Milwaukie Finance Department prepares an annual financial report (Comprehensive Annual Financial Report), Budget Document and four Quarterly Financial Reports each fiscal year. The Quarterly Financial Reports are prepared for the Budget Review Board and City Council, collectively referred to as the City's Budget Committee, to inform them of the financial results for the quarter ended and year-to-date. These reports are prepared by the Finance Department and significant budget-to-actual variance are identified and explained.

The City of Milwaukie Quarterly Financial Report through the fourth quarter ended June 30, 2013 includes:

- Executive Summary with Quarterly Highlights
- Budget-to-Actual comparisons for all City Funds and Departments

City-wide resources at June 30, 2013 total \$36,280,000 (excluding fund balance carryover of \$14,400,000) as compared to total year-to-date City-wide requirements of \$37,130,000 resulting in an decrease to Unappropriated Ending Fund Balance of \$851,000.

FISCAL IMPACTS

N/A

ALTERNATIVES

N/A

ATTACHMENTS

1. Quarterly Financial Report for the fourth quarter ended June 30, 2013



Attachment 1

Quarterly Financial Report

Reporting financial results
for the fourth quarter ended
June 30, 2013

Milwaukie Finance

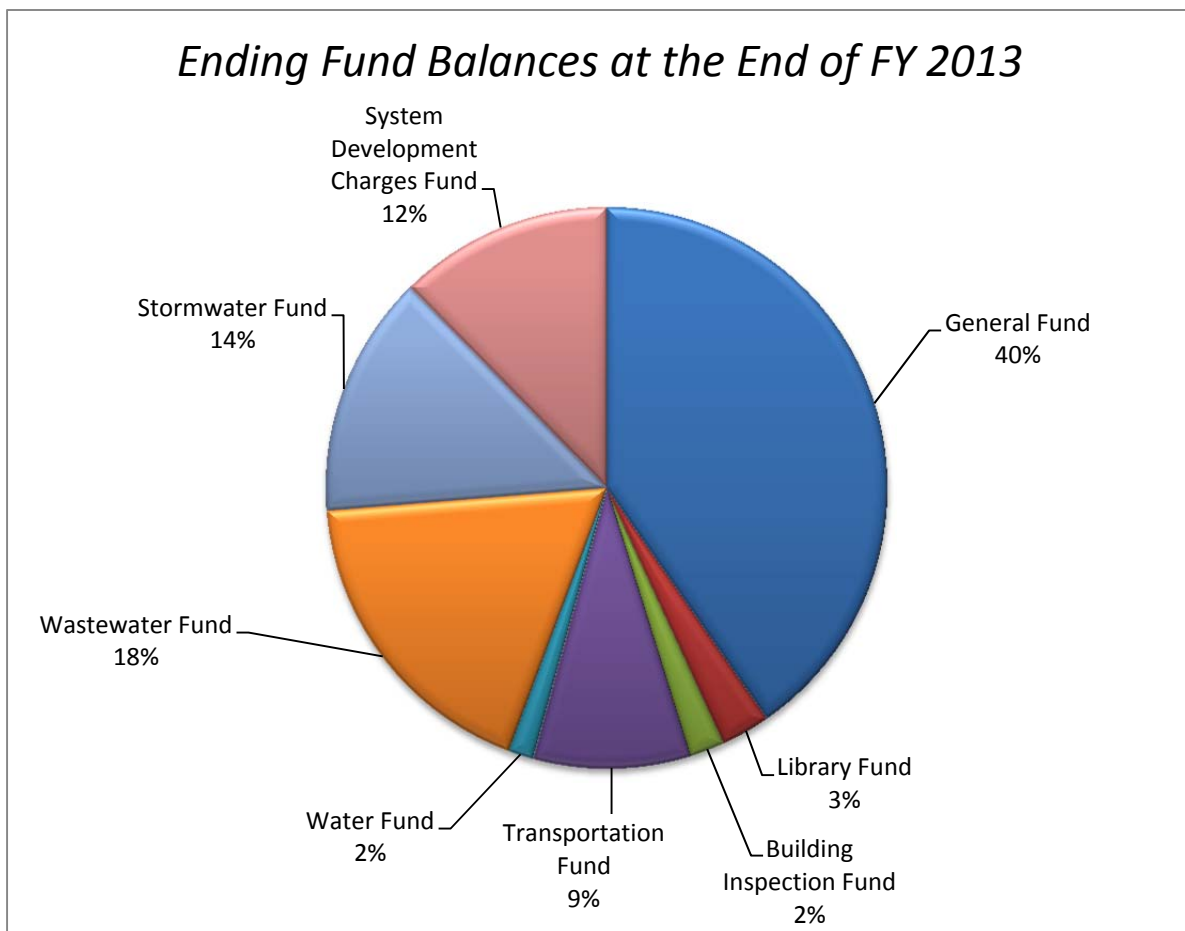
Executive Summary

QUARTERLY HIGHLIGHTS

This fourth quarter financial report summarizes the financial results year-to-date for the fiscal year ending June 30, 2013 (year-to-date) and highlights certain topics of interest. When the Finance Department concludes the audit process and completes the Comprehensive Annual Financial Report in November of 2013, updates will likely be made to this report.

Summary of Ending Fund Balances

Ending fund balances represent the amount of funds available at June 30, 2013 that the City has available to fund capital projects and to fund operations until property taxes arrive in November. During the budget process, we estimated that City-wide ending fund balance would be \$10,534,000. Preliminary ending fund balances are \$13,482,000 which is 28% higher than our estimates. However, that variance is wholly attributable to the timing in funding and completion of capital projects. General Fund ending fund balance is \$603,000 higher than estimated although this is a \$345,000 decrease over FY 2014 ending fund balance.



Fourth Quarter Financial Results

The construction on the Portland-Milwaukie Light Rail (PMLR) project continues. In the General Fund, for accounting purposes, the entire cost of the contribution to TriMet for light rail has been booked as an expenditure of the Community Development Department. Additionally, licenses and permits related to this project that are counted as a reduction to the project liability in accordance with the TriMet agreement are properly recorded as revenues.

The General Fund and Library Fund are dependent upon property taxes for operations. Property taxes have been received showing revenue at 98% of property taxes budgeted for the fiscal year reflecting a 2.5% increase over prior year receipts. Distributions from the Library District of Clackamas County shown in the Library Fund have also been received.

Three departments in the General Fund are currently over budget however they will likely arrive under budget by the end of the biennium.

The Building Inspection Fund financial position improved significantly in FY 2012 however we are seeing it losing some traction. This fund will continue to be watched.

In this fourth quarter report, we continue to report the Transportation Fund in total, but also broken out into two distinct programs: the Street Surface Maintenance program and the State Gas Tax program.

The Street Surface Maintenance program ending fund balance continues to be higher than anticipated similar to last year.

The State Gas Tax program for streets is showing a negative fund balance at June 30, 2013 of \$165,000. The City is currently working on a plan to turn this program around.

The Water Fund had a negative fund balance at the end of fiscal year 2012. It has made up some ground this fiscal year and has a positive fund balance at June 30, 2013 of \$195,000. Overall, increases in water consumption and increases in the utility rate for water have facilitated the quick recovery in this Fund.

Wastewater treatment is performed by Clackamas County Service District No. 1 (CCSD #1). During the budget process in the spring of 2012 the City was working with CCSD #1 to come to an agreement on the cost of wastewater treatment. After the budget was adopted, the City finalized the agreement with CCSD #1 which resulted in expenditures for treatment being much higher than that originally anticipated. To fund the increase in treatment costs, the City implemented an interim 30% wastewater rate increase and conducted a rate study. Rates were updated again in January 2013 to reflect the results of that study. In February 2013 Council adopted a supplemental budget which reflected the increased rates and treatment costs.

The Stormwater Fund continues to do well. Ending fund balance exceeded budget by \$900,000 however this is mostly attributable to a delay in capital projects. Personnel services includes unexpected costs that may be included in a FY 2014 supplemental budget request.

Expenditures in the SDC Fund exceed revenues due to planned capital projects and items related to the Light Rail project.

City of Milwaukie Audit Committee

The newly formed City of Milwaukie Audit Committee met three times over the past 6 months working to select a new independent audit firm for the City and to “kick-off” the FY 2013 audit. Thank you to the members of the Audit Committee for your participation. The audit season, beginning in May, typically finishes up in December with the issuance of the audited financial statements.

PERS and Supplemental Budget

The Oregon Legislature passed Senate Bill 822 resulting in rate reductions cities and counties are charged by PERS. Due to changes in PERS benefits, previous proposed rate increases scheduled for July 2013 averaging 4.58% will only increase 0.18%. This translates into about a \$420,000 per year savings for the City. Note that the actuarial methodology used by PERS included a rate-collaring provision, so it is reasonable to expect that rates, which are recalculated every 2 years, will increase at least 2% in July 2015, depending upon future actuarial gains or losses of the PERS system.

Personnel service costs also had unanticipated increases due to rising health insurance costs and enrollment, and increases in workers compensation and unemployment rates. Additionally, some projects budgeted in 2012 were not completed by year-end and needed to continue into fiscal year 2013. As a result, the Budget Committee approved a supplemental budget which the City Council adopted in February 2013.

Utility Assistance Programs

The City continues to offer its residential customers a *Low Income Utility Program*. This reduced rate program is a waiver of the established base charge for water service; one-half of the established base charge for wastewater (sewer) and storm water service; one-half of the established volume charge for wastewater service; and waiver of the street maintenance fee. The Finance Department is currently reviewing the annual application renewals. For more information on the eligibility requirements for the *Low Income Utility Program*, please visit: <http://www.cityofmilwaukie.org/finance/low-income-program> or call (503) 786-7525.

In 2012 the City offered a new program, the *Emergency Utility Assistance Program*. This program provides small amounts of funds to be applied to City utility accounts, usually as a match to payments made by customers who find themselves in financial difficulties. This program is generally geared towards utility customers with a good payment history who are struggling to maintain their payments.

Business Registrations are Now Online

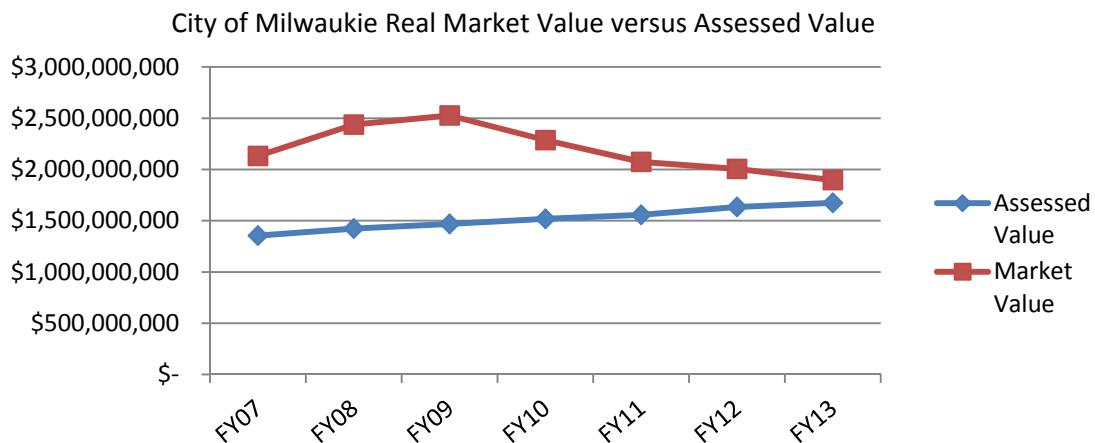
The Finance Department recently converted business registration and renewal to an online service. Businesses may register, renew and pay online as well as print their own business registration certificate. Annual renewal reminders will be sent by email to all registered

businesses. This is being offered as a convenience to our business partners and as well as to reduce the costs of administering the business registration program.

Property Taxes

This year, property taxes in Clackamas County are at their lowest growth rate of the past 16 years. Oregon's slow to improve economy and struggling real estate market coupled with Oregon's two constitutional property tax limitations all contributed to lower than normal tax growth.

The County is reporting an overall increase of 0.83% in property tax growth county-wide. Overall Real Market Values are still above Assessed Values, but we are seeing some properties where this gap has closed completely.



I welcome your questions, comments, and any suggestions you may have regarding this report. I can be reached at (503) 786 7522 or by email at: camorsc@milwaukieoregon.gov.

Respectfully,

Casey Camors, CPA CMA CPFO
Finance Director, City of Milwaukie

September 18, 2013

City of Milwaukie, Oregon
Quarterly Financial Report
Budget-to-Actual

Through the fourth quarter ended June 30, 2013

All City Funds

Fund	Beginning Fund Balance as of July 1, 2012	Year to Date through June 30, 2013		Ending Fund Balance as of June 30, 2013	Change in Fund Balance	Budgeted Ending Fund Balance as of June 30, 2013	over (under) Estimated Fund Balance in Budget
		Revenues	Expenditures				
1. General Fund	\$ 5,781,952	\$ 19,423,123	\$ 19,768,452	\$ 5,436,623	\$ (345,329)	\$ 4,833,450	\$ 603,173
2. Library Fund	557,060	2,344,580	2,520,462	381,178	(175,882)	503,000	(121,822)
3. Building Inspection Fund	284,156	281,943	289,932	276,167	(7,989)	182,000	94,167
4. Transportation Fund	1,738,589	3,029,711	3,483,500	1,284,800	(453,789)	901,000	383,800
5. Water Fund	(224,869)	2,794,121	2,374,156	195,096	419,965	(54,000)	249,096
6. Wastewater Fund	3,085,206	6,377,440	7,034,455	2,428,191	(657,015)	2,141,000	287,191
7. Stormwater Fund	1,416,231	1,977,023	1,511,752	1,881,502	465,271	983,000	898,502
8. Systems Development Charges Fund:							
Transportation SDC Department	451,556	14,559	261	465,854	14,298	58,000	407,854
Water SDC Department	235,926	2,410	44,741	193,595	(42,331)	95,000	98,595
Wastewater SDC Department	805,180	18,043	11,326	811,897	6,717	1,120,000	(308,103)
Stormwater SDC Department	267,182	15,732	90,948	191,966	(75,216)	177,000	14,966
Total SDC Fund:	1,759,844	50,744	147,276	1,663,312	(96,532)	1,450,000	213,312
Totals	\$ 14,398,169	\$ 36,278,685	\$ 37,129,985	\$ 13,546,869	\$ (851,300)	\$ 10,939,450	\$ 2,607,419

City of Milwaukie, Oregon
Quarterly Financial Report
Budget-to-Actual
Through the fourth quarter ended June 30, 2013

General Fund

	Year-to-Date through June 30, 2013			Annual through June 30, 2013 (year-to-date)			
	Flexible Budget	Actual	% of Budget	Annual Budget	Actual	Variance	% of Budget
Revenue							
Property taxes	\$ 5,760,000	\$ 5,656,378	98%	\$ 5,760,000	\$ 5,656,378	\$ (103,622)	98%
Licenses & permits	1,063,000	860,813	81% ²	1,063,000	860,813	(202,187)	81%
Franchise fees	1,705,000	1,565,666	92%	1,705,000	1,565,666	(139,334)	92%
Intergovernmental	1,302,000	1,339,232	103%	1,302,000	1,339,232	37,232	103%
Fines & forfeitures	1,593,000	1,692,557	106%	1,593,000	1,692,557	99,557	106%
Miscellaneous	157,000	168,477	107%	157,000	168,477	11,477	107%
	<u>11,580,000</u>	<u>11,283,123</u>	<u>97%</u>	<u>11,580,000</u>	<u>11,283,123</u>	<u>(296,877)</u>	<u>97%</u>
Other financing sources	4,010,000	3,650,000	91%	4,010,000	3,650,000	(360,000)	91%
Transfers	<u>4,520,000</u>	<u>4,490,000</u>	<u>99%</u>	<u>4,520,000</u>	<u>4,490,000</u>	<u>(30,000)</u>	<u>99%</u>
Total revenue	<u>20,110,000</u>	<u>19,423,123</u>	<u>97%</u>	<u>20,110,000</u>	<u>19,423,123</u>	<u>(686,877)</u>	<u>97%</u>
Expenditures							
City Council	49,000	42,319	86%	49,000	42,319	6,681	86%
City Manager	596,650	599,452	100% ¹	596,650	599,452	(2,802)	100%
Community Development and Public Works	6,950,900	6,956,753	100% ^{1,2}	6,950,900	6,956,753	(5,853)	100%
Engineering Services	542,000	501,577	93%	542,000	501,577	40,423	93%
Facilities Management	1,207,000	905,111	75%	1,207,000	905,111	301,889	75%
Finance	706,000	675,747	96%	706,000	675,747	30,253	96%
Fleet Services	632,000	677,781	107% ³	632,000	677,781	(45,781)	107%
Human Resources	331,000	226,915	69%	331,000	226,915	104,085	69%
Information Systems Technology	1,154,000	1,113,054	96%	1,154,000	1,113,054	40,946	96%
Municipal Court	353,000	336,527	95%	353,000	336,527	16,473	95%
Planning Services	566,000	516,367	91%	566,000	516,367	49,633	91%
Code Enforcement	202,000	174,328	86%	202,000	174,328	27,672	86%
Public Access Studio	153,000	57,153	37%	153,000	57,153	95,847	37%
Records and Information Management	431,000	364,333	85%	431,000	364,333	66,667	85%
Non-Departmental	1,051,000	634,469	60%	1,051,000	634,469	416,531	60%
Police Administration	515,000	478,126	93%	515,000	478,126	36,874	93%
Police Field Services	5,240,000	5,219,375	100%	5,240,000	5,219,375	20,625	100%
Police Support Services	<u>314,000</u>	<u>289,065</u>	<u>92%</u>	<u>314,000</u>	<u>289,065</u>	<u>24,935</u>	<u>92%</u>
Total expenditures	<u>20,993,550</u>	<u>19,768,452</u>	<u>94%</u>	<u>20,993,550</u>	<u>19,768,452</u>	<u>1,225,098</u>	<u>94%</u>
Revenue over (under) expenditures	(883,550)	(345,329)		(883,550)	(345,329)	538,221	
Beginning fund balance	<u>5,717,000</u>	<u>5,781,952</u>		<u>5,717,000</u>	<u>5,781,952</u>	<u>64,952</u>	
Ending fund balance	<u>\$ 4,833,450</u>	<u>\$ 5,436,623</u>		<u>\$ 4,833,450</u>	<u>\$ 5,436,623</u>	<u>\$ 603,173</u>	

¹ The Community Services Department actual activity has moved to the City Manager, Community Development and Public Access Studio Departments.

² Most revenues and expenditures related to the Portland-Milwaukie Light Rail (PMLR) project have been recorded in the first quarter of the fiscal year for accounting purposes.

³ Fleet costs include expenses for services billed to other agencies.

City of Milwaukie, Oregon
Quarterly Financial Report
Budget-to-Actual
Through the fourth quarter ended June 30, 2013

Library Fund

	Year-to-Date through June 30, 2013			Annual through June 30, 2013 (year-to-date)			
	Flexible Budget	Actual	% of Budget	Annual Budget	Actual	Variance	% of Budget
Revenue							
Intergovernmental revenue	\$ 1,403,000	\$ 1,337,131	95%	\$ 1,403,000	\$ 1,337,131	\$ (65,869)	95%
Fines	61,000	61,442	101%	61,000	61,442	442	101%
Miscellaneous	-	10,007	100%	-	10,007	10,007	100%
Allocation of general property taxes	936,000	936,000	100%	936,000	936,000	-	100%
Total revenue	2,400,000	2,344,580	98%	2,400,000	2,344,580	(55,420)	98%
Expenditures							
Personnel services	1,442,000	1,429,896	99%	1,442,000	1,429,896	12,104	99%
Materials & services	207,000	185,566	90%	207,000	185,566	21,434	90%
Debt service	195,000	195,000	100%	195,000	195,000	-	100%
Transfers	710,000	710,000	100%	710,000	710,000	-	100%
Total expenditures	2,554,000	2,520,462	99%	2,554,000	2,520,462	33,538	99%
Revenue over (under) expenditures	(154,000)	(175,882)		(154,000)	(175,882)	(21,882)	
Beginning fund balance	657,000	557,060 ¹		657,000	557,060	(99,940)	
Ending fund balance	\$ 503,000	\$ 381,178		\$ 503,000	\$ 381,178	\$ (121,822)	

¹ Beginning Fund Balance was less than anticipated, resulting in more property tax revenue being allocated to the Library in the Supplemental Budget as reflected.

City of Milwaukie, Oregon
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Building Inspection Fund

	Year-to-Date through June 30, 2013			Annual through June 30, 2013 (year-to-date)			
	Flexible Budget	Actual	% of Budget	Annual Budget	Actual	Variance	% of Budget
Revenue							
Fees & charges	\$ 385,000	\$ 281,417	73%	\$ 385,000	\$ 281,417	\$ (103,583)	73%
Miscellaneous	5,000	526	11%	5,000	526	(4,474)	11%
Total revenue	390,000	281,943	72%	390,000	281,943	(108,057)	72%
Expenditures							
Personnel services	210,000	209,565	100%	210,000	209,565	435	100%
Materials and services	8,000	10,367	130% ¹	8,000	10,367	(2,367)	130%
Transfers	70,000	70,000	100%	70,000	70,000	-	100%
Total expenditures	288,000	289,932	101%	288,000	289,932	(1,932)	101%
Revenue over (under) expenditures	102,000	(7,989)		102,000	(7,989)	(109,989)	
Beginning fund balance	80,000	284,156		80,000	284,156	204,156	
Ending fund balance	<u>\$ 182,000</u>	<u>\$ 276,167</u>		<u>\$ 182,000</u>	<u>\$ 276,167</u>	<u>\$ 94,167</u>	

¹ Unexpected costs were incurred to fill a temporary personnel gap using a contracted service.

City of Milwaukie, Oregon
Quarterly Financial Report
Budget-to-Actual
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Transportation Fund - in Total

	Year-to-Date through June 30, 2013			Annual through June 30, 2013 (year-to-date)			
	Flexible Budget	Actual	% of Budget	Annual Budget	Actual	Variance	% of Budget
Revenue							
Dedicated to St/Surf Maintenance Program:							
Fees (from street maintenance fee)	\$ 606,000	\$ 612,159	101%	\$ 606,000	\$ 612,159	\$ 6,159	101%
Franchise fees (from 1.5% privilege tax)	327,000	315,054	96%	327,000	315,054	(11,946)	96%
Intergovernmental (from local gas tax)	186,000	219,519	118% ¹	186,000	219,519	33,519	118%
	<u>1,119,000</u>	<u>1,146,732</u>	<u>102%</u>	<u>1,119,000</u>	<u>1,146,732</u>	<u>27,732</u>	<u>102%</u>
Intergovernmental (from state gas tax)	1,145,000	1,185,064	103%	1,145,000	1,185,064	40,064	103%
Intergovernmental (other)	1,194,000	-	- ²	1,194,000	-	(1,194,000)	-
Franchise fees (from utility funds)	616,000	615,999	100%	616,000	615,999	(1)	100%
Miscellaneous	419,000	81,916	20% ³	419,000	81,916	(337,084)	20%
	<u>4,493,000</u>	<u>3,029,711</u>	<u>67%</u>	<u>4,493,000</u>	<u>3,029,711</u>	<u>(1,463,289)</u>	<u>67%</u>
Expenditures							
Personnel services	447,000	417,870	93%	447,000	417,870	29,130	93%
Materials and services	520,000	455,857	88%	520,000	455,857	64,143	88%
Transfers	1,010,000	1,010,000	100%	1,010,000	1,010,000	-	100%
Capital outlay	3,407,000	1,599,773	47% ²	3,407,000	1,599,773	1,807,227	47%
	<u>5,384,000</u>	<u>3,483,500</u>	<u>65%</u>	<u>5,384,000</u>	<u>3,483,500</u>	<u>1,900,500</u>	<u>65%</u>
Revenue over (under) expenditures	(891,000)	(453,789)		(891,000)	(453,789)	437,211	
Beginning fund balance	<u>1,792,000</u>	<u>1,738,589</u>		<u>1,792,000</u>	<u>1,738,589</u>	<u>(53,411)</u>	
Ending net available fund balance	<u>\$ 901,000</u>	<u>\$ 1,284,800</u>		<u>\$ 901,000</u>	<u>\$ 1,284,800</u>	<u>\$ 383,800</u>	

¹ The City received a back payment from a provider that had not been paying local gas tax resulting in more revenue than anticipated.

² Projects qualifying for grants during the year have not yet been completed to allow for reimbursement.

³ Less FILOC funds were available for use than had been originally anticipated resulting in less revenue and less expenditures than budgeted.

City of Milwaukie, Oregon
Quarterly Financial Report
Budget-to-Actual
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Transportation Fund - by Program

Street Surface Maintenance Program

	Year-to-Date through June 30, 2013			Annual through June 30, 2013 (year-to-date)			
	Flexible Budget	Actual	% of Budget	Annual Budget	Actual	Variance	% of Budget
Revenue							
Dedicated to St/Surf Maintenance Program:							
Fees (from street maintenance fee)	\$ 606,000	\$ 612,159	101%	\$ 606,000	\$ 612,159	\$ 6,159	101%
Franchise fees (from 1.5% privilege tax)	327,000	315,054	96%	327,000	315,054	(11,946)	96%
Intergovernmental (from local gas tax)	186,000	219,519	118% ¹	186,000	219,519	33,519	118%
Total revenue	1,119,000	1,146,732	102%	1,119,000	1,146,732	27,732	102%
Expenditures							
Materials and services	60,000	15,132	25%	60,000	15,132	44,868	25%
Transfers	202,000	202,000	100%	202,000	202,000	-	100%
Capital outlay	1,420,000	1,382,963	97%	1,420,000	1,382,963	37,037	97%
Total expenditures	1,682,000	1,600,095	95%	1,682,000	1,600,095	81,905	95%
Revenue over (under) expenditures	(563,000)	(453,363)		(563,000)	(453,363)	109,637	
Beginning fund balance	1,459,000	1,903,732		1,459,000	1,903,732	444,732	
Ending net available fund balance	\$ 896,000	\$ 1,450,369		\$ 896,000	\$ 1,450,369	\$ 554,369	

State Gas Tax Program

	Year-to-Date through June 30, 2013			Annual through June 30, 2013 (year-to-date)			
	Flexible Budget	Actual	% of Budget	Annual Budget	Actual	Variance	% of Budget
Revenue							
Intergovernmental (from state gas tax)	1,145,000	1,185,064	103%	1,145,000	1,185,064	40,064	103%
Intergovernmental (other)	1,194,000	-	- ²	1,194,000	-	(1,194,000)	-
Franchise fees (from utility funds)	616,000	615,999	100%	616,000	615,999	(1)	100%
Fee in lieu of construction	405,000	64,499	16% ³	405,000	64,499	(340,501)	16%
Miscellaneous	14,000	17,417	124%	14,000	17,417	3,417	124%
Total revenue	3,374,000	1,882,979	56%	3,374,000	1,882,979	(1,491,021)	56%
Expenditures							
Personnel services	447,000	417,870	93%	447,000	417,870	29,130	93%
Materials and services	460,000	440,725	96%	460,000	440,725	19,275	96%
Transfers	808,000	808,000	100%	808,000	808,000	-	100%
Capital outlay	1,987,000	216,810	11% ²	1,987,000	216,810	1,770,190	11%
Total expenditures	3,702,000	1,883,405	51%	3,702,000	1,883,405	1,818,595	51%
Revenue over (under) expenditures	(328,000)	(426)		(328,000)	(426)	327,574	
Beginning fund balance	333,000	(165,143)		333,000	(165,143)	(498,143)	
Ending net available fund balance	\$ 5,000	\$ (165,569)		\$ 5,000	\$ (165,569)	\$ (170,569)	

¹ The City received a back payment from a provider that had not been paying local gas tax, resulting in more revenue than anticipated.

² Projects qualifying for grants during the year have not yet been completed to allow for reimbursement.

³ Less FLOOC funds were available for use than had been originally anticipated resulting in less revenue and less expenditures than budgeted.

City of Milwaukie, Oregon
Quarterly Financial Report
Budget-to-Actual
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Water Fund

	Year-to-Date through June 30, 2013			Annual through June 30, 2013 (year-to-date)			
	Flexible Budget	Actual	% of Budget	Annual Budget	Actual	Variance	% of Budget
Revenue							
Fees and charges	\$ 2,786,000	\$ 2,738,689	98% ¹	\$ 2,786,000	2,738,689	(47,311)	98%
Miscellaneous	61,000	55,432	91%	61,000	55,432	(5,568)	91%
Total revenue	2,847,000	2,794,121	98%	2,847,000	2,794,121	(52,879)	98%
Expenditures							
Personnel services	581,000	522,580	90%	581,000	522,580	58,420	90%
Materials and services	629,000	594,536	95%	629,000	594,536	34,464	95%
Transfers	980,000	980,000	100%	980,000	980,000	-	100%
Capital outlay	444,000	277,040	62%	444,000	277,040	166,960	62%
Total expenditures	2,634,000	2,374,156	90%	2,634,000	2,374,156	259,844	90%
Revenue over (under) expenditures	213,000	419,965		213,000	419,965	206,965	
Beginning fund balance	(267,000)	(224,869)		(267,000)	(224,869)	42,131	
Ending fund balance	\$ (54,000)	\$ 195,096		\$ (54,000)	\$ 195,096	\$ 249,096	

¹ Water consumption is up compared to last year.

City of Milwaukie, Oregon
Quarterly Financial Report
Budget-to-Actual
Through the fourth quarter ended June 30, 2013

Wastewater Fund

	Year-to-Date through June 30, 2013			Annual through June 30, 2013 (year-to-date)			
	Flexible Budget	Actual	% of Budget	Annual Budget	Actual	Variance	% of Budget
Revenue							
Fees and charges	\$ 6,386,000	\$ 6,257,114	98%	\$ 6,386,000	\$ 6,257,114	\$ (128,886)	98%
Intergovernmental	168,000	-	- ¹	168,000	-	(168,000)	-
Miscellaneous	5,000	-	-	5,000	-	(5,000)	-
Proceeds from reimbursement district	123,000	120,326	98%	123,000	120,326	(2,674)	98%
Total revenue	6,682,000	6,377,440	95%	6,682,000	6,377,440	(304,560)	95%
Expenditures							
Personnel services	433,000	393,923	91%	433,000	393,923	39,077	91%
Materials and services	4,435,000	4,415,528	100%	4,435,000	4,415,528	19,472	100%
Debt service	110,000	100,919	92%	110,000	100,919	9,081	92%
Transfers	980,000	980,000	100%	980,000	980,000	-	100%
Capital outlay	1,843,000	1,144,085	62% ¹	1,843,000	1,144,085	698,915	62%
Total expenditures	7,801,000	7,034,455	90%	7,801,000	7,034,455	766,545	90%
Revenue over (under) expenditures	(1,119,000)	(657,015)		(1,119,000)	(657,015)	461,985	
Beginning fund balance	3,260,000	3,085,206		3,260,000	3,085,206	(174,794)	
Ending fund balance	\$ 2,141,000	\$ 2,428,191		\$ 2,141,000	\$ 2,428,191	\$ 287,191	

¹ Projects qualifying for grants during the year have not yet been completed to allow for reimbursement.

City of Milwaukie, Oregon
Quarterly Financial Report
Budget-to-Actual
Through the fourth quarter ended June 30, 2013

Stormwater Fund

	Year-to-Date through June 30, 2013			Annual through June 30, 2013 (year-to-date)			
	Flexible Budget	Actual	% of Budget	Annual Budget	Actual	Variance	% of Budget
Revenue							
Fees and charges	\$ 1,956,000	\$ 1,971,315	101%	\$ 1,956,000	\$ 1,971,315	\$ 15,315	101%
Intergovernmental	300,000	-	- ¹	300,000	-	300,000	-
Miscellaneous	1,000	5,708	571%	1,000	5,708	4,708	571%
Total revenue	2,257,000	1,977,023	88%	2,257,000	1,977,023	320,023	88%
Expenditures							
Personnel services	411,000	422,978	103% ²	411,000	422,978	(11,978)	103%
Materials and services	339,000	266,264	79%	339,000	266,264	72,736	79%
Transfers	740,000	740,000	100%	740,000	740,000	-	100%
Capital outlay	1,175,000	82,510	7% ¹	1,175,000	82,510	1,092,490	7%
Total expenditures	2,665,000	1,511,752	57%	2,665,000	1,511,752	1,153,248	57%
Revenue over (under) expenditures	(408,000)	465,271		(408,000)	465,271	833,225	
Beginning fund balance	1,391,000	1,416,231		1,391,000	1,416,231	25,231	
Ending fund balance	\$ 983,000	\$ 1,881,502		\$ 983,000	\$ 1,881,502	\$ 898,502	

¹ Projects qualifying for grants during the year have not yet been completed to allow for reimbursement.

² Unexpected costs in personnel services.

City of Milwaukie, Oregon
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Systems Development Charges Fund

	Year-to-Date through June 30, 2013			Annual through June 30, 2013 (year-to-date)			
	Flexible Budget	Actual	% of Budget	Annual Budget	Actual	Variance	% of Budget
Revenue							
System development charges	\$ 384,000	\$ 50,615	13%	\$ 384,000	\$ 50,615	\$ (333,385)	13%
Miscellaneous	6,000	129	2%	6,000	129	(5,871)	2%
Total revenue	390,000	50,744	13%	390,000	50,744	(339,256)	13%
Expenditures							
Materials and services	128,000	65,927	52% ¹	128,000	65,927	62,073	52%
Capital outlay	666,000	81,349	12%	666,000	81,349	584,651	12%
Total expenditures	794,000	147,276	19%	794,000	147,276	646,724	19%
Revenue over (under) expenditures	(404,000)	(96,532)		(404,000)	(96,532)	307,468	
Beginning fund balance	1,854,000	1,759,844		1,854,000	1,759,844	(94,156)	
Ending fund balance	<u>\$ 1,450,000</u>	<u>\$ 1,663,312</u>		<u>\$ 1,450,000</u>	<u>\$ 1,663,312</u>	<u>\$ 213,312</u>	

¹ Materials and services expenditures are for the stormwater master plan and are not incurred evenly throughout the year.

City of Milwaukie, Oregon
Quarterly Financial Report
Project Status Report
Through the fourth quarter ended June 30, 2013

Project Status Report

Year-to-Date through June 30, 2013

General Fund	Number	Annual Budget	Actual	Variance	% of Budget	Project Status
Portland-Milwaukie Light Rail (PMLR)	D06	4,946,000	5,105,594	(159,594)	103%	Accounting treatment of City obligation for PMLR.
PSB - Replace Emergency Generator	F08	100,000	-	100,000	-	On hold pending a grant application.
JCB - Property Retaining Wall	F09	80,000	-	80,000	-	Project not started but expected to begin in the next 90 days.
Klein Point and Riverfront Construction	Q01	333,000	328,245	4,755	99%	Project completed 12/2012. Metro reimbursements completed 5/2013.
Capital Campaign	Q03	30,000	34,121	(4,121)	114%	C3 Strategies work halted February 2013.
Riverfront Design	Q04	100,000	84,027	15,973	84%	Design and estimates provided for grant applications. Next stage of design will include completion of construction docs for June 2014 grant project construction. Specific task being negotiated with DEA.
Total General Fund Capital Projects		5,589,000	5,551,987	37,013	99%	
Transportation Fund						
State Gas Tax						
Harrison Street Reconstruction - Phase 1 (Campbell to 42nd) & Monroe	S01	-	500	(500)	-	Project completed.
Walk Safety Milwaukie Program	T01	160,000	55,311	104,689	35%	Because of Fund's status no additional money is expected to be spent for this project in this budget cycle. However, it is assumed that the program will return once the Fund can afford to support it.
Lake Road Multimodal Improvements Phase 1	T02	350,000	-	350,000	-	This project is in a closeout phase with ODOT. Their may be minor charges incurred with ODOT's Design Consultant in which the City will have a 11% share in.
Union Pacific Mainline Railroad Quiet Zone	T03	195,000	58,638	136,362	30%	Staff is preparing to start construction with Brown Contracting in September. Completion (including QZ designation) is expected to occur before Dec. 31, 2013.
School Zone Implementation	T04	25,000	11,327	13,673	45%	All zones have been updated with the exception of the downtown. Completion of the downtown school zones was held off to prevent duplication of work with TriMet improvements. Staff expects to spend the remaining 13k.
17th Avenue Pedestrian Improvements	T05	963,000	-	963,000	-	This represents METRO's contribution. These are not City funds.
Lake Road Safe Routes to School	T06	234,000	-	234,000	-	Project was cancelled via Council direction.
Adams Street Improvements	T07	60,000	91,034	(31,034)	152%	Project is nearing final design. Construction is expected to begin early spring of 2014. Construction must be complete by June 2014 in order to be reimbursed the full amount expended on the project.
Total State Gas Tax Projects		1,987,000	216,810	1,770,190	11%	
Street Surface Maintenance Program						
Harrison Street Reconstruction - Phase 1 (Campbell to 42nd) & Monroe	S01	1,355,000	1,354,763	237	100%	This project is complete.
SSMP Preventative Maintenance	S04	65,000	2,875	62,125	4%	Project completed. It was coupled with FY14's SSMP Preventative Maintenance for a combined total of \$130,000.
McBrod Avenue	S07	-	12,375	(12,375)	-	Project was performed ahead of schedule so that the McBrod water project could also take advantage of the survey data.
Lake Road	T02	-	12,950	(12,950)	-	Final payment on Lake Road.
Total Street Surface Maintenance Program Projects		1,420,000	1,382,963	37,037	97%	
Total Transportation Fund Capital Projects		3,407,000	1,599,773	1,807,227	47%	
Water Fund						
Maintenance Improvements	W03	40,000	18,935	21,065	47%	Miscellaneous improvements.
Harrison St Water System Improvement Ph II (21st to UPRR Crossing)	W04	404,000	258,105	145,895	64%	Currently under construction and expected to be completed at cost of \$479k (includes SDC funding).
Total Water Fund Capital Projects		444,000	277,040	166,960	62%	

City of Milwaukie, Oregon
Quarterly Financial Report
Project Status Report
Through the fourth quarter ended June 30, 2013

Project Status Report

Year-to-Date through June 30, 2013

General Fund	Number	Annual Budget	Actual	Variance	% of Budget	Project Status
Wastewater Fund						
Harrison Street LRT Crossing Replacement	X01	120,000	-	120,000	-	This total includes \$58K from TriMet which reduces Milwaukie's budgetary obligation to \$62K. Project work was completed as a part of the Pipe Replacement for PMLR and SSMP (without transfer of any funds). Project completed.
Monroe Street LRT Crossing Replacement	X02	220,000	-	220,000	-	This total includes \$110K from TriMet which reduces Milwaukie's budgetary obligation to \$110K. Work was completed as a part of the Pipe Replacement for PMLR and SSMP (without transfer of any funds). Project completed.
Fix Identified Trouble Spots	X06	-	250	(250)	100%	Project is expected to be completed by Oct. 31st. Staff anticipates a total cost \$1,222,000.
Wastewater Main Repair Program	X07	110,000	67,154	42,846	61%	Staff will be combining the remaining \$42k with \$100k budgeted in the 2nd year of the biennium to perform the 2nd half of this work.
Pipe Replacement for Light Rail and SSMP	X08	1,393,000	1,076,681	316,319	77%	Project completed. Staff expects this contract to cost approximately \$637k. Payment for this project will be made in a lump sum. While an additional \$500K coming in at the second half of the biennium, this project is well under budget. Scheduled to be constructed in FY14. Staff began this project ahead of schedule in FY13. Staff expects that this contract will sum \$1,222,000.
Total Wastewater Fund Capital Projects		1,843,000	1,144,085	698,915	62%	
Stormwater Fund						
Stanley Avenue Pipe Replacement	Y05	600,000	3,397	596,603	1%	Staff plans on designing this project over the winter for a construction window of next summer. The total budget include an additional \$600k from the 2nd half of the biennium.
UIC Decommission/Pretreat Program	Y03	90,000	-	90,000	-	Staff is currently waiting on a permit from DEQ to determine which UIC's will need decommissioning and how they will be decommissioned.
Kellogg Creek Dam Removal and HWY 99E Underpass	Y04	350,000	-	350,000	-	Tied to Wildlands Contract. Undetermined when (or if) this money will be spent.
Upsizing Storm Pipe at Rail Crossing	Y02	75,000	-	75,000	-	Staff expects that this \$75k will be paid to Light Rail as billed in FY14.
Stormwater Master Plan	Y01	60,000	79,113	(19,113)	132%	Project completed. Overages will be absorbed into Stormwater Capital Outlay in lieu of supplemental budget as proposed by Finance.
Total Stormwater Fund Capital Projects		1,175,000	82,510	1,092,490	7%	
SDC Fund						
Portland-Milwaukie Light Rail	D06	74,000	25,021	48,979	34%	Accounting treatment of City obligation for PMLR.
Portland-Milwaukie Light Rail	D06	61,000	-	61,000	-	Accounting treatment of City obligation for PMLR.
Union Pacific Mainline Railroad Quiet Zone	T03	50,000	261	49,739	1%	Staff is currently waiting for rail permits to perform the 3rd phase of this project. Completion (including QZ designation) is expected to occur before Dec. 31, 2013.
17th Avenue Pedestrian Improvements	T05	50,000	-	50,000	-	Staff expects this money to be transferred to ODOT in one lump sum prior to the end of FY14.
Kellogg Lake Multi Use Bridge	T08	200,000	-	200,000	-	Matching funds
Harrison St Water System Improvement Ph II (21st to UPRR C	W04	81,000	44,741	36,259	55%	Work under this project title was combined with the Clay Pipe Replacement project.
Pipe Replacement for Light Rail and SSMP	X08	150,000	-	150,000	-	Nearing completion. Staff expects this contract to cost approximately \$622k. Payment for this project will be made in a lump sum.
Brookside Forcemain	X09	-	11,326	(11,326)	-	This project has been cancelled. No additional money will be spent under this line item.
Total SDC Fund Capital Projects		666,000	81,349	584,651	12%	





Agenda Item: WS 3.
Meeting Date: 10/01/13

COUNCIL AGENDA ITEM SUMMARY

Issue/Agenda Title: TSP Update

Prepared By: Brett Kelter, Associate Planner

Dept. Head Approval: Stephen Butler, Planning Director

City Manager Approval: Bill Monahan, City Manager

Reviewed by City Manager: 9/18/13

ISSUE BEFORE THE COUNCIL

Briefing on Transportation System Plan (TSP) update project

STAFF RECOMMENDATION

None—preparation for adoption hearing

KEY FACTS & INFORMATION SUMMARY

Planning Department staff last briefed Council about the TSP update project on July 16, 2013. Since then, staff prepared a draft of the proposed amendments to the TSP and made it available for public review on August 20. Staff hosted a public meeting on September 5 for discussion of the public review draft, in advance of the adoption process.

On September 10, the Planning Commission opened a public hearing to consider the proposed amendments and took testimony from 11 people. The Commission identified a few issues for further discussion and continued the hearing to September 24, with the expectation of conducting deliberations and producing a recommendation to City Council. If the Commission makes a recommendation on September 24, staff will ask Council to open a public hearing on the proposed amendments at its regular session on October 15.

Staff proposes to use the October 1 worksession to prepare Council for its public hearing on the proposed amendments to the TSP. The worksession briefing will include the following components:

- Overview of the TSP and the 2013 Update project
- Review of TSP structure and significant proposed changes by chapter
- Presentation of key issues

OTHER ALTERNATIVES CONSIDERED

n/a

CITY COUNCIL GOALS

Goal 6d: Carry out review of the TSP.

ATTACHMENT LIST

1. Addendum to August 20 draft of proposed TSP amendments
2. Explanation of Proposed TSP Amendments
3. Proposed Changes to Project Priorities

FISCAL NOTES

The TSP update project does not require additional funds.



To: Mayor and City Council

Through: Bill Monahan, City Manager

From: Brett Kelter, Associate Planner

Subject: TSP Update in Advance of Public Hearing

Date: September 24, 2013, for October 1, 2013, Work Session

ACTION REQUESTED

None. This is an update in advance of the Council's first public hearing to consider adoption of proposed amendments to the TSP.

HISTORY OF PRIOR ACTIONS AND DISCUSSIONS

- **September 24, 2013:** Continuation of Planning Commission public hearing on proposed TSP amendments
- **September 10, 2013:** Opening of public hearing by Planning Commission on proposed TSP amendments
- **July 16, 2013:** Most recent Council briefing on project status
- **May 21, 2013:** Council briefing on project status
- **March 5, 2013:** Council briefing on TSP update project
- **December 2007:** Adoption of revised TSP (Ord. #1975, Files CPA-07-01, ZA-07-01)
- **July 1997:** Adoption of first TSP (Ordinance #1820, Land Use File CPA-96-01)

BACKGROUND

The City's Transportation System Plan (TSP) implements the State Transportation Planning Rule requirement for local governments to complete long-range multi-modal transportation plans. The City's TSP was first adopted in 1997 and extensively updated in 2007.

State law requires the City's TSP to be consistent with Metro's Regional Transportation Plan (RTP). The current RTP, most recently updated by Metro in 2010, includes some new concepts and standards and has a forecasting horizon of 2035 (the current TSP has a forecasting horizon of 2030). The City has until December 31, 2013 (which is an extension from the original deadline of December 31, 2012), to demonstrate that the TSP is consistent with Metro's 2035 RTP.

Project Scope and Approach

The current version of the TSP already complies with many of the requirements of Metro's 2035 RTP. Throughout the project work to date, staff has operated with the philosophy that the new Metro requirements can be addressed with a "light touch" approach to updating the TSP. The principal components of the 2013 TSP Update include the following:

- Adjust the TSP's planning horizon year from 2030 to 2035
- Confirm that the master plans for the various modes (i.e., pedestrian, bicycle, public transit, etc.) will help the region move toward meeting its performance targets for 2035, including reductions in congestion, percentage of single-occupancy vehicle trips, and vehicle-miles traveled per capita
- Emphasize pedestrian and bicycle connectivity to transit stops
- Update existing maps, tables, and text to reflect current conditions
- Add the known PMLR alignment to master plan maps
- Remove completed projects and update project descriptions
- Reassess project priorities and update the funding forecast for project implementation

In March 2013, Council directed staff to expand the public engagement process, particularly for the reassessment of project priorities. Staff held a public Open House event on April 17 to provide more information about the TSP and the update project. On June 3, nearly 30 people gathered at a public meeting to share their perspective about transportation priorities for the City. On September 5, over 20 people gathered at another public meeting to discuss the latest draft of the proposed amendments and to prepare for the public hearing portion of the adoption process. Input gathered at these various meetings, as well as other public comments received, has been factored into the draft update materials prepared for consideration by the Planning Commission and Council.

The 2013 TSP Update was never intended to be similar in scale and scope to the 2007 update. For the level of update conducted in 2007, we would have needed to budget more money and staff time for a more thorough and far-reaching public involvement component and a much deeper look at some items. Instead, a deliberate decision was made in 2012 that major restructuring of the document was not necessary. The reasoning behind that decision was that the document's structure is sound, the identification of needs is comprehensive, and relatively little new development has occurred in Milwaukie since 2007.

While it is true that the Portland-Milwaukie Light Rail project is under construction, the light rail's potential impacts have already been studied as part of that project's earlier planning stages. Once the new light rail is operational, the City will be able to identify specific, actual additional impacts on the larger transportation system that need to be addressed.

The 2013 TSP Update has presented the City with an important opportunity to clarify how the document works and is meant to be used. This project has provided a chance to better define the TSP's relationship to the Capital Improvement Plan as well as to

other transportation-related documents (such as the Public Works Standards, which provide much more detail and governance of street cross sections than the TSP). As the City embarks upon the adoption stage of the TSP Update process, it is important to keep in mind the limited project scope and “light touch” approach.

Current Project Schedule

- **September 24, 2013:** Continuation of Planning Commission’s public hearing on proposed amendments
- **October 1, 2013:** Council briefing in preparation for public hearing
- **October 15, 2013:** Public adoption hearing with Council (*assuming the Planning Commission provides a recommendation at the September 24 hearing*)
- **November 5, 2013:** Continuation of Council’s public hearing on proposed amendments (*if needed*)
- **December 31, 2013:** Deadline for compliance with Metro's 2035 RTP

Preparation for Public Hearing

The time remaining to complete the project and demonstrate compliance is limited, and the schedule for adoption of the proposed amendments to the TSP provides only limited flexibility. However, staff is optimistic that, with some focused preparation at the October 1 worksession, the Council will be able to discuss the proposed TSP revisions, suggest any necessary adjustments, and make a decision. The following information is intended to help prepare the Council for the upcoming public hearing.

A. TSP Structure

The TSP is comprised of 14 chapters. Chapters 1-4 are introductory and set the stage for the information presented in the rest of the document:

- Chapter 1 Executive Summary
- Chapter 2 Goals and Policies
- Chapter 3 Existing Conditions
- Chapter 4 Future Forecasting Process

Chapters 5-9 address 5 basic modes of the transportation system:

- Chapter 5 Pedestrian Element
- Chapter 6 Bicycle Element
- Chapter 7 Public Transit Element
- Chapter 8 Auto Street Network Element
- Chapter 9 Freight Element

Chapters 10-12 address specific issues related to the functioning of the transportation system:

- Chapter 10 Street Design Element
- Chapter 11 Neighborhood Traffic Management Element
- Chapter 12 Downtown Parking

Finally, Chapters 13 and 14 focus on implementation of the plan:

- Chapter 13 Funding and Implementation Plan
- Chapter 14 Transportation Planning Rule Implementation

In addition, several appendices provide supplemental information:

- Appendix A Public Involvement Summary
- Appendix B Prioritized Master Plan Project List
- Appendix C Conceptual Design Options
- Appendix D Glossary of Technical Terms
- Appendix E Levels of Service (LOS) Descriptions
- Appendix F Traffic Data

For the 2013 TSP Update project, some revisions are proposed for almost every chapter, though some proposed changes are more substantial than others. For example, very few changes are proposed to Chapters 1, 2, 10, and 14. Chapter 3 is being revised to reflect current conditions. Chapters 4 and 8, which involve traffic demand models and forecasts, have been updated to shift the TSP's forecast horizon from the year 2030 to 2035. A few of the mode-specific chapters have been updated to reflect new available information about improvement options. And the project lists for all modes have been reviewed and updated in response to public comments and new understandings of current needs. With the exception of a few updated traffic data sheets and a new appendix section that shows Neighborhood District Association boundaries on the modal master plan maps, the appendices are largely being left in their 2007 form.

See Attachments 1-3 for additional background material, including a list of adjustments to the proposed amendments (Attachment 1), and explanation of the proposed amendments in chapter-by-chapter format (Attachment 2), and a list of and rationale for changes to the prioritization of some specific projects (Attachment 3).

B. Key Chapters for Council to Review Prior to the October 1 Discussion

Staff will attempt to familiarize the Council with the entire TSP document at the October 1 worksession, in order to help the Councilors identify key issues or points that they may want to focus on in their preparations for the upcoming public hearing. To most effectively prepare for the October 1 worksession, staff recommends that the Councilors focus their efforts on reviewing the following chapters in the public review draft of the proposed TSP amendments:

- Chapter 1 (Executive Summary) presents a snapshot of the entire document and summarizes the key recommendations. This section is a good synopsis of the information contained in the rest of the document.
- Chapter 2 (Goals and Policies) provides key direction for the rest of the TSP. No substantial changes are proposed to the goals and policies, with only one small addition to Goal 5, Policy a. It would be helpful to get the Council's confirmation that the adopted goals and policies remain accurate and adequate for the City.

- Chapter 3 (Existing Conditions) includes adjustments to the text, figures, and tables as needed to accurately portray the current conditions. If there is any question about the accuracy of the information presented in this chapter, staff can follow up as needed.
- Chapter 12 (Downtown Parking) outlines the various issues and concerns about parking downtown. Staff believes that the existing language continues to provide an adequate framework for addressing concerns, though several adjustments have been suggested in response to public comments, including references to parking issues in the new station areas at Tacoma St and Park Ave. It would be helpful for the Council to confirm that the strategies and policy recommendations in the TSP provide the basis necessary for moving forward to address parking concerns after the TSP update project has been completed.
- Chapter 13 (Funding and Implementation) is a key chapter because it presents the best projections of revenue and cost available at this time. In an effort to make this information more clear and understandable, staff has proposed adjustment to not only the projections themselves but also to how the information is organized and presented. The chapter includes combined lists of projects from across the various mode chapters. It would be helpful to know if the Councilors have any questions about the information contained in Chapter 13 and how it is presented.

Only minor changes are proposed for Chapters 4, 10, 11, and 14, so extended conversation about them on October 1 is not expected to be necessary. As time allows on October 1, the Council and staff can discuss proposed revisions to other significant chapters (Chapters 5-9).

CONCURRENCE

The Planning, Engineering, and Finance Departments have been coordinating on the TSP Update project to identify needed changes and verify relevant data. The Planning Commission opened a public hearing on the proposed amendments on September 10; the hearing was continued to September 24 with the aim of providing a recommendation to Council regarding the proposed amendments.

FISCAL IMPACT

The 2013 TSP Update project included funds allocated to cover the necessary traffic consultant costs; there are no additional external costs. Implementation of some of the top-priority projects listed in the TSP will involve future discussions between City Council, the Budget Committee, and City staff about how to best use the City's limited financial resources.

WORK LOAD IMPACTS

Staff time continues to be allocated to the project as a minor-level or "light-touch" update to the TSP. Staff workload has increased as the project moves through the final adoption stages but will be substantially reduced once the adoption process is completed.

ALTERNATIVES

n/a

ATTACHMENTS

1. Addendum to August 20 draft of proposed TSP amendments
2. Explanation of Proposed TSP Amendments
3. Proposed Changes to Project Priorities

Addendum to Proposed TSP Amendments

List of corrections or edits suggested for TSP amendments after the public review draft was made available on August 20, 2013

Edits highlighted in yellow were completed after the Planning Commission Hearing on September 10th, 2013

Chapter	Figure or Table Number	Edit or Correction	Page Number
1	N/A	Clarified that the intent of the 19 th Ave and Sparrow St greenway is to connect to the Trolley Trail.	1-9
3	N/A	Clarified findings related to conditions of railroad crossings to accurately describe conditions as a result of Quiet Zone changes.	3-8
3	N/A	Corrected error that referred to “pedestrian travel” instead of “bicycle travel” in the bicycle findings section.	3-13
3	N/A	Edited “Pavement Conditions” section to clarify that it is the responsibility of the Street Surface Maintenance Program (SSMP) to determine the schedule of surface maintenance projects, not the TSP. <i>(Additional edits were made after September 10th Planning Commission hearing.)</i>	3-29
3	Figure 3-11	Added figure to illustrate the location of current, completed, and future Street Surface Maintenance Program projects.	3-31
3	N/A	Added finding that heavy truck traffic cutting through neighborhood streets has impacts on neighborhood livability.	3-45
5	Table 5-1	Split the sidewalk portion of Project V (Stanley Ave Neighborhood Greenway) into north and south segments to assist with future prioritization for funding and implementation.	5-8
5	Table 5-1	Added Adams St Connector project to the Pedestrian Master Plan project list	5-9
5	Table 5-1	Split Project W (Linwood Ave Sidewalks) into North and South segments to assist with future prioritization for funding and implementation.	5-11
5	Table 5-1	Corrected error that listed the extent of Project AI (Washington St Sidewalks) from 35 th Ave to 37 th Ave, instead of from 32 nd Ave to 35 th Ave.	5-11
5	Table 5-1	Removed Project AS (Springwater Trail Ramp Improvement at McLoughlin Blvd) because it has been replaced by a Tacoma Station Area Plan project (Project BD).	5-12
5	N/A	Revised text of description for Project AO (Franklin St Sidewalks) to correctly reference “Campbell Elementary School” instead of “Hector Campbell Elementary School.”	5-12
5	Table 5-3	Revised Pedestrian Action Plan to reflect project adjustments: - Adams St Connector - Stanley Ave Neighborhood Greenway	5-15

Chapter	Figure or Table Number	Edit or Correction	Page Number
6	N/A	Revised text in third paragraph to clarify that barriers exist for “east-west” travel instead of for “north-south” travel.	6-2
6	Figures 6-1 through 6-6	Added photo credits for all images of bikeway configurations.	6-4 to 6-6
6	N/A	Added description of on-street parking as a potential traffic-calming measure that could be utilized for Neighborhood Greenway treatments.	6-7
6	N/A	Revised list of strategies for increasing bicycle use to include the implementation of a bike share program.	6-8
6	N/A	Revised list of neighborhood greenways to list 17 th Ave as a distinct key project and to include 19 th Ave and Sparrow St on the list of neighborhood greenway routes.	6-8
6	N/A	Changed language on page 6-8 to accurately describe the three categories of strategy: “capital, operational and maintenance, and policy.” Adjusted “Operational” heading on page 6-9 to be “Operational and Maintenance.”	6-8 and 6-9
6	Table 6-2	Split the bicycle portions of Projects U1 (Monroe St Neighborhood Greenway) and U3 (Stanley Ave Neighborhood Greenway) into multiple segments to assist with future prioritization for funding and implementation. Re-numbered all Neighborhood Greenway projects accordingly.	6-13 to 6-14
6	Table 6-2	Removed Project AA (Springwater Trail Ramp Improvement at McLoughlin Blvd) because it has been replaced by a Tacoma Station Area Plan project (Project AL).	6-17
6	Table 6-3	Revised Bicycle Action Plan to reflect project adjustments: - Monroe St Neighborhood Greenway - Stanley Ave Neighborhood Greenway	6-19
7	Table 7-1	Harrison St Transit Shelter project – Added cost of a transit shelter for stop at Harrison St and 24 th Ave.	7-14
8	N/A	Added “by TriMet” to clarify responsibility for intersection improvement projects at Johnson Creek Blvd and 32 nd Ave.	8-14
8	Tables 8-5 and 8-7	Standardized references to McLoughlin Blvd (Hwy 99E) as “McLoughlin Blvd” for consistency purposes. (Additional edits were made after September 10 th Planning Commission hearing.)	8-16, 8-19, 8-27
8	N/A	Revised incorrect reference to Table 8-7 in last paragraph on page 8-24; should refer to Table 8-8.	8-24
8	N/A	Revised one reference to “Highway 224/99E Refinement Plan” text for consistency.	8-28

Chapter	Figure or Table Number	Edit or Correction	Page Number
8	Tables 8-10, 8-11	Revised description of project boundaries of McLoughlin Blvd portion of Hwy 224/99E Refinement Plan in narrative and in Tables 8-10 and 8-11, to be Tacoma St to River Rd instead of River Rd to 17 th Ave	8-30, 8-34, and 8-37
8	Table 8-10	Removed Project F (Intersection Improvements at Harrison St and Main St).	8-35
9	N/A	Revised "Neighborhood Livability" recommendations to include reference to Chapter 11 for list of potential strategies to reduce heavy truck traffic on neighborhood streets.	9-4
10	N/A	Removed the word "Element" from chapter title. There are five central elements or modes of travel in the TSP = pedestrian, bicycle, transit, street, freight; this chapter addresses a specific issue.	10-1
10	N/A	Revised all text that proposed changes to street design standards because these changes were implemented after 2007.	10-1 to 10-4, 10-6, 10-8, 10-9, 10-10, and 10-11
11	N/A	Removed the word "Element" from chapter title. There are five central elements or modes of travel in the TSP = pedestrian, bicycle, transit, street, freight; this chapter addresses a specific issue.	11-1
11	N/A	Included freight traffic on list of neighborhood traffic concerns to be addressed through neighborhood traffic management strategies.	11-2
11	N/A	Added description of change in state law that provides the City with the authority to reduce the speed limits on local streets by five miles per hour, in the context of potential tools for traffic calming and management.	11-2
11	N/A	Removed stipulation that NDAs will provide matching funds for traffic management projects. Revised text describing the workings of the neighborhood traffic management program.	11-11
11	Figure 11-1	Added "Neighborhood" to flowchart title to specify that this chart applies to new neighborhood traffic concerns, not issues previously identified as projects in the TSP.	11-12
11	Table 11-2	Removed "with NDA match" from funding source for Walk Safely Milwaukie Program.	11-13
12	N/A	Revised references to "Residential Permit Zone" or "Residential Parking Zone" to be consistent as "Residential Parking Permit Zone."	12-9 and 12-13
12	N/A	Adjusted text in last bullet point on the page to clarify that parking spillover from PMLR station areas could trigger the need for the establishment of a Residential Parking Permit Zone program.	12-9

Chapter	Figure or Table Number	Edit or Correction	Page Number
12	Figure 12-1	Added PMLR alignment and station, changed from "Potential Park and Ride" to "Potential Parking Structure", added number of parking spaces at each Park and Ride, and changed title of figure to remain consistent with 2007 version.	12-10
12	Table 12-1	Adjusted footnote reference to reflect name-change of "Commercial Core Enhancement Program" to "Moving Forward Milwaukie" project.	12-11
12	Table 12-1	Added footnote reference to note that the future of the Southgate Park and Ride is unclear and to clarify the City's preferred future use of the site.	12-11
12	N/A	Revised point about Action Plan for implementation of the Residential Parking Permit Zone program to provide more general guidelines instead of specific procedures. Also adjusted language to acknowledge that neighborhoods near PMLR station areas might also need to establish Residential Parking Permit Zone programs.	12-13
13	N/A	Edited language about Street Surface Maintenance Program (SSMP) to clarify the various sources of funding for the SSMP. <i>(Additional edits were made after September 10th Planning Commission hearing.)</i>	13-4 and 13-5
13	Table 13-1	Added "Other Revenue" amount of \$60,000 and re-tabulated totals accordingly.	13-5
13	Figures 13-1, 13-2	Replaced pie chart figures to reflect changes in Tables 13-1 and 13-2.	13-6 and 13-8
13	Table 13-2	Corrected computational errors related to Traditional Maintenance Activities and Action Plan Projects costs and re-tabulated totals accordingly.	13-7
13	Figure 13-3	Removed Figure 13-3 and associated text, which illustrated only one option for expected transportation expenditures over the 22-year planning period. Clarified that the TSP does not recommend a specific mix of expenditures, it only provides historical data and projected funding needs based on projects in the TSP.	13-8 and 13-9
13	Table 13-3	Revised Consolidated Action Plan to reflect project adjustments: - Adams St Connector - Monroe St Neighborhood Greenway - Stanley Ave Neighborhood Greenway - Kellogg Creek Underpass - Hwy 224 & Hwy 99E Refinement Plan	13-10 to 13-12
13	N/A	Added paragraph to "TSP Implementation and Update Steps" section to provide more detail about the relationship of the TSP to the Capital Improvement Plan (CIP), which is the main implementation device of the TSP.	13-15

Chapter	Figure or Table Number	Edit or Correction	Page Number
13	Table 13-4	Revised Prioritized Master Plan Project List to reflect project adjustments: • Adams St Connector • Monroe St Neighborhood Greenway • Stanley Ave Neighborhood Greenway • Highway 224 & Hwy 99E Refinement Plan • Intersection improvement project at Harrison St and Main St • Seismic upgrades to Johnson Creek bridges • Springwater Trail Ramp Improvement • Linwood Ave Sidewalks • Washington St Sidewalks • Franklin St Sidewalks • Kellogg Creek Underpass (Additional edits were made after September 10th Planning Commission hearing.)	13-16 to 13-18 and 13-21 to 13-25
Appendix F	N/A	Appendix F: Removed Metro Model Data Output info due to confidentiality agreement.	Removed F-1 to F-5
Appendix F	N/A	Appendix F: Added or replaced the following reports for three study intersections (two new and one updated): Linwood/Monroe (new) and King/42nd (new) and Linwood and King (updated). • Traffic count sheets • HCM intersection capacity analysis reports	Traffic Counts: F-61, F-77, F-78 HCM Reports: F-121, F-123 and F-124
Appendix F	N/A	Appendix F: Added 2035 PM Low-Build (Financially Committed) Future Volume Forecasts table.	F-125
Appendix F	N/A	Appendix F: Replaced SPIS (Safety Priority Index System) data for ODOT roadways Highway 224 and 99E.	F-149 to F-154

Note: All page number and figure/table references in the Table of Comments and throughout the document will be revised accordingly as part of the final draft.

BICYCLE FACILITIES

The bicycle is a human-powered vehicle that allows people of all ages to move independently, at relatively low cost and with little impact to the environment. Bicycling promotes the well-being of people who live and work in Milwaukie, with the added benefit of reducing auto traffic on city streets.

Milwaukie's existing bicycle system is deficient in three primary ways: lack of connectivity, difficult crossings, and insufficient street designations. Recommended improvements should be aimed at closing the gaps in the bicycle network, improve crossing safety, maintaining the existing system, improving signage, and educating cyclists and motorists.

Key Recommendations

- ~~Bike Boulevard~~**Neighborhood Greenway Improvements:** Prioritize “Neighborhood Greenways” (also sometimes referred to as “Bike Boulevards”) as a method for providing safe bikeway connections to other transportation modes and between parks, schools, activity centers, and regional destinations. Establish Neighborhood Greenways along the following routes:
 - Monroe St from downtown to Linwood Ave
 - Stanley Ave from Railroad Ave to Springwater Trail
 - 29th Ave from Springwater Trail to Monroe St (via Harvey St and 40th Ave)
 - 19th Ave and Sparrow St to Trolley Trail
- **Bikeway Improvements:** Improve existing bikeways by paving, striping, adding signage, establishing bike lanes where appropriate, etc.
- **Intersection Improvements:** Make key intersections safer and more functional for cyclists with treatments such as improved striping, accessible signal buttons, and bicycle detection devices.
- **Education:** Improve education for cyclists and drivers and encourage cycling through planned cycling events.
- **Maintenance:** Keep bike lanes clear of debris.
- **Coordination with Other Jurisdictions:**
 - Work with other jurisdictions on long-range projects such as route connectivity and trail system planning and construction.
 - Improve response on day-to-day issues such as sweeping out bike lanes and enforcing traffic and parking laws.

Summary of Pedestrian Findings

The following summarizes key pedestrian findings related to the level of activity documented as well as deficiencies for this mode of travel. These findings will be utilized to help guide future improvements to address the deficiencies for this mode of travel in the transportation network.

- The majority of study area intersections have pedestrian activity levels on individual legs of the intersections that are ten crossings or less during the p.m. peak hour. Locations with higher activity levels than this occur along the Springwater Trail and in downtown.
- There are a number of discontinuous sidewalks within Milwaukie that prohibit the ease of use for pedestrians to travel in and around the city. These occur primarily in the east and north areas of the city.
- The city contains numerous dead-end and curvilinear streets that hamper pedestrian connectivity.
- Travel between the northern eastern and southern western areas of the city is particularly problematic due to the location of Highway 224 and the railroad line that parallels it to the north. Both of these transportation facilities act as barriers to pedestrian travel because there are few places where these facilities can be crossed. The roadway width and average vehicle speed on Highway 224 also contribute to this barrier effect.
- The widespread use of asphalt at the city's railroad crossings is also of concern to pedestrians because it is more prone to buckling than concrete. The city has numerous at-grade railroad crossings, and the asphalt condition at these crossings varies widely. Those crossings with uneven walking surfaces, such as the one at Oak St., are of special concern to elderly and disabled individuals.

Based on a general visual survey, the surface conditions of bikeways are generally good to excellent with the exception of King Rd, where the bike and auto lanes suffer due to failing pavement conditions.

Bicycle Volume

Bicycle counts were conducted in Fall 2006 during the evening peak period (4:00 to 6:00 p.m.) at the study intersections shown in Figures 3-3a and 3-3b. At some locations, additional counts were taken in August 2007. These counts are shown in red on Figures 3-3a and 3-3b. The reported bicycle volumes are generally moderate, with the highest level of activity in the downtown area.

Summary of Bicycle Findings

The following summarizes key bicycle findings related to the level of activity documented as well as deficiencies for this mode of travel. These findings will be utilized to help guide future improvements to address the deficiencies for this mode of travel in the transportation network.

- In general, designated bikeways exist on the edges of the city and lack connectivity through the city.
- The Springwater Trail along the northern edge of the city is a valuable off-road bikeway; however, it is currently difficult to access west of 45th Ave.
- Bicyclists traveling between the northern and southern areas of the city are impeded by the location of Hwy 224 and the railroad line that parallels it to the north. Both of these transportation facilities act as barriers to pedestrian and bicycle travel because there are few places where these facilities can be crossed. The roadway width and average vehicle speed on Highway 224 also contribute to this barrier effect.

TRANSIT

Fixed route, dial-a-ride and paratransit services are available within Milwaukie for both local and regional trips. Two agencies, Clackamas County and the Tri-County Metropolitan District of Oregon Transit (TriMet), provide these services. TriMet provides transit service to and from Milwaukie, with fixed route transit services including routes 28, 29, 31, 32, 33, 34, 70, 75, 99, and 152. These routes, their approximate headways, the locations of stops, shelters, the transit center, and park-and-rides are shown in Figure 3-5. This map also shows Neighborhood District Association boundaries to provide additional context for the location of existing transit facilities.

Table 3-1, below, shows each bus route's schedule, approximate headway, and main destinations.³ Most of the bus lines serving the city operate with average headways of 30 minutes or less (three have 15 minute headways) during the peak weekday commute hours. Bus service is limited on the weekends. When in service, the bus routes listed above transport riders to several local and regional destinations, including downtown Milwaukie, Clackamas Town Center, downtown Portland, Oregon City, Clackamas Transit Center, Milwaukie Providence Hospital, Lloyd Center, Clackamas Community College, and the Milwaukie Center.

³ A headway is the amount of time between bus arrivals.

Pavement Conditions

The City of Milwaukie has conducted an extensive visual inspection of its roadways as part of an ongoing Pavement Management System (PMS). PMS is a program tool for making cost-effective decisions about pavement maintenance and rehabilitation. Pavement conditions are recorded in the TSP to document existing conditions, but no recommendations are made about the schedule of surface maintenance projects. The PMS tool is utilized by the Street Surface Maintenance Program (SSMP), which was established in 2006 to fund the assessment, maintenance, and repair of street surfaces in the city. It is the function of the SSMP to determine the schedule of surface maintenance projects. Figure 3-11 shows the location and extent of current, completed, and future SSMP projects.

To that effect, As part of the ongoing SSMP project selection process, sections of a roadway have been rated on a Pavement Condition Index (PCI), a scale that rates a roadway's condition from 0 to 100. High numbers correlate to newer streets in good condition (8-1070-100), while lower numbers (450 or less) indicate roads that have deteriorated to the point of needing rehabilitation or replacement. Milwaukie's complete PCI survey is included in the Technical Appendix updated on an annual basis.

An weighted-average PCI⁸ was calculated for the three different city street classifications—arterial, collector, and residential/local—based on the length of street covered by a specific PCI rating. These findings are summarized in Table 3-5. From the table, it can be seen that, on average, the road condition for all three street types is relatively close. On average, collector/arterial streets have the highest rating, followed by local streets/collectors and then arterials/residential/local streets.

Table 3-5 Average Pavement Condition Index

Classification	Surveyed Length (feet, citywide lane miles)	Weighted-Average Pavement Condition Index
Arterial	<u>21,460</u> <u>12.23</u>	<u>6.278</u>
Collector	<u>62,659</u> <u>24.97</u>	<u>6.964</u>
Residential/Local	<u>285,398</u> <u>111.1</u>	<u>6.558</u>

Source: City of Milwaukie PCI Survey, 2013

Table 3-6 lists the breakdown of PCI ratings throughout the city for each street type by length of roadway and percentage. This more detailed look into the pavement condition shows that the majority of the arterial (73.1%), collector (6461.8%) and residential/local (5861.8%) streets can be considered in good to excellent condition. Only 44% of Milwaukie's arterial streets, on the other hand, fall into this category. Over half of Milwaukie's streets rank in the very good to excellent/good category. In general 2436%, or nearly 1226.73 miles, of the streets in the city are considered to be in poor to very poor condition. The street sections with the lowest PCI included 51st Ave, 40th Ave, and 49th Ave Maple Ct, 56th Ave, and Lloyd St.

Table 3-6 Pavement Condition Index Rating by Functional Classification

Rating (PCI Score)	Street Type and Length in Feet and Percentage (as rated by segment)			
	Arterial	Collector	Residential/Local	Total
	<u>21,460</u> ft	<u>62,659</u> ft	<u>284,448</u> ft	<u>368,567</u> ft

$$^8 \text{Average PCI} = \frac{\sum (PCI * Length)}{\sum Length}$$



Transportation System Plan

FIGURE 3-11

LOCATION OF STREET SURFACE MAINTENANCE PROGRAM (SSMP) PROJECTS

November 2013

LEGEND

- Current SSMP Projects (FY 13/14')
- Future SSMP Projects
- Completed SSMP Projects

Other Map Features

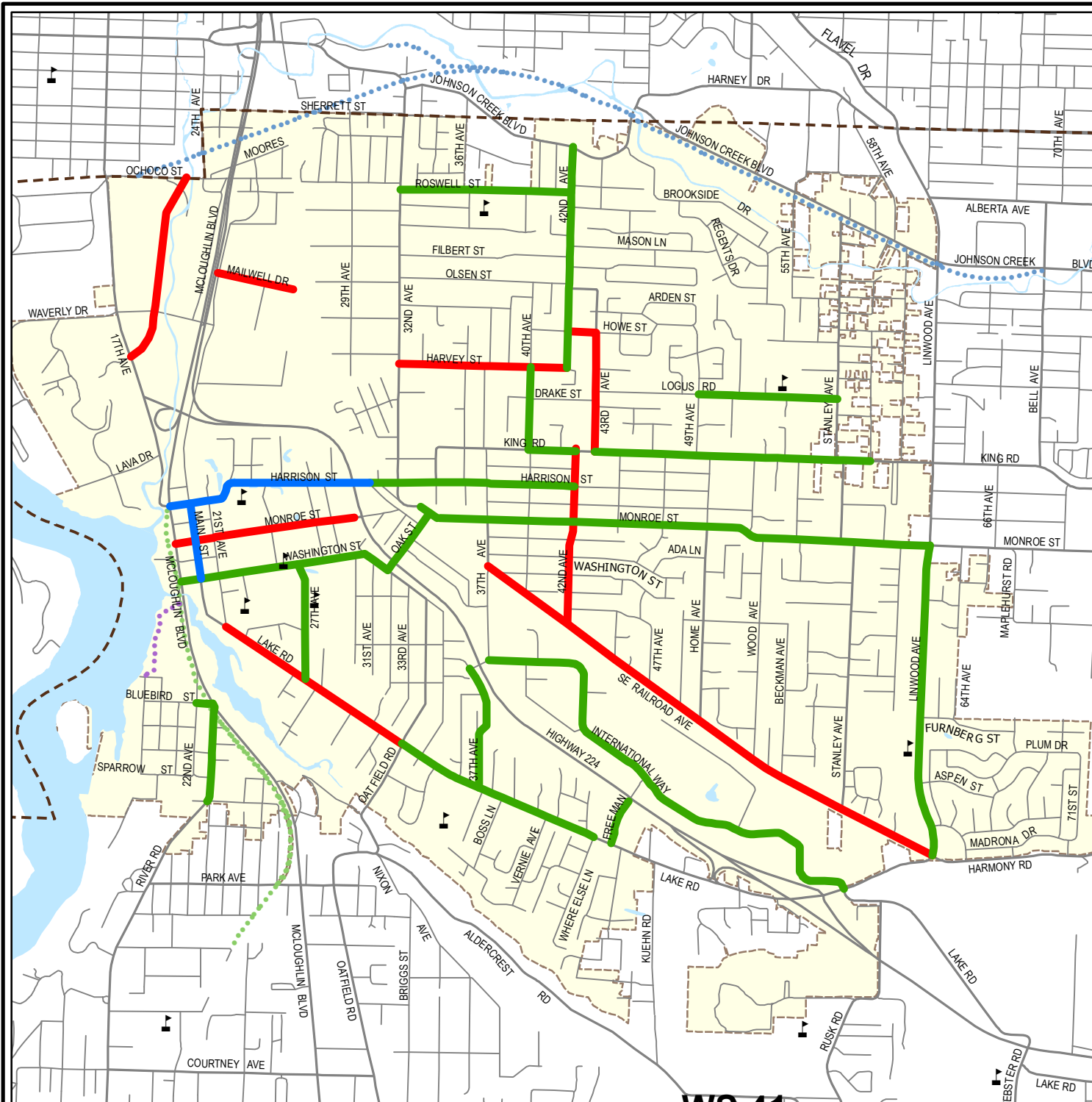
- Schools
- Kellogg Creek Trail
- Springwater Trail
- Trolley Trail
- County Line
- Water
- Major Roads
- City Limits

*Current as of November 2013. Location and extent of future projects subject to change.

DKS Associates
TRANSPORTATION SOLUTIONS



0 500 1,000 2,000 3,000 4,000 Feet



operates ~~three~~four trains per day along this line with a maximum authorized speed of 45 mph. There are twelve railroad crossings along this line, including one underpass, four overpasses, and three crossings without gates on Wren St, Bluebird St, and Bobwhite St.

The rail line operated by Oregon Pacific passes through the northwestern corner of the city of Milwaukie and has three at-grade railroad crossings, two which are without gates. These crossings without gates are at Milport Rd and McBrod Ave.

There are no airports, pipelines, ferries, or ports within Milwaukie's city limits or its UGMA.

Summary of Freight and Rail and Freight Findings

The following summarizes key findings related to other modes of travel in Milwaukie. These findings will be utilized to help guide future improvements to address the deficiencies for this mode of travel in the transportation network.

- The maximum authorized speeds within Milwaukie for many of the existing rail lines are 45-50 miles per hour. Many of the existing crossings in the city are at-grade facilities that are gated. However, there are six at-grade crossings that do not have gates. Three occur in the north Milwaukie industrial area east and west of McLoughlin Blvd, and the other three occur in the Island Station neighborhood to the south.
- Typical vertical clearance for underpasses (whether they are roadway or railway) is 14 feet.¹⁹ This is a typical clearance to allow for trucks to clear the underpass, even if they are not on a freight-classified facility. The three underpasses at Lake Rd, Sparrow St, and Lark St do not meet this typical vertical clearance.
- The traffic generated by heavy trucks cutting through neighborhoods has both real and perceived impacts on neighborhood livability, including noise, vibration, safety, aesthetics, and air quality. Accessibility issues on Highway 224 and McLoughlin Boulevard, as well as weight restrictions on Johnson Creek Boulevard, cause trucks to divert onto local streets not intended or preferred for freight traffic.

¹⁹ Based on *A Policy on Geometric Design of Highways and Streets*, Fourth Edition, American Association of State Highway and Transportation Officials (AASHTO), page 389.

Map ID ³	Priority	Type	Project Name	Project Description ⁴	From	To	Cost(\$) (\$1,000s ⁵)
U	Low High	C	43 rd Avenue Sidewalks	Fill in sidewalk gaps on both sides of street.	Howe St/42 nd Ave	King Rd/43 rd Ave	\$550 600
V1	High	C	Stanley Avenue Sidewalks Neighborhood Greenway (north)	Fill in sidewalk gaps on both sides of street.	Johnson Creek Blvd	Railroad AveKing Rd	\$4,304 \$1,900
V2	High	C	Stanley Avenue Neighborhood Greenway (south)	Fill in sidewalk gaps on both sides of street.	King Rd	Railroad Ave	\$2,800
Y	Low High	C	International Way Sidewalks	Fill in sidewalk gaps on both sides of street.	Criterion Ct	Lake Rd	\$767 840
Z	Low High	C	Harmony Road Sidewalks	Fill in sidewalk gaps on both sides of street.	Linwood Ave	City limits	\$38 40
AL	Low High	C	River Road Sidewalks	Fill in sidewalk gaps on both sides of street.	McLoughlin Blvd	City limits	\$626 690
AR	High	C	Kellogg Creek Dam Removal and Hwy 99E Underpass	Replace Hwy 99E bridge over Kellogg Creek, remove dam, restore habitat; construct bike-pedestrian undercrossing between downtown Milwaukie and Riverfront Park.	SiteLocation specific	SiteLocation specific	\$9,000 9,900
AU	High	C	Kellogg Creek Bike-Ped Bridge	Construct bike-ped overpass over Kellogg Creek in conjunction with light rail bridge.	Lake Rd	Kronberg Park	\$2,500
AV	High	C	Kronberg Park Trail	Construct multi-use path to connect bike-ped bridge to safe crossing of Hwy 99E.	Kellogg Creek Bridge	River Rd at Hwy 99E	\$300
AW	High	C	Intersection Improvements at McLoughlin Boulevard and 22 nd Avenue	Improve safety of Trolley Trail crossing at 22 nd Ave.	Location specific	Location specific	\$200
AX	High	C	Improved Connection to Springwater Trail at 29 th Avenue and Sherrett Street	Pave the connection to Springwater Trail at 29 th Ave and Sherrett St. (TSAP)	Location specific	Location specific	\$20
AY	High	C	Improved Connection from Springwater Trail to Pendleton Site (Ramps)	Construct ramps to improve existing connection of Springwater Trail to Pendleton site at Clatsop St. (TSAP)	Location specific	Location specific	\$630

Map ID ³	Priority	Type	Project Name	Project Description ⁴	From	To	Cost(\$) (\$1,000s ⁵)
AY	High	C	Improved Connection from Springwater Trail to Pendleton Site (Widened Undercrossing)	Widen existing undercrossing to improve connection of Springwater Trail to Pendleton site at Clatsop St. (TSAP)	Location specific	Location specific	\$100
AZ	High	C	Improved Connection from Springwater Trail to Tacoma Station	Construct stairs to connect Springwater Trail to Tacoma Station. (TSAP)	Location specific	Location specific	\$80
BL	High	C	Adams Street Connector	Construct pedestrian- and bicycle-only facility on Adams St between 21 st Ave and Main St	21 st Ave	Main St	\$450
N/A	Low/High	C	Intersection Curb Ramp Improvements	Install curb ramps at all intersections with sidewalks (approximately 700 intersections).	Citywide	Citywide	\$5 3,500
Medium Priority Projects							
J	Med	C	Railroad Crossing Pedestrian Improvements at Oak Street	Improve intersection for pedestrians.	Location specific	Location specific	\$15
F	High/Med	C	King Road Boulevard Treatments	Install street boulevard treatments: widen sidewalks and improve multiple crossings.	42 nd Ave	Linwood Ave	\$500 550
M	Med	C	McLoughlin Boulevard Sidewalks	Fill in sidewalk gaps on both sides of street.	Washington St	Southern city limits	\$596 650
N	Med	C	Lake Road Sidewalks	Fill in sidewalk gaps on both sides of street.	Kuehn Rd Ln	Hwy 224	\$2,049 2,200
Q	High/Med	C	Logus Road Sidewalks	Fill in sidewalk gaps on both sides of street.	43 rd Ave	49 th Ave	\$771 850
T	Med	C	37 th Avenue Sidewalks	Fill in sidewalk gaps on both sides of street.	Lake Rd	Harrison St	\$794 870
AE	Med	C	Brookside Drive Sidewalks	Fill in sidewalk gaps on both sides of street.	Johnson Creek Blvd	Regents Dr	\$15 20
AT	High/Med	C	Springwater Trail Completion	Contribute to regional project to complete Springwater Trail ("Sellwood Gap") along Ochoco Street.	17 th Ave	19 th Ave	\$80 90

Map ID ³	Priority	Type	Project Name	Project Description ⁴	From	To	Cost(\$) (\$1,000s ⁵)
I	Low	C	Intersection Improvements at Harmony and Lake	Improve pedestrian crossing.	Location specific	Location specific	\$15
K	Low	C	Intersection Improvements at Stanley Avenue and Logus Road	Improve pedestrian crossing.	Location specific	Location specific	\$15 20
R	Low	C	Olsen Street Sidewalks	Fill in sidewalk gaps on north side of street.	32 nd Ave	42 nd Ave	\$432 470
S	Low	C	Johnson Creek Boulevard Sidewalks	Fill in sidewalk gaps on both sides of street.	Harney Dr St	City limits	\$378 410
W1	Low	C	Linwood Avenue Sidewalks (north)	Fill in sidewalk gaps on both sides of street (part of Linwood Avenue road widening project).	Johnson Creek Blvd	Railroad Ave King Rd	\$2,960 1,050
W2	Low	C	Linwood Avenue Sidewalks (south)	Fill in sidewalk gaps on both sides of street (part of Linwood Ave road widening project).	King Rd	Railroad Ave	\$2,150
X	Low	C	Hwy 224 Sidewalks	Fill in sidewalk gaps on both sides of street.	Oak St	37 th Ave	\$420 460
AA	Low	C	Home Avenue Sidewalks	Fill in sidewalk gaps on both sides of street.	Railroad Ave	King Rd	\$756 830
AB	Low	C	Harvey Street Sidewalks	Fill in sidewalk gaps on both sides of street.	32 nd Ave	42 nd Ave	\$534 590
AC	Low	C	Roswell Street Sidewalks	Fill in sidewalk gaps on both sides of street.	32 nd Ave	36 th Ave	\$192 210
AD	Low	C	Mason Lane Sidewalks	Fill in sidewalk gaps on both sides of street.	42 nd Ave	Regents Dr	\$671 740
AF	Low	C	Regents Drive Sidewalks	Fill in sidewalk gaps on both sides of street.	Brookside Dr	Winsor Dr	\$494 540
AG	Low	C	Rusk Road Sidewalks	Fill in sidewalk gaps on both sides of street.	Lake Rd	North Clackamas Park	\$662 730
AH	Low	C	Pedestrian Connection to North Clackamas Park	Create pedestrian connection between the school and the park.	North Clackamas Park Rowe Middle School	Rowe Middle School North Clackamas Park	\$1,284 1,400

Map ID ³	Priority	Type	Project Name	Project Description ⁴	From	To	Cost(\$) (\$1,000s ⁵)
AI	Low	C	Washington Street Sidewalks	Fill in sidewalk gaps on both sides of street.	35th 32 nd Ave	37th 35 th Ave	\$115 130
AJ	Low	C	22 nd Avenue Sidewalks	Fill in sidewalk gaps on both sides of street.	McLoughlin Blvd	Sparrow St	\$325 360
AK	Low	C	19 th Avenue Sidewalks	Fill in sidewalk gaps on both sides of street.	Kellogg Creek Trail	Sparrow St	\$305 330
AM	Low	C	Oatfield Road Sidewalks	Fill in sidewalk gaps on both sides of street.	Guilford Ct	City limits	\$132 150
AN	Low	C	49 th Ave Sidewalks	Fill in sidewalk gaps on both sides of street.	Logus Rd	King Rd	\$250 270
AO	Med Low	C	Franklin Street Sidewalks	Install sidewalks on both sides of street to connect to <u>Hector Campbell Elementary School.</u>	42 nd Ave	45 th Ave	\$200 220
AP	Low	C	Ochoco Street Sidewalks	Construct sidewalks on Ochoco Street to connect bus stops to Goodwill.	19 th Ave	McLoughlin Blvd	\$1,300
AQ	Low	C	Edison Street Sidewalks	Fill in sidewalk gaps on both sides of street.	35 th Ave	37 th Ave	\$116 130
AS	Low	C	Springwater Trail Ramp Improvement at McLoughlin Boulevard	Improve ramp at Springwater Trail and McLoughlin Blvd.	Location specific	Location specific	\$15
AY	Low	C	Improved Connection from Springwater Trail to Pendleton Site (Tunnel)	Construct tunnel under Springwater Trail to improve connection to Pendleton site at Clatsop St. (TSAP)	Location specific	Location specific	\$1,200
BG	Low	C	Intersection Improvement at all Crossings of McLoughlin Boulevard	Improve all existing crossings of McLoughlin Blvd (e.g., extended time for crossing, signage). (ODOT to do.)	Location specific	Location specific	---
BH	Low	C	Bike-Ped Path on Sparrow Street	Establish a dedicated bicycle and pedestrian connection on Sparrow St, connecting River Rd to Trolley Trail	River Rd	Trolley Trail	\$350
BI	Low	C	Bike-Ped Overpass over McLoughlin Boulevard at River Road	Establish a dedicated bicycle and pedestrian connection across McLoughlin Blvd.	Kronberg Park	River Rd	\$2,500

ACTION PLAN

The Pedestrian Action Plan (Table 5-3) identifies the highest priority projects that are reasonably expected to be funded with local funds by 2030~~2035~~, which meets the requirements of the State's Transportation Planning Rule.⁸ The Action Plan project list is the result of ~~based upon~~ a 2007 citywide project ranking process. ~~In 2007, All of the modal master plan projects were ranked by the TSP Advisory Committee after consideration of the Working Groups' priorities, other public support for the project, and how well each project implements the TSP goals and policies. For the 2013 TSP Update, City staff reassessed the prioritization of all projects, incorporating public comments gathered at and around a public meeting in June 2013. Action Plan projects that were completed since 2007 were removed from the Action Plan and new projects identified as top priorities were added. The highest ranking pedestrian projects that are reasonably expected to be funded (see Chapter 13) with local funds are shown in Table 5-3.~~

Table 5-3 Pedestrian Action Plan

Map ID	Project Name	Project Description	From	To	Project Cost (\$1,000s)	Direct Funding or Grant Match
L	17 th Avenue Sidewalks Improvements	Fill in sidewalk gaps on both sides of street; fill in gaps in existing bicycle network with bike lanes; and/or provide multi-use path, and improve intersections safety at Milport Rd, McBrod Ave, Hwy 224, Lava Dr, and Hwy 99E.	Ochoco St	McLoughlin Blvd	\$1,000	Direct Match
BL	Adams Street Connector	Construct pedestrian- and bicycle-only facility on Adams St between 21 st Ave and Main St	21 st Ave	Main St	\$450	Match
O	Railroad Avenue Sidewalks Capacity Improvements	Pedestrian aspect: Fill in sidewalk gaps on both sides of street or construct multi-use path on one side (part of Railroad Avenue road widening project).	37 th Ave	Harmony Rd	\$1,800	Match
P	Monroe Street Sidewalks Neighborhood Greenway	Fill in sidewalk gaps on both sides of street.	42 nd Ave	City limits	\$1,800	Match
AR	Kellogg Creek Dam Removal and Hwy 99E Underpass	Replace 99E bridge over Kellogg Creek, remove dam, restore habitat; construct bike-pedestrian undercrossing between downtown Milwaukie and Riverfront Park.	Site Location specific	Site Location specific	\$9,900	Match
V1	Stanley Avenue Neighborhood Greenway (north)	Fill in sidewalk gaps on both sides of street.	Johnson Creek Blvd	King Rd	\$1,900	Match
V2	Stanley Avenue Neighborhood Greenway (south)	Fill in sidewalk gaps on both sides of street.	King Rd	Railroad Ave	\$2,800	Match

⁸ OAR Chapter 660, Department of Land Conservation and Development, Division 012, Transportation Planning, adopted on March 15, 2005, effective April 2005.

destinations. There are also two north/south roadways that have bike lanes: Linwood Ave and 17th Ave. Similar to the east/west roadways, these corridors are not continuous.

~~Two~~ Three off-street facilities serve Milwaukie (the Springwater Corridor, the Trolley Trail, and the Kellogg Creek Trail), but they are not continuous. For example, while the connectivity of the Springwater Corridor was ~~recently~~ upgraded in 2006 with completion of the "Three Bridges" project (three bridges constructed to cross over the Union Pacific Railroad, McLoughlin Blvd, and Johnson Creek), the trail ends just east of 17th Ave. Additionally, there are a limited number of connections through the city to the Springwater Corridor, especially to the west of 45th Ave. The Trolley Trail, which will be completed in conjunction with the Portland-Milwaukie Light Rail project, ends at Riverfront Park, nearly one mile south of the Springwater Corridor. The Kellogg Creek Trail connects the Milwaukie Riverfront area to the Island Station neighborhood, but doesn't not easily connect to points south.

Major facilities, such as McLoughlin Blvd, Highway 224, and the railroads, create barriers to cycling through the city, particularly for north-southeast-west travel. This lack of connectivity (both on-street and off-street) causes significant problems for bicyclists and limits this mode of travel, especially where they make it more difficult for cyclists to access major transit stops downtown.

Crossings

Throughout the city, there is a need for convenient and safe crossings at arterials and collectors. There are many locations where bicycle routes cross arterials, highways, or railroad tracks, and few of these crossings were designed to accommodate cyclists. Typically, such intersections have limited sight-distance, inadequate pavement space for bicycles, no means for tripping a signal, or no direct, safe connection. The following locations were identified as ~~particular~~ specific problem crossings:

- 17th Ave/Hwy 224
- 17th Ave/Harrison St/Hwy 99E
- Railroad crossing of 21st Ave at Adams
- Johnson Creek Blvd/Springwater Corridor
- King Rd/Stanley Ave
- Linwood Ave/Springwater Corridor
- King Rd/Linwood Ave
- Monroe St/Linwood Ave
- Linwood Ave/Harmony Rd

Street Designations

The designation of certain roadways for bicycle travel does not serve all of the needs for bicycle travel in and around the city. Many trips that connect to parks, schools, retail activity centers, etc., occur off of arterial and collector streets. These trips should generally be accommodated on lower volume streets, preferably on designated routes. Such facilities could be considered "shared" facilities or could have a specific designation such as a "bike boulevard," or "neighborhood greenway," where actual treatments to the roadway are made that enhance the bicycle environment and make additional connections to bicycle destinations.

Officials (AASHTO)¹ and the Oregon Department of Transportation (ODOT),² state that mixed-use paths can be designed along roadways, provided several design considerations are met:

- A minimum 5-foot buffer should be provided between the path and roadway to protect path users from conflicts with motorists.
- Relatively few vehicle/path user conflict points (e.g., cross-streets or driveways).
- The path can be terminated at each end onto streets with good bicycle/pedestrian facilities or onto another safe, well-designed path.
- The path should not take the place of bicycle/pedestrian facilities (e.g., sidewalks and bicycle lanes) on the parallel street.

Figure 6-1 Multi-use Path



Photo Credit: Vince Schreck, www.pdxfamilyadventures.com

Cycle Tracks

Cycle tracks can take a number of forms, depending on the nature of the existing street

infrastructure. They combine some elements of a fully separated path with those of a bike lane in the roadway. The key element of a cycle track is that it uses parked cars, bollards, landscaping, curbing, or other barriers to provide some separation from motor vehicle traffic. Cycle tracks may be one-way or two-way, and they may be located at road level, sidewalk level, or an intermediate level. They are distinct from the sidewalk and are designed exclusively as bike facilities. A recommended minimum width is 7 feet, with an additional two-foot

"door zone" buffer (where adjacent to parked cars). Pavement markings on the cycle track provide guidance for cyclists, as well as for motorists and pedestrians that may cross the cycle track at driveways or intersections.

Figure 6-2 Cycle Track



Photo Credit: Michael O'Hare, www.citiesfrominside.net

There are currently no cycle tracks in Milwaukie, and no potential cycle track routes have been identified to date. However, this type of facility represents an option for future bike improvements that might be most appropriate in certain settings to provide safer bike routes in high-traffic corridors.

Bike Lanes

When possible, bike lanes should be directly adjacent to the curb, rather than adjacent to parked cars or combined with sidewalks. The recommended width of six feet provides sufficient

¹ *A Guide for the Development of Bicycle Facilities*, American Association of State Highway and Transportation Officials, 1999.

² *Oregon Bicycle and Pedestrian Plan, An Element of the Oregon Transportation Plan*, Oregon Department of Transportation, Adopted June 14, 1995.

travel space and additional room for bicyclists to steer clear of the curb or parked cars while maintaining a comfortable distance from adjacent moving traffic. Wide bike lanes also enable bicyclists to maneuver around drainage grates, manhole covers, glass and debris. Provision of bike lanes also benefits motor vehicles, which gain greater shy distance/emergency shoulder area, and pedestrians, who gain a buffer between walking areas and moving vehicles. Where right-of-way is limited, the bike lane can be reduced to five feet. Alternatively, widening the curb travel lane (for example, from 12 feet to 14 or 15 feet) can provide better bicycle accommodations and a greater measure of safety as well. However, with higher-volume roadways (e.g., streets with more than 3,000 Average Daily Trips), dedicated bike lanes are much more desirable than wide outside lanes.

Figure 6-3 Bike Lane



Photo Credit: LA-32 Neighborhood Council
<http://la32nc.org/category/transportation>

The signing and marking of bike lanes should follow the *Manual on Uniform Traffic Control Devices* (MUTCD).

Design features in the roadway can improve bicycle safety as well. For example, using curb storm drain inlets rather than catch basins significantly improves bicycle facilities.

Shared Roadways

Shared roadways can be designed to safely accommodate

both bicycle and auto traffic. Figure 6-1 illustrates an example of an appropriate warning sign with a supplemental "Share the Road" plaque that may be used to draw more attention to the fact that slow-moving forms of transportation may be using the roadway. When used, the supplemental plaque must be installed below the warning sign on the same signpost. Directional pavement markings may also be considered on shared roadways to supplement the bicycle warning signs when desired. The pavement markings illustrated in Figure 6-1 below are typically called "Sharrows" or "Shared Lane Markings" and are utilized on bicycle travel routes that have on-street parking but no designated bike lanes. Sharrows are commonly used on streets where dedicated bike lanes are desirable but are not possible for any number of reasons. The marking helps to align bicyclists, to shift their travel pattern out of the direction of a parked car door opening into their travel path.

Figure 6-4 Shared Roadway



Photo Credit: Portland Bureau of
 Transportation
www.portlandoregon.gov/transportation

Figure 6-15 Bicycle Signs and Markings**Bicycle Warning Sign****"Share the Road" Plaque****Bike Route Sign****Bicycle Pavement Marking****Bicycle Wayfinding Signage**

It should be noted, however, that while posting "Bike Route" signage for bicyclists is an acceptable way for the City to demarcate bike routes, such signs should be coupled with pavement markings and/or way finding signage for bicyclists to get the most value out of the City's investment. Although this is an adopted MUTCD sign, it does not provide much information. Adding way-finding information such as distances to various destinations, directional arrows, and estimated travel times makes the sign much more useful. These signs are most effective when placed in useful locations, such as where a bike route makes a turn that is not intuitive to riders.

Bike Boulevards Neighborhood Greenways

The term "neighborhood greenway" has recently evolved from the "bike boulevard" concept of treatments, which improve the network of safe bicycle routes by ~~Bike boulevards~~ generally utilizing streets with lower traffic volumes and vehicle speeds, such as minor collectors or local streets that pass through residential neighborhoods. The bike boulevard treatments also make these routes safer for pedestrians and motorists (for example, through inclusion of traffic calming devices), while at the same time incorporating low-impact stormwater treatment measures such as bioswales and rain gardens. The general traffic calming provided by neighborhood greenway improvements adds to neighborhood livability.

Figure 6-6 Neighborhood Greenway

Image Credit: Bicycle Transportation Alliance/Owen Wall
www.biketrans.com

Traffic controls along a ~~bike boulevard~~ neighborhood greenway assign priority to bicyclists while encouraging through-vehicle traffic to use alternate parallel routes. Traffic calming and other treatments along the corridor reduce motor vehicle speeds so that motorists and bicyclists generally travel at the same speed, creating a safer and more comfortable environment for all users. ~~Bike boulevards~~ Neighborhood greenways also incorporate treatments to facilitate safe and convenient crossings of major streets. ~~Bike boulevards~~ Neighborhood greenways work best in well-connected street grids, where riders can follow reasonably direct and logical routes. ~~Bike boulevards~~ and where also work best when higher-order, parallel streets exist to serve through vehicle traffic.

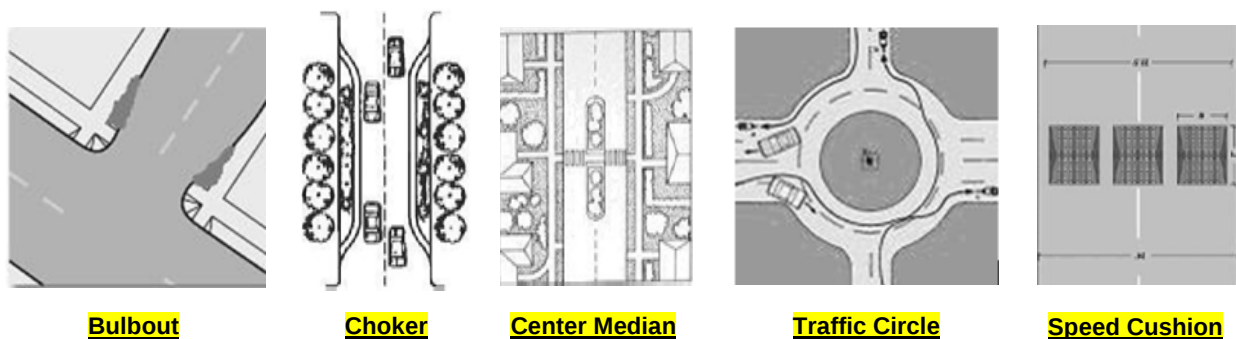
Milwaukie's ~~bike boulevard~~ neighborhood greenway network could be developed through a variety of improvements ranging from minor street enhancements (e.g., directional pavement markings) to larger-scale projects (e.g., intersection signalization). The various treatments fall into five major application levels based on their degree of physical intensity, with Level 1 representing the least physically intensive treatments that can be implemented at relatively low cost:

- **Level 1: Signage** (e.g., way-finding and warning signs along and approaching the ~~bike boulevard~~ neighborhood greenway)
- **Level 2: Pavement markings** (e.g., directional pavement markings, shared lane markings)
- **Level 3: Intersection treatments** (e.g., signalization, curb extensions, refuge islands)
- **Level 4: Traffic calming** (e.g., speed humps, mini traffic circles)
- **Level 5: Traffic diversion** (e.g., choker entrances, traffic diverters)

Corridors targeted for higher-level applications would also receive relevant lower-level treatments. For instance, a street targeted for Level 3 applications should also include Level 1 and 2 applications as necessary. It should be noted that some applications might not be appropriate on all streets. In other words, it may not be necessary to implement all Level 2 applications on a particular street designated for Level 2 treatment in order to create a functional ~~bike boulevard~~ neighborhood greenway.

Figure 6-2 shows examples of some of the types of intersection treatments and traffic calming measures that could be appropriate for application on neighborhood greenway routes. Some study and analysis is necessary to determine which measures would be most effective in specific locations. Within Chapter 11 (Neighborhood Traffic Management), Table 11-1 provides more examples of traffic calming measures.

Figure 6-7 Sample Traffic Calming Measures



Designating a street as a "bike boulevard" does not suggest that only bicyclists should use it. In fact, the treatments applied to bike boulevards make these routes safer for pedestrians and motorists as well, and the general traffic calming adds to neighborhood livability. With that in mind, using alternative labels for "bike boulevards" might be appropriate to stress the multimodal benefit. Suggestions include "community corridors" and "neighborhood parkways."

Experience from other cities that have implemented Neighborhood Greenways shows that on-street vehicle parking can function as a traffic calming measure. Drivers generally seem to slow down in response to the physical narrowing of the travel lane and the higher perceived risk of collision. In addition, parked cars create a barrier between moving cars on the street and pedestrians on the sidewalk. This barrier enhances both actual and perceived safety for pedestrians. Allowing or encouraging on-street vehicle parking can be one tool employed to make Neighborhood Greenways safe and pleasant for non-motorized travel.

Bicycle Parking

Bicycle parking and storage facilities are an important component of an effective bicycle system. Lack of proper storage facilities discourages potential riders from traveling by bicycle. Bike racks should be located at significant activity generators including schools, parks, and commercial areas, as well as at major transit stops. Racks should be placed in highly visible locations and within convenient proximity to main building entrances. Bike racks should be designed to provide two points of contact to the bicycle so the user can lock both the wheel and the frame to the rack. Bike lockers, showers, and caches of repair equipment (patch kits, tire tubes, etc.) would be helpful at locations where long-term parking is expected, such as the future MAX stations downtown, on Park Ave, and at Tacoma St.; ~~downtown bus stops;~~ ~~or~~ and major employment centers. The attractiveness of bicycle parking is also improved by providing covered parking and/or secured facilities where bicycles may be locked away.

RECOMMENDATIONS

Strategies

Bikeway improvements are aimed at closing the gaps in the bicycle network along arterial and collector roadways, establishing low-traffic routes that parallel arterials and collectors, and providing multimodal links to improve livability. To meet the TSP goals and policies outlined in Chapter 2, and address the needs outlined in this chapter, the City should take the following steps for improving the bicycle system:

- Fill in gaps in the existing bike corridor network (on arterials and collectors).
- Construct new bike lanes on strategic arterials and collectors.
- Connect key bicycle corridors to schools, parks, ~~and~~ activity centers, and major transit stops.
- Improve crossing safety and connectivity.
- Designate ~~bike boulevards~~ neighborhood greenways on lower-volume streets that connect major bicycle facilities and/or bicycle destinations.
- Maintain bike lanes, off-street paths, signage, and other facility improvements.
- Construct and improve multi-use paths for recreational and commuter use.
- Involve cyclists in the design and planning of bicycle and road facilities.
- Educate cyclists and motorists about bicycle routes, laws, and opportunities.
- Directly implement or encourage the establishment of a bike share program. This strategy could range from City ownership and administration of a bike share system to revisions to the Municipal Code to allow for bike share facilities owned by other private or public entities.

These strategies will be used to guide and develop projects that address the needs of the bicycling community in Milwaukie as well as those of bicyclists throughout the region. The projects resulting from these strategies fall into three categories: capital, operational, and maintenance, and policy. Capital strategies involve building physical infrastructure, operational and maintenance strategies aim to make existing infrastructure more usable, and policy-oriented strategies seek to modify public processes in order to more effectively support bicycling as a viable transportation mode. Key projects in each of these categories are described below.

Capital

These projects are typically large-scale infrastructure projects or projects that require some sort of physical infrastructure to be built. Capital projects also typically require ongoing maintenance that must be programmed into the existing maintenance schedule.

Key projects

17th Ave between Waverly Dr and Harrison St is a key bicycle connection between downtown Milwaukie and the Sellwood neighborhood in Portland. This connection will be improved by constructing bike lanes and/or a multi-use path. In addition, several potential ~~bike boulevard~~ neighborhood greenway corridors have been identified to enhance Milwaukie's bicycle network. The corridors were identified with respect to major bicycling destinations as well as their proximity to desired bicycle travel routes. The recommended corridors are shown in Figure 6-2-3a and described below:

- ~~17th Ave between Waverly Dr and Harrison St, a key bicycle connection between downtown Milwaukie and the Sellwood neighborhood in Portland. The connection should be improved by constructing bike lanes or a multiuse path.~~
- Monroe St between downtown Milwaukie and Linwood Ave
- Stanley Ave between Railroad Ave and Johnson Creek Blvd
- A corridor roughly following 40th Ave north from Monroe St and then splitting into two separate corridors at Harvey St. One ~~bike boulevard~~ neighborhood greenway would continue north on 40th Ave and follow Olsen St and 42nd Ave to connect with Johnson Creek Blvd. The second ~~bike boulevard~~ neighborhood greenway would follow Harvey St west from 40th Ave and follow Balfour St, 29th Ave, and Van Water St to connect with the Springwater Corridor. If 29th Ave is extended to the south, the ~~bike boulevard~~ neighborhood greenway should connect to the south as well (see Figure 8-3a, which shows the future extension of 29th Ave).
- A corridor following 19th Ave south from Eagle St to Sparrow St, then east on Sparrow St to River Rd. This corridor could be extended east on Sparrow St with construction of a multi-use path connecting to the Trolley Trail.

These ~~bike boulevards~~ neighborhood greenways should be targeted for Level 4 applications, including signage, pavement markings, intersection treatments, and traffic calming. Each corridor currently includes some boulevard components (e.g., speed humps). Due to limited street connectivity, Level 5 bike boulevard applications (traffic diversion) are not recommended for these corridors. To identify and develop additional site-specific treatments, the City should involve the bicycling community, neighborhood groups, and the Public Works Department. Further analysis and engineering work may also be necessary to determine the feasibility of some applications.

Operational and Maintenance

These projects involve actions that make existing infrastructure more useable. They include upkeep of existing facilities, educational campaigns, or distributing information about the use of the transportation network. They are typically smaller in scale and dollars than capital projects and are implemented more broadly than in one specific location.

Key projects

- Driver and cyclist education, including driver and biker awareness classes, "Share the Road" safety class, bike safety education for kids and adults.
- Encouraging cycling through community events to get new cyclists involved and interested in how to commute by bike.
- Consider applying rumble strips or other treatments to safely define bike lanes in places, such as Johnson Creek Blvd, where vehicles commonly cross into the bike lane.

Table 6-2 Bicycle Master Plan Projects

Map ID ³	Priority	Type	Project Name	Project Description	From	To	Cost(s) (\$1,000s ⁴)
High Priority Projects							
E	Low High	C	Intersection Improvements at Linwood Avenue and Monroe Street	Improve safety of crossing at intersection.	Location specific	Location specific	\$10
G	High	C	Hwy 224 Crossing Improvements at Oak and Washington Streets	Improve intersection crossing safety for cyclists at Washington Street and Oak Street.	Location specific	Location specific	\$10
J	Low High	C	Lake Road Bike Lanes	Fill in gaps in existing bicycle network with bike lanes (cost included with Lake Road road widening project).	Main St	Guilford Dr	NA \$3,400
N	High	C	Railroad Avenue Bike LanesCapacity Improvements	Bicycle aspect: Fill in gaps in existing bicycle network with bike lanes, cycle track, multi-use path, or other facilities (cost included with Railroad Avenue road widening project).	37 th Ave	Linwood Ave	NA \$4,800
U1	High	C	Monroe Street Bicycle BoulevardNeighborhood Greenway (downtown)	Designate as a Bicycle BoulevardNeighborhood Greenway and install bicyclebike boulevard improvements.	21 st Ave	Linwood AveHwy 224	\$300 \$85
U2	High	C	Monroe Street Neighborhood Greenway (central)	Designate as a Neighborhood Greenway and install bike boulevard improvements.	Hwy 224	42 nd Ave	\$300 \$80
U3	High	C	Monroe Street Neighborhood Greenway (east)	Designate as a Neighborhood Greenway and install bike boulevard improvements.	42 nd Ave	Linwood Ave	\$300 \$165
U4	High	C	29 th /Harvey/40 th Bicycle BoulevardNeighborhood Greenway	Designate as a Bicycle BoulevardNeighborhood Greenway and install bicyclebike boulevard improvements.	Springwater Trail	Monroe St	\$200 220
U5	Med High	C	Stanley Avenue Bicycle BoulevardNeighborhood Greenway (north)	Designate as a Bicycle BoulevardNeighborhood Greenway and install bicyclebike boulevard improvements.	Springwater Trail	Railroad AveKing Rd	\$300 135

³ See Figure 6-23a.⁴ Project costs are in 2007/2012 dollars. Future costs may be more due to inflation. Costing details can be found in the Technical Appendix. In the case of operational projects, estimated costs are for the entire 22-year planning period.

Map ID ³	Priority	Type	Project Name	Project Description	From	To	Cost(s) (\$1,000s ⁴)
<u>U6</u>	<u>High</u>	<u>C</u>	<u>Stanley Avenue Neighborhood Greenway (south)</u>	<u>Designate as a Neighborhood Greenway and install bicycleboulevard improvements.</u>	<u>King Rd</u>	<u>Railroad Ave</u>	\$300 <u>195</u>
Z	High	C	17 th Avenue Bikeway and Intersection Safety Improvements	Fill in sidewalk gaps on both sides; Fill in gaps in existing bicycle network with bike lanes; and/or provide multi-use path. Improve intersection safety at Milport Rd, McBrod Ave, Hwy 224, Lava Dr, and Hwy 99E, and eastbound connection at 17 th Ave/Hwy 99E. Improve intersection safety at 17 th Ave/Hwy 224.	Waverly Dr	Harrison St	\$135 <u>1,000</u>
<u>NAAC</u>	<u>LowHigh</u>	C	Kronberg Park Trail	Construct multi-modal trail along Kellogg Creek, connecting Kronberg Park to downtown Milwaukie. Construct multi-use path to connect bike-ped bridge to safe crossing of Hwy 99E.	<u>McLoughlin BlvdKellogg Creek Bridge</u>	<u>DowntownRiver Rd at Hwy 99E</u>	\$1,200 <u>300</u>
<u>AD</u>	<u>High</u>	<u>C</u>	<u>Kellogg Creek Bike-Ped Bridge</u>	Construct bike-ped overpass over Kellogg Creek in conjunction with light rail bridge.	<u>Lake Rd</u>	<u>Kronberg Park</u>	<u>\$2,500</u>
<u>AE</u>	<u>High</u>	<u>C</u>	<u>Kellogg Creek Dam Removal and Hwy 99E Underpass</u>	Replace Hwy 99E bridge over Kellogg Creek, remove dam, restore habitat; construct bike-ped undercrossing between downtown Milwaukie and Riverfront Park.	<u>Location specific</u>	<u>Location specific</u>	\$9,000 <u>9,900</u>
<u>AF</u>	<u>High</u>	<u>C</u>	<u>Intersection Improvements at McLoughlin Boulevard and 22nd Avenue</u>	Improve safety of Trolley Trail crossing at 22 nd Ave.	<u>Location specific</u>	<u>Location specific</u>	<u>\$200</u>
<u>AG</u>	<u>High</u>	<u>C</u>	<u>Improved Connection to Springwater Trail at 29th Avenue and Sherrett Street</u>	Pave the connection to Springwater Trail at 29 th Ave and Sherrett St. (TSAP)	<u>Location specific</u>	<u>Location specific</u>	<u>\$20</u>
<u>AH</u>	<u>High</u>	<u>C</u>	<u>Improved Connection from Springwater Trail to Pendleton Site (Ramps)</u>	Construct ramps to improve existing connection of Springwater Trail to Pendleton site at Clatsop St. (TSAP)	<u>Location specific</u>	<u>Location specific</u>	<u>\$630</u>
<u>AH</u>	<u>High</u>	<u>C</u>	<u>Improved Connection from Springwater Trail to Pendleton Site (Widened Undercrossing)</u>	Widen existing undercrossing to improve connection of Springwater Trail to Pendleton site at Clatsop St. (TSAP)	<u>Location specific</u>	<u>Location specific</u>	<u>\$100</u>
<u>NA</u>	<u>High</u>	<u>C</u>	<u>Bike Route Signage</u>	Install neighborhood bike route signage.	<u>Citywide</u>	<u>Citywide</u>	<u>\$150</u>

Map ID ³	Priority	Type	Project Name	Project Description	From	To	Cost(s) (\$1,000s ⁴)
P	Low	C	Linwood Avenue Bike Lanes (north)	Fill in gaps in existing bicycle network with bike lanes.	Queen Rd	Johnson Creek Blvd	\$1,692 1,900
Q	Low	C	Linwood Avenue Bike Lanes (south)	Fill in gaps in existing bicycle network with bike lanes.	Juniper St	Harmony Rd	\$296 320
R	Low	C	Rusk Road Bike Lanes	Fill in gaps in existing bicycle network with bike lanes.	Lake Rd	North Clackamas Park	\$936 1,000
T	Low	C	21st Avenue Bike Lanes	Fill in gaps in existing bicycle network with bike lanes.	Harrison St	Lake Rd	\$50
X	Low	C	Kellogg Creek Trail Improvements	Resurface trail and provide wayfinding signage to/from trail.	Milwaukie Riverfront	Treatment Plant	\$623 680
Y	Low	C	Trolley Trail Signage	Design and install Trolley Trail signage.	Milwaukie Riverfront	Southern city limits	\$54
AA	Low	C	Springwater Trail Ramp Improvement at McLoughlin Boulevard	Improve ramp at Springwater Trail and McLoughlin Blvd.	Location specific	Location specific	\$15
AH	Low	C	Improved Connection from Springwater Trail to Pendleton Site (Tunnel)	Construct tunnel under Springwater Trail to improve connection to Pendleton site at Clatsop St. (TSAP)	Location specific	Location specific	\$1,200
AO	Low	C	Bike-Ped Path on Sparrow Street	Establish a dedicated bicycle and pedestrian connection on Sparrow St, connecting River Rd to Trolley Trail	River Rd	Trolley Trail	\$350
AP	Low	C	Bike-Ped Overpass over McLoughlin Boulevard at River Road	Establish a dedicated bicycle and pedestrian connection across McLoughlin Blvd.	Kronberg Park	River Rd	\$2,500
AQ	Low	C	Crossing Improvements of McLoughlin Boulevard at Ochoco Street and Milport Road	Construct improvements at Ochoco St and Milport Rd to improve bike-ped crossing of McLoughlin Blvd (per ODOT, this will require full intersection improvements). (TSAP)	Location specific	Location specific	\$8,320
AR	Low	C	Bicycle-Pedestrian Connection between McLoughlin Boulevard and Stubb St	Establish bike-ped connection to McLoughlin Blvd sidewalk at west end of Stubb St. (TSAP)	Location specific	Location specific	\$20
N/A	Low	O	Milwaukie Bike Map	Produce a Milwaukie Bike Map.	Citywide	Citywide	\$50 60
N/A	Low	O	Police Enforcement on Drivers	Enforce laws related to bike lanes and bicycle safety.	Citywide	Citywide	\$10
N/A	Low	O	Bike Lane Striping	Re-stripe existing bike lanes and stripe bike lanes on streets where buses and bicyclists share the road.	Citywide	Citywide	\$20

Action Plan

The Bicycle Action Plan (Table 6-3) identifies the highest priority projects that are reasonably expected to be funded with local funds by 2030~~2035~~, which meets the requirements of the ~~updated~~ State's Transportation Planning Rule.⁵ The Action Plan project list is ~~the result of~~ based upon a 2007 citywide project ranking process. ~~In 2007, All~~ of the modal master plan projects were ranked by the TSP Advisory Committee after consideration of the Working Groups' priorities, other public support for the project, and how well each project implements the TSP goals and policies. ~~For the 2013 TSP Update, City staff reassessed the prioritization of all projects, incorporating public comments gathered at and around a public meeting in June 2013. Action Plan projects that were completed since 2007 were removed from the Action Plan and new projects identified as top priorities were added. The highest ranking bicycle projects that are reasonably expected to be funded (see Chapter 13) with local funds are shown in Table 6-3.~~

Table 6-3 Bicycle Action Plan

Map ID	Project Name	Project Description	From	To	Project Cost (\$1,000s)	Direct Funding or Grant Match
<u>Z</u>	17 th Avenue Bikeway and Intersection Safety Improvements	Fill in sidewalk gaps on both sides; Fill in gaps in existing bicycle network with bike lanes; and/or provide multi-use path. Improve intersection safety at Milport Rd, McBrod Ave, Hwy 224, Lava Dr, and Hwy 99E, and eastbound connection at 17 th Ave/Hwy 99E. Improve intersection safety at 17 th Ave/Hwy 224.	Waverly Dr	Harrison St	\$1,000	Match
<u>U1</u>	Monroe Street Bicycle Boulevard Neighborhood Greenway (downtown)	Designate as a Bicycle Boulevard Neighborhood Greenway and install bicycle/bike boulevard improvements.	21 st Ave	Linwood Ave/Hwy 224	\$330 \$85	Match
<u>U2</u>	Monroe Street Neighborhood Greenway (central)	Designate as a Neighborhood Greenway and install bike boulevard improvements.	Hwy 224	42 nd Ave	\$80	Match
<u>U3</u>	Monroe Street Neighborhood Greenway (east)	Designate as a Neighborhood Greenway and install bike boulevard improvements.	42 nd Ave	Linwood Ave	\$165	Match
<u>U5</u>	Stanley Avenue Neighborhood Greenway (north)	Designate as a Neighborhood Greenway and install bike boulevard improvements.	Springwater Trail	Railroad Ave/King Rd	\$330 \$135	Match
<u>U6</u>	Stanley Avenue Neighborhood Greenway (south)	Designate as a Neighborhood Greenway and install bike boulevard improvements.	King Rd	Railroad Ave	\$195	Match
<u>N</u>	Railroad Avenue Capacity Improvements	Bicycle aspect: Fill in gaps in existing bicycle network with bike lanes, cycle track, multi-use path, or other facilities.	37 th Ave	Linwood Ave	\$4,800	Match
<u>AD</u>	Kellogg Creek Bike-Ped Bridge	Construct bike-ped overpass over Kellogg Creek in conjunction with light rail bridge.	Lake Rd	Kronberg Park	\$2,500	Match

⁵ OAR Chapter 660, Department of Land Conservation and Development, Division 012, Transportation Planning, adopted on March 15, 2005, effective April 2005.

Table 7-1 Public Transit Master Plan Projects

Priority	Type	Project Name	Project Description	From	To	Cost(s) (\$1,000s ¹⁰)
High Priority Projects						
High	C	Downtown Transit Center Improvements	Construct new bus layover facility outside of the downtown core. Improve downtown bus stops and shelters consistent with level 3 features and including ample bike parking.	Location specific	Location specific	\$1,250
High	G	Railroad Avenue Transit Improvements	Improve Railroad Ave for bus service to extend to Clackamas Town Center and points east. Part of Railroad Ave widening project identified in Table 8-8.	42nd Ave	Eastern city limits	TBD
High	SE	Railroad Avenue Bus ServiceCapacity Improvements	Identified bus route need. Transit aspect: Provide bus service to extend to Clackamas Town Center and points east.	Harrison St	Eastern city limits	TBD
High	SE	Johnson Creek Blvd Bus Service	Identified bus route need.	45 th Ave	Eastern city limits	TBD
High	SE	Park-and-Ride Bus Service	Reroute bus line #70 to serve the Milwaukie Park-and-Ride on Main Street.	Location specific	Location specific	TBD
Low High	O	Milwaukie Transportation Management Association Program	Implement a transportation management association for <u>downtown</u> employers.	Milwaukie Town Center	Milwaukie Town Center	\$200
High	SE	<u>Downtown Loop Bus</u>	<u>Establish bus service from downtown to Tacoma and Park Ave Station.</u>	<u>Downtown</u>	<u>Tacoma Station, Park Ave Station</u>	<u>TBD</u>
High	SE	<u>Neighborhood Loop Bus</u>	<u>Establish bus service between eastern neighborhoods and downtown.</u>	<u>Eastern city limits</u>	<u>Downtown</u>	<u>TBD</u>
Medium Priority Projects						
Med	G	Park-and-Ride Facilities	Add new park-and-ride capacity at former Southgate theater site. Other potential new park-and-ride locations are: Kmart parking lot, SE corner of Linwood Ave and King Rd, SW corner of Park Ave and Hwy 99E, and 37th Ave behind Milwaukie Marketplace.	Location specific	Location specific	TBD
Med	C	Harrison Street Transit Shelter at 24 th Avenue	Install transit shelter at Harrison St and 24 th Avenue, as this stop currently meets minimum boarding requirements.	Location specific	Location specific	TBD \$5

¹⁰ Project costs are order of magnitude estimates and are in 2007-2013 dollars. Future costs may be more due to inflation. Costing details can be found in the Technical Appendix. In the case of operational projects, estimated costs are for the entire 22-year planning period.

Linwood Ave @ King Rd	D	47.5	0.83	E	70.3 61.1	0.98 0.94
Linwood Ave @ Harmony Rd	E	64.5	0.94	E	27.3 >80.0	0.73 1.55

Notes: A/A=major street LOS/minor street LOS

Signalized and all-way stop delay = average vehicle delay in seconds for entire intersection

Unsignalized delay = highest minor street approach delay

Intersections shown in **bold type** exceed jurisdictional standards or have V/C ratios >1.0

Intersections and corresponding LOS or V/C are illustrated in Figure 8-2

Milwaukie's needs, in terms of capacity-related improvements, are generally greater on along regionally significant routes such as Highway 99E (McLoughlin Blvd) and Highway 224 due to the role these routes play in carrying people to destinations throughout the region while passing through the city.

Two of the study intersections currently do not meet the City's Minimum Acceptable Measure of Effectiveness of LOS D: (1) Johnson Creek Blvd at 32nd Ave and (2) Linwood Ave at Harmony Rd.

- **Johnson Creek Blvd at 32nd Ave:** As part of the Portland-Milwaukie Light Rail project, a traffic signal and westbound left turn lane are planned to be constructed for this intersection by TriMet. Table 8-4 considers the intersection as-is and so represents the projected LOS if the planned improvements are NOT made.
- **Linwood Ave at Harmony Rd:** This intersection is within the jurisdiction of Clackamas County and is being addressed as part of the County's current TSP update project. Milwaukie City Council has indicated willingness to consider the current LOS E to be acceptable, given neighborhood concerns about the traffic implications of a major improvement to the intersection.

Figure 8-3 depicts the study area intersections with good, adequate, or poor operational performance during the PM peak hour in the year 2035. As can be seen in this figure, approximately half (10 of 24) of the study intersections will operate under poor conditions in 2035. The high growth in volumes along regional facilities such as McLoughlin Blvd and Highway 224 will not only bring those facilities close to capacity but will also create significant delay on side streets. The future operational analysis for each intersection is outlined in the following sections.

The introduction of the light rail line may affect operational performance at key intersections downtown. As a result, a future update to the TSP may need to include new intersections on the study list (e.g., Washington St and Main St, Washington St and 21st Ave).

Table 8-5 summarizes the existing and future needs that have been identified and lists potential strategies to address each need.

Table 8-5 Summary of Motor Vehicle System Gaps and Needs

<u>Reference ID</u>	<u>Location</u>	<u>Need</u>	<u>Potential Strategies to Address Need</u>				
			<u>Intersection Control</u>	<u>Lane Channelization</u>	<u>Alternative Route Improvements</u>	<u>Transportation System Management & Operations (TSMO)</u>	<u>Corridor Extension/ Widening</u>
		<u>Existing Intersection Needs</u>					
N1	Johnson Creek Blvd @ 32 nd Ave	Intersection Capacity	X	X	X	X	
N2	Linwood Ave @ Harmony Rd	Intersection Capacity		X	X	X	
N3	Highway 224 @ Lake Rd	Safety Improvements	X	X			
		<u>Future Intersection Needs</u>					
N4	Monroe St @ Linwood Ave	Intersection Capacity	X	X	X	X	
N5	Highway 224 @ Harrison St	Intersection Capacity		X	X	X	
N6	McLoughlin Blvd @ Harrison St	Intersection Capacity		X	X	X	
N7	McLoughlin Blvd @ Washington St	Intersection Capacity		X	X	X	
N8	McLoughlin Blvd @ River Rd	Intersection Capacity		X	X	X	
N9	Highway 224 @ 37 th Ave	Intersection Capacity		X	X	X	
N10	Highway 224 @ Freeman Way	Intersection Capacity		X	X	X	
N11	Johnson Creek Blvd @ Linwood Ave	Intersection Capacity		X	X	X	
N12	Linwood Ave @ King Rd	Intersection Capacity		X	X	X	
		<u>Future Corridor Needs</u>					
N13	Johnson Creek Blvd	Corridor Capacity			X	X	X
N14	Linwood Ave	Corridor Capacity			X	X	X
N15	McLoughlin Blvd (Hwy 99E)	Corridor Capacity			X	X	X
N16	Oatfield Rd	Corridor Capacity			X	X	X
		<u>Arterial/Collector Grid System Gaps</u>					
N17	Johnson Creek Boulevard (near 42 nd Avenue) to Lake Road (near Oatfield Road)	North-south arterial connection					X
N18	McLoughlin Blvd (Hwy 99E) to Linwood Ave (between Johnson Creek Boulevard and Harrison Street / King Road)	East-west collector connection					X

Table 8-46 Access Spacing Standards for City Street Facilities

Access Treatment	Functional Classification	Intersection				Desirable Signal Spacing ⁶³	Median Control
		Public Road		Private Drive			
		Type	Spacing	Type	Spacing		
Full control (freeway)	Arterials	Interchange	2-3 mi	None	NA	None	Full
Partial control	Arterials	At grade	530-1000 ft	Lt/Rt Turns	300 ft	1000 ft	Partial/None
Partial control	Collectors	At grade	300-600 ft	Lt/Rt Turns	150 ft	1,000 ft	None

Many existing roadways and driveways do not meet these standards because they were installed when traffic volumes were substantially lower and before the City established access spacing criteria. As traffic volumes increase, controlling access on arterial and collector roadways will be important to maintaining a safe and functioning street network.

Access Management for State Facilities

The Oregon Highway Plan (OHP) defines access spacing standards on state facilities for roadways such as McLoughlin Blvd and Highway 224. These standards are shown in Table 8-56. Preserving capacity on state facilities is especially important, since substandard performance due to a lack of capacity could force drivers to look for alternative routes along city streets.

Table 8-57 Access Spacing Standards for ODOT Facilities

Facility	Location	Highway Classification	National Highway System	Truck Route	Freight Route	Access Spacing Standard (ft)
{McLoughlin Blvd} (Highway 99E)	North city limits to Hwy 224	Statewide	Yes	Yes	Yes	990
	Hwy 224 to Scott St	District	No	Yes	No	500
	Scott St to River Rd	District (Special Transportation Area)*	No	Yes	No	175*
	River Rd to South city limits	District	No	Yes	No	500
ORE Highway 224	17 th Ave to Hwy 99E McLoughlin Blvd	District	No	No	Yes	500
	Hwy 99E McLoughlin Blvd to East city limits	Statewide (Expressway)	Yes	Yes	Yes	2640

*Minimum access management spacing for public road approaches is the existing city block spacing or the city block spacing as identified in the local comprehensive plan. Public road connections are preferred over private driveways, and in Special Transportation Areas, driveways are discouraged. However, where driveways are allowed and where land use patterns permit, the minimum access management spacing for driveways is 175 feet (55 meters) or mid-block if the current city block is less than 350 feet (110 meters).⁷⁴

⁶⁴ Generally, signals should be spaced to minimize delay and disruptions to through traffic. Signals may be spaced at intervals closer than those shown to optimize capacity and safety.

⁷⁵ Oregon Department of Transportation (ODOT), 1999 Oregon Highway Plan (OHP).

~~Insert Figure 8-3b – Functional Classification~~**Transportation Demand Management**

Transportation Demand Management (TDM) is a general term used to describe any action that removes single occupant vehicle trips from the roadway network during peak travel demand periods. As growth occurs, the number of vehicle trips and travel demand in the area will also increase. The ability to change a user's travel behavior and provide alternative mode choices will help to minimize the potential growth in trips.

Generally, TDM focuses on promoting alternative modes of travel for large employers as a way to reduce the vehicle miles traveled. This is due in part to the Employee Commute Options (ECO) rules that were passed by the Oregon Legislature in 1993 to help protect the health of Portland area residents from air pollution and to ensure that the area complied with the Federal Clean Air Act.⁹⁶

Currently, Metro supports an online tool, “Drive Less. *Connect*,” through the Regional Travel Options program that promotes a ride-matching service for area residents. It connects carpoolers and bike buddies. Since the launch in 2011, commuters avoided using approximately 50,000 gallons of gasoline and saved roughly \$308,000 collectively by joining carpools, biking, and riding transit.

Research has shown that a comprehensive set of complementary policies implemented over a large geographic area can have a measured effect on the number of vehicle miles traveled to/from that area.⁴⁰⁷ However, the same research indicates that for TDM measures to be effective, they should go beyond the low-cost, noncontroversial measures commonly used such as carpooling, establishing transportation coordinators or associations, and designation of priority parking spaces.

The more effective TDM measures include parking and congestion pricing, improved services for alternative modes of travel, and other market-based measures. However, TDM includes a wide variety of actions that are specifically tailored to the individual needs of an area. In general, TDM elements and programs have a potential trip reduction ranging between one and ten percent. To help implement TDM measures in the future, the City should consider setting TDM goals and policies for new development.

With an increase in the number of projected regional trips through the city, ~~regionwide~~regional TDM measures should help to reduce congestion and be a benefit to the City of Milwaukie and the region. The RTP includes TDM projects for the Milwaukie area in the ~~2030~~2035 financially constrained plan. These measures are identified in Table 8-678.

⁹⁷ Oregon Administrative Rules, Chapter 340, Division 30.

⁴⁰⁸ *The Potential for Land Use Demand Management Policies to Reduce Automobile Trips*, ODOT, by ECO Northwest, June 1992.

- **Johnson Creek Blvd/32nd Ave:** This intersection is in the city of Portland which has an operating standard of LOS D. PM peak signal warrants are currently met at this intersection. Installing a traffic signal and a ~~southbound~~westbound left-turn lane would improve the LOS at this intersection from F to ~~GD~~⁴³⁹. This improvement is consistent with TriMet plans as part of the PMLR project. As an alternative improvement, widening the existing bridge north of 32nd Ave would be necessary to provide a southbound left turn lane at this intersection and realign the intersection so that 32nd Ave would form a T-intersection with Johnson Creek Blvd. While this realignment would be more conducive to serve traffic demands along Johnson Creek Blvd, the primary travel corridor, bridge widening would significantly increase the project cost. A roundabout may be an alternative for this location.

While not studied, the two all-way stop controlled intersections east of 32nd Ave (36th and 42nd Aves) would likely require similar treatment (traffic signal with turn lanes) to meet operational standards. As with the 32nd Ave intersection, the scale of the improvements does not fit well in the residential neighborhood setting. Limiting the project to signals alone would not bring the intersection operations to the desired standard but would relieve traffic congestion.

The City of Portland has jurisdiction of Johnson Creek Blvd from Tacoma St to just west of 40th Ave, the section that includes the 32nd Ave intersection. Portland does not have plans to modify the bridge or the roadway. Clackamas County has jurisdiction north of Brookside Dr and continuing eastward. The County's TSP includes a project to widen the bridge over Johnson Creek. Milwaukie has jurisdiction over the intersection of Johnson Creek Blvd/42nd Ave, and will coordinate with Portland and Clackamas County if improvements are considered in this corridor. The project listed in the Master Plan is for signalization only at 42nd Ave.

- **Johnson Creek Blvd/Linwood Ave:** Adding eastbound, ~~and westbound,~~ and northbound right-turn lanes would improve the operations at this intersection from F to D. No additional improvement would be necessary for the operation of this intersection to meet City standards. Any intersection improvements should protect, if not improve, the Springwater Trail crossing through this intersection.
- **Linwood Ave/King Rd:** Aside from modifying phasing at this intersection or increasing street connectivity throughout the city with parallel routes to Linwood Ave and King Rd, there are no simple solutions to improve operation of this intersection.

McLoughlin Blvd (Highway 99E) Alternatives

While most intersections along ~~McLoughlin Blvd (Highway 99E)~~ do not meet future operating standards (V/C of 1.1 within the Town Center and to the north), the intersections of McLoughlin Blvd with Ochoco St and Milport St are near capacity but still operate within the ODOT operating standards. Because access is severely restricted from McLoughlin Blvd, the City and ODOT are investigating options for improving freight-related access and circulation for the North Industrial Area. Since both of these intersections are forecasted to meet standards in ~~2030~~2035, improvements will focus on access and circulation, not capacity improvements. These potential improvements are outlined in more detail in Chapter 9, Freight Element and Appendix C.

The intersection of McLoughlin Blvd and 17th Ave is primary portal to downtown Milwaukie from McLoughlin Blvd, especially for vehicles traveling to Milwaukie from the north. Improvements to

⁴³¹⁰ Signalization alone would improve the delay from ~~245~~approximately 135 seconds to ~~420~~110 seconds, and the intersection would still operate at LOS "F" in the TSP forecast year, ~~2030~~2035. Changes to the intersections in this corridor should be coordinated to ensure that they work together to improve safety and are designed for the posted speed (25 mph).

The intersection of McLoughlin Blvd and 17th Ave is primary portal to downtown Milwaukie from McLoughlin Blvd, especially for vehicles traveling to Milwaukie from the north. Improvements to this intersection would be difficult because of the intersection's geometry⁴⁴¹⁰ and phasing, and the proximity of Johnson Creek Blvd.

The phasing for eastbound and westbound traffic is currently split phase (one side operates independent of the other side). This phasing arrangement increases the amount of time required for vehicles traveling on Harrison St/17th Ave and also decreases the potential time for northbound and southbound vehicle movements.

Shifting traffic away from this intersection and can improve how it functions (its V/C ratio). One way to do this would be to restrict eastbound left turns from 17th Ave onto McLoughlin Blvd. Travelers needing to make this turn could instead be directed through the intersection, to turn left at the next intersection (Harrison St/Main St) and left on Scott St, and right onto northbound McLoughlin Blvd. Forcing this movement would allow for the split phasing at the intersection of Harrison St and McLoughlin Blvd to be removed and improve intersection operations. This option could redirect up to 20 drivers, who normally access McLoughlin Blvd via this intersection, into downtown Milwaukie during the p.m. PM peak hour.

The interchange of McLoughlin Blvd and Highway 224 currently connects southbound traffic on McLoughlin Blvd to eastbound on Highway 224 and westbound traffic on Highway 224 to northbound on McLoughlin Blvd. It does not provide for a direct connection of the northbound McLoughlin Blvd or eastbound Highway 224 to southbound McLoughlin Blvd traffic. The construction of a full interchange between McLoughlin Blvd and Highway 224 would shift vehicles to the interchange and improve operations at the intersection of McLoughlin Blvd and 17th Ave. This interchange, along with the rest of the McLoughlin Blvd/Highway 224 corridor between Tacoma St and 17th Ave should be studied as part of a Highway 224/99E/224 Refinement Plan to determine the most cost effective set of improvement options for the corridor and the City of Milwaukie.

Improvement of the intersection of 17th Ave and Harrison St could involve any number of options, including an increase in the intersection's capacity, improved local connectivity, and parallel routes to decrease demand at the intersection. The City should work with ODOT and Metro to create a solution to maintain operational levels at this intersection while minimizing possible negative impact of any improvements to the intersection. Any improvement recommended by the Highway 224/99E Refinement Plan should also include improvements to this intersection.

McLoughlin Blvd and River Rd

Without improvements, the intersections of McLoughlin Blvd with ~~22nd Ave~~ and River Rd would ~~both~~ operate at unacceptable levels during the PM peak hour in ~~2030~~2035 (V/C of 1.14 exceeds Town Center target of 1.1). A sketch-level operational analysis conducted for two potential improvement alternatives found that either would improve the intersection to the point of meeting operational mobility standards. The two alternatives are described below.

- **Alternative 1:** One possible improvement would leave the intersection of McLoughlin Blvd and 22nd Ave open in its current configuration. The intersection of McLoughlin Blvd and River Rd would require a second northbound left-turn lane and additional right-of-way to operate within ODOT standards (a V/C ratio of ~~0.99~~1.10). This option would ~~not~~ improve the operations of the intersection (~~the V/C ratio of 1.06~~) as much as with in a similar manner to

⁴⁴¹¹ 17th Ave is perpendicular to McLoughlin Blvd for only a short distance of less than 100 feet. After this distance, the road makes a 90-degree bend to the north and runs parallel to McLoughlin Blvd. This geometry is a result of the close proximity of Johnson Creek and the Willamette River.

point for long-term solutions for Highway 224. These alternatives are not all-inclusive and are meant to serve as an example of possible improvement options.

- **Alternative 1—Seven-Lane:** The Highway 224 seven-lane cross section alternative would involve increasing the number of through lanes for each direction from two to three, beginning north of Harrison St to south of Lake Rd. This option would require the acquisition of right-of-way, and increase the crossing distance at the intersections. It would solve the future operational deficiencies at the study intersections out to ~~2030~~2035.

While widening Highway 224 does allow for adequate intersection operations at study area intersections, it would create an even greater barrier to local connectivity. For this reason, some additional alternatives were evaluated to help reduce the potential side street delay and improve the potential east/west connectivity across Highway 224. In addition, capacity improvements such as widening facilities along the entire corridor is not consistent with Metro's regional prioritization of transportation improvements (which place more focus on intersection or system management improvements).

- **Alternative 2—Modified Split Diamond Interchange:** Construction of a modified split diamond interchange between Harrison St and 37th Ave would involve elevating Highway 224 from Harrison St to 37th Ave and constructing two tight urban interchanges (which require less right-of-way space than standard freeway interchanges), Monroe St and Oak St would pass under Highway 224 with a frontage road under Highway 224 to connect between Harrison St and 37th Ave. To improve connectivity within the city, this option includes the construction of an at-grade rail crossing along Monroe St and the extension of Monroe St to 32nd Ave. This configuration allows for much better intersection operations due to the removal of the Highway 224 traffic through the intersections. A planning-level operational analysis revealed that the intersections would operate within the state's mobility standards.
- **Alternative 3—Highway 224 Overpass/Underpass:** Grade separation of the highway would improve the localized intersection operations, but would divert traffic bound for or leaving Highway 224 to other streets. An overpass over Highway 224 could be placed at several locations, including Harrison St, Freeman Way and International Way/37th Ave. An option to the overpasses would be to construct Highway 224 below grade with City streets passing over the highway. This alternative improves intracity connectivity by removing the barrier effect caused by Highway 224.
- **Alternative 4—Highway 224 TSMO Improvements:** Improve arterial corridor operations by expanding traveler information and upgrading traffic signal equipment and timings. Install upgraded traffic signal controllers, establish communications to the central traffic signal system, provide arterial detection (including bicycle detection where appropriate) and routinely update signal timings. Provide real-time and forecasted traveler information on arterial roadways including current roadway conditions, congestion information, travel times, incident information, construction work zones, current weather conditions and other events that may affect traffic conditions. Also includes on-going maintenance and parts replacement (such as monitoring systems; providing power; and replacing cameras, loops, or other data collectors and devices).

Highway 224/99E Refinement Plan

The City and ODOT should complete a Refinement Plan to evaluate the problems in the Highway 224 and 99E corridor, and identify specific projects to solve them. This plan should focus on an influence area that includes McLoughlin Blvd from ~~Tacoma St~~River Rd to 17th AveRiver Rd, and Highway 224 from McLoughlin Blvd to Lake Rd. The Refinement Plan needs to address the projected intersection deficiencies and meet the goals of both ODOT and the City

Table 8-810 Auto-Street Network Master Plan Projects

Map ID ¹⁷	Priority	Type	Project Name	Project Description	From	To	Cost(s) \$1,000s ¹⁸
High Priority Projects							
C	High	C	Hwy 224 & Hwy 99E Refinement Plan	Conduct refinement study that focuses on minimizing barrier effect and improving auto and freight mobility.	Hwy 99E Project Limits: Tacoma St to 17th Ave River Rd	Hwy 224 Project Limits: Hwy 99E to Lake Rd Interchange	\$250 270
D	High	C	Hwy 224 Intersection Improvements at <u>Hwy 224 and 37th Avenue</u>	Consolidate the two northern legs of 37 th Ave and International Way into one leg at Hwy 224.	Location specific	Location specific	\$1,946 2,100
H	High	C	Linwood Avenue Capacity Improvements (north)	Widen to standard three lane cross section. Widen bridge over Johnson Creek.	Johnson Creek Blvd	King Rd	\$8,500 9,300
H	High	C	Linwood Avenue Capacity Improvements (south)	Widen to standard three lane cross section.	King Rd	Harmony Rd	\$11,400 12,500
P	High	C	Hwy 224 Intersection Improvements at <u>Hwy 224 and Oak Street</u>	Add left turn-lanes and protected signal phasing on Oak St approaches.	Location specific	Location specific	\$20
R	Low High	C	Stanley Avenue Connectivity at King Road	Enhance connection along Stanley Ave at King Rd.	Location specific	Location specific	\$53 60
S	Low High	C	Stanley Avenue Connectivity at Monroe Street	Enhance connection along Stanley Ave at Monroe St.	Location specific	Location specific	\$53 60
T	High	C	Railroad Crossing Safety and Quiet Zone Project	Construct railroad crossing safety improvements at Oak St, Harrison St, and 37th Ave.	Location specific	Location specific	\$285
<u>V</u>	High	<u>C</u>	<u>Intersection Improvements at McLoughlin Boulevard and 22nd Avenue</u>	<u>Improve safety of Trolley Trail crossing at 22nd Ave.</u>	<u>Location specific</u>	<u>Location specific</u>	<u>\$200</u>

¹⁷ See Figure 8-4.¹⁸ Project costs are in 2007/2012 dollars. Future costs may be more due to inflation. Costing details can be found in the Technical Appendix. In the case of operational projects, estimated costs are for the entire 22-year planning period.

Map ID ¹⁷	Priority	Type	Project Name	Project Description	From	To	Cost(\$) \$1,000s ¹⁸
Medium Priority Projects							
A	Med	C	McLoughlin Blvd Intersection Improvements at <u>McLoughlin Blvd and 17th Avenue</u>	Prohibit left turn movement from 17 th Ave to northbound McLoughlin Blvd and include in Hwy 224 & Hwy 99E Refinement Plan.	Location specific	Location specific	\$15 <u>20</u>
E	Med	C	Johnson Creek Blvd Intersection Improve-ments at <u>Johnson Creek Boulevard and Linwood Avenue</u>	Add eastbound right turn lane and westbound right turn lane.	Location specific	Location specific	\$803 <u>880</u>
F	Med	C	Harrison Street Intersection Improvements at <u>Harrison Street and Main Street</u>	Add westbound shared through/right turn lane or eastbound right turn lane.	Location specific	Location specific	\$34 <u>40</u>
G	Med	C	Intersection Improvements at <u>Linwood Avenue</u> and <u>King Road</u>	Implement protected/permissive left turn phasing for northbound and southbound approaches.	Location specific	Location specific	\$16 <u>20</u>
J	Med	C	McLoughlin Blvd Intersection Improvements at <u>McLoughlin Boulevard</u> and <u>River Road</u>	Consolidate a single access point for the area at Bluebird St with full intersection treatment and signalization or add second northbound left-turn lane at River Rd.	Location specific	Location specific	\$898 <u>980</u>
K	Med	C	Harrison Street Capacity Improvements	Widen to standard three lane cross section.	32nd St <u>Ave</u>	42nd St <u>Ave</u>	\$2,565 <u>2,800</u>
L	Med	C	Intersection Improvements at <u>Harrison Street</u> and Hwy 224	Add left turn-lanes and protected signal phasing on Harrison St approaches.	Location specific	Location specific	\$20
O	Med	C	Harrison Street and King Road Connection	Enhance connection between King Rd and Harrison St	King Rd	Harrison St	\$53 <u>60</u>

Action Plan

The ~~Auto-Street Network~~ Action Plan (Table 8-11) identifies the highest priority projects that ~~can~~ are reasonably be expected to be funded with ~~City~~ local funds by ~~2030~~ 2035, which meets the requirements of the ~~updated~~ State's Transportation Planning Rule.¹⁹ The Action Plan project list in ~~Table 8-9~~ is the result of a multimodal based upon a 2007 citywide project ranking process. In 2007, ~~All~~ of the modal master plan projects were ranked by the TSP Advisory Committee ~~with~~ after consideration of the Working Groups' priorities, other public support for the project, and ~~the~~ how well each project's implementation of the TSP goals and policies. For the 2013 TSP Update, City staff reassessed the prioritization of all projects, incorporating public comments gathered at and around a public meeting in June 2013. Action Plan projects that were completed since 2007 were removed from the Action Plan and new projects identified as top priorities were added.

Table 8-911 Auto-Street Network Action Plan

Map ID	Project Name	Project Description	From	To	Project Cost (\$1,000s)	Direct Funding or Grant Match
<u>P</u>	Hwy 224-Intersection Improvements at Hwy 224 and Oak Street	Add left turn-lanes and protected signal phasing on Oak St approaches.	Location specific	Location specific	\$20	Direct Match
<u>V</u>	Intersection Improvements at McLoughlin Boulevard and 22 nd Avenue	Improve safety of Trolley Trail crossing at 22 nd Ave.	Location specific	Location specific	\$200	Match
<u>C</u>	Hwy 224 & Hwy 99E Refinement Plan	Conduct refinement study that focuses on minimizing barrier effect and improving auto and freight mobility.	Hwy 99E Project Limits: Tacoma St to 17 th Ave River Rd	Hwy 224 Project Limits: Hwy 99E to Lake Rd Interchange	\$270	Match
	Railroad Avenue Capacity Improvements	Widen to standard three lane cross section.	37 th Ave	Linwood Ave		Match
	Railroad Crossing Safety and Quiet Zone Project	Construct railroad crossing safety improvements at Oak St, Harrison St, and 37 th Ave.	Location specific	Location specific		Direct

The completion of the Action Plan project list would improve transportation operations at several locations in the City of Milwaukie. The study intersections would operate as listed in Table 8-11 with the inclusion of Action Plan projects during the year 2035 PM peak hour. Approximately one third of study intersections (8 of 24 locations) would not meet performance standards with the inclusion of the Action Plan projects. Six of these intersections would be located on ODOT facilities (McLoughlin Blvd or Highway 224), while the remaining two locations would be on City of Milwaukie facilities (Linwood Ave). Additional refinement plans for McLoughlin Blvd and Highway 224 are needed to identify appropriate improvements and/or alternate mobility targets for traffic mobility along the corridors.

¹⁹ OAR Chapter 660, Department of Land Conservation and Development, Division 012, Transportation Planning, adopted on March 15, 2005, effective April 2005.

RECOMMENDATIONS

Strategies

To address the needs described above, the City will pursue the following strategies.

Accessibility

Several alternatives for improving truck access and local circulation in the North Milwaukie industrial area were examined during the preparation of this 2007 Transportation System Plan update. The purpose of this detailed analysis was to develop and analyze various alternatives to improve access and circulation for freight to and from this area. The work was conducted with an awareness of the potential impacts that the Portland-Milwaukie light rail project could have on access to the area. To help develop alternatives that would meet the access and circulation needs of this area, a separate sub-group of the Freight Working Group was established to help develop a problem statement, goal statement, and evaluation criteria to help guide the development and analysis of the various alternatives.

The preferred alternative among the participants of the sub-group was the construction of an overpass of Highway 99E at Ochoco Street with alternative access to Highway 99E via on/off lanes, and restricting access at Milport Rd to right-out movements, in concert with a "Tillamook" branch alignment of light rail. The detailed analysis for this process can be found in the Technical Appendix of this TSP. Because this access issue sits within the larger question of the best design of the Highway 99E/ Highway 224 corridor, the Freight Working Group recommended forwarding these findings to a future Highway 99E/Highway 224 Corridor Refinement Plan, rather than including a specific improvement or set of improvements in the TSP Master Plan.

Rail Crossings

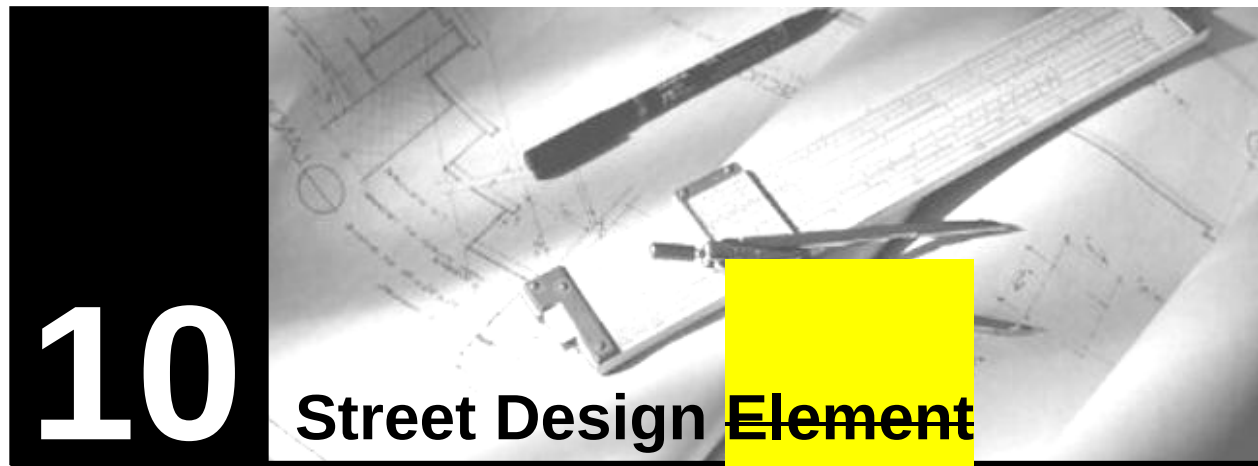
Improving the quality of the materials at at-grade crossings and pursuing the grade separation of key crossings, such as the UPRR and Harrison Street, and the UPRR and Harmony Rd crossings, are included in the master plan. The City should not support the introduction of any new at-grade heavy rail crossings in the city.

Truck Maneuverability

Intersections that are part of the local freight network or provide access to regional facilities ought to be designed to fully accommodate truck turning maneuvers. As part of new design guidelines, the City should adopt clear standards for adequate turning radii, lane widths and other geometric requirements of heavy vehicles for those streets that are local preferred freight routes or internal circulation routes within industrial areas. The Master Plan includes a project to correct two Mailwell Dr intersections that are currently problematic for truck maneuvers.

Neighborhood Livability

In support of minimizing residential impacts, the City actively encourages all heavy vehicles to use, to the extent practical, the identified local freight routes. Potential strategies to reduce freight traffic on local streets not identified as freight routes, such as traffic calming and diversion treatments, can be found in Chapter 11 (Neighborhood Traffic Management). The rail crossing improvements described above also address livability issues. The rail crossing safety improvements, which could allow the creation of a "Quiet Zone," included in the ~~Auto~~-Street Network Master Plan would also reduce the negative impacts of freight facilities on residential areas.



10

Street Design Element

This chapter describes the importance of street design, why it matters, and the street design options available in Milwaukie. This chapter also explores the benefits of a well-designed street and illustrates the relationship between street design, functional classification, and land use. Street design recommendations in this chapter are policy-based, not project-based. They direct the City to develop **implement** balanced and flexible street design standards that reflect the community's vision and include new and innovative design options.

GOALS AND POLICIES

Milwaukie has developed a set of goals to guide the development of its transportation system (see Chapter 2). Listed below are the specific TSP Goals that guide the City's policies on street design:

- **Goal 1 Livability** guides the City to design and construct transportation facilities in a manner that enhances livability.
- **Goal 2 Safety** guides the City to design safe transportation facilities.
- **Goal 4 Quality Design** guides the City to design streets to support their intended users and calls for the development **implementation** of street design standards that promote context-sensitive transportation facilities that fit the physical context, respond to environmental resources, and maintain safety and mobility.
- **Goal 6 Sustainability** guides the City to take the natural environment into account when planning and designing transportation facilities.

STREET DESIGN

What is Street Design

A street's design determines how it will look and function. How a street looks and functions is ultimately dependent upon which street elements are included, their dimensions, and how they relate to each other. Street elements may include, but are not limited to: travel lanes, parking lanes, bicycle lanes, green zones,¹ pedestrian facilities, traffic calming devices, and green street treatments. A street with two travel lanes and a gravel shoulder, for example, looks very different than one with four travel lanes and sidewalks. These two types of streets also function differently. The two-lane street likely has lower traffic volumes but, without pedestrian facilities, does not support safe pedestrian travel. The four-lane street likely has higher traffic volumes and, with sidewalks, supports safe pedestrian travel; however, without bike lanes, it probably does not support safe bicycle travel.

Since different streets serve different purposes, a functional classification system, which is a hierarchy of street designations, provides a framework for identifying which street elements to include in a street's design. A street's functional classification does not dictate which street elements to include. It does, however, provide a framework for determining the size and type of street elements to consider.

The City's functional classification system is used to balance the opposing needs for both mobility and access. These functions are opposing, since high speeds and continuous movement are desirable for mobility, while low speeds and traffic breaks are desirable for access to private property. Streets with a higher classification, such as arterial streets, emphasize a higher level of mobility for through-movement. They look and function very differently than streets with a lower classification, such as local streets, which emphasize the land access function. The different functional classifications are more fully discussed in Chapter 8.

Why Milwaukie Needs Has Street Design Options

The City's street design standards are contained in and/or referenced by the Milwaukie Municipal Code (MMC) which is the City's main regulatory document. As required by the MMC, street design standards are applied to new streets and to existing streets when development triggers the need for additional public street improvements. Since the majority of land in Milwaukie has already been developed, street design standards are most frequently applied to existing streets, many of which were only partially improved when constructed.² Many of the city's residential streets, for example, were constructed without bicycle, pedestrian, or stormwater facilities. Retrofitting an existing street with needed improvements is typically a much more complicated process, both in terms of design and construction, than constructing a new street.

The City has some flexibility when applying its existing design standards. However, that flexibility is limited to reducing the size of individual elements by a foot or two, which is often insufficient when retrofitting an existing street with new improvements. Moreover, the addition, alteration, or elimination of most street elements requires extensive review. When this type of review occurs, the City's existing design standards fail to provide decision makers with any design guidance. They identify the elements that should be included and their required and minimum allowed dimensions. However, they fail to They also identify which elements are most

¹ The green zone is the area between the curb and sidewalk and is commonly called a landscape strip.

² Partially improved streets are often referred to as incomplete streets.

important to include when right-of-way is insufficient or which elements are most appropriate to alter or eliminate in certain situations.

~~In addition to the lack of flexibility and design guidance, the~~ City's existing street design standards ~~don't~~ allow for more innovative types of designs, such as skinny streets, green streets, and alternative pedestrian facilities, all of which the community strongly supports. Green street development, in particular, has far reaching benefits for the region and the city. In addition to reducing stormwater runoff to streams and rivers, which improves water quality and wildlife habitat in general, green street development would help recharge the local aquifer, the city's main water supply.

For these reasons, the City ~~needs more~~**has** flexibility when applying existing street design standards, more design guidance, and more street design options. Three of the main reasons are summarized below.

- When making improvements to existing streets, existing street design standards often need to be modified to "fit" the existing street conditions.
- Even when a typical street design would work, more environmentally friendly designs and alternative pedestrian facilities may be appropriate.
- More design flexibility and options ~~would~~ enable the City to allow street improvements that respond to the character of the surrounding natural and built environments.

The City recognizes the diversity of public opinion and development patterns that exist within Milwaukie and acknowledges that street design should not be a "one size fits all" approach. ~~That is why the City should have~~**has** multiple street design options that support a street's intended users and its functional classification while also responding to adjacent land uses, neighborhood character, and environmental considerations.

Why Street Design Matters

Streets are the cornerstone of our transportation network. They are used by all modes of travel for a wide variety of commercial, recreational, and travel purposes. Since they traverse the entire city they also greatly influence neighborhood character. Street design matters because well-designed streets are a significant community asset. Poorly designed streets, on the other hand, can have a detrimental effect on commercial activities, recreational opportunities, personal mobility, emergency response, and property values. Since the design of a street is so closely tied to how it performs and how people experience the city, it is important for the City to carefully consider how it wants its streets to look and function and to design them accordingly.

Benefits of Good Street Design

The benefits of good street design occur on many levels. Benefits vary depending on the function of the street and the type of design implemented, but may include:

- Improved livability
- Increased safety for pedestrians, cyclists, drivers, and transit riders
- Increased pedestrian and bicycle activity
- Increased social and recreational opportunities
- Decreased environmental impacts through localized stormwater management or reduced stormwater runoff
- Enhanced air and water quality
- Street beautification
- Increased property values

Many of these benefits come from enhancements to pedestrian and green zones, which are the areas between the curb (or edge of roadway where no curb exists) and the outer edge of the right-of-way (see Figure 10-1). The green zone acts as a buffer between motor vehicle traffic and pedestrian traffic. This buffer area increases pedestrian comfort and safety, reduces the affect of road spray on pedestrians, allows for more separation between pedestrians and vehicle exhaust fumes, and when combined with mature street trees, can reduce vehicle speeds by giving the appearance of a narrower street. Reduced vehicle speeds are a safety benefit for all modes of travel, and an environment that supports walking creates opportunities for social contact, reduces motor vehicle reliance, and contributes to healthier and more active communities.

As its name implies, the green zone provides a space for street trees and other plantings that benefit the environment through improved air and water quality. When appropriately designed, green zone plantings can also manage local stormwater runoff, which reduces the transportation system's impact on local streams and rivers. The green zone also provides a space for placement of utilities, fire hydrants, and other street furniture, so that the sidewalk can remain uncluttered, allowing for unimpeded pedestrian passage. Additionally, this area can be used for the placement of transit shelters and benches, which increases the safety and comfort of transit users.

STREET DESIGN ELEMENTS

The purpose of this chapter is to create a **street design** policy framework that will guide **the development of design standards that better street design decisions** to meet the needs and values of the community. The first step in this process is to describe the different street elements, which are listed below. This is followed by a discussion about which elements are optional and which are required (see the Street Design Cross Sections section) and what alternative design options are available and preferred by the community (see the Street Design Alternatives section).

All streets are composed of a number of different elements; however, not all elements are included on all streets. A street's functional classification, adjacent land uses, and available right-of-way width all influence which elements are included. When a specific element is included, it is generally located in the same location on the street relative to other elements. However, an element's design, dimension, and relationship to adjacent elements can and should vary depending upon neighborhood character, traffic management needs, and/or social, cultural, or environmental factors.

The following is a description of the different street elements or zones that comprise most streets.

Development Zone

The development zone is not in, but adjoins, the public right-of-way. In commercial or industrial zones, a building face may clearly define the edge of the right-of-way. In residential zones, the outer edge of the right-of-way is often not clearly or accurately marked. Access to the development zone is almost always through the public right-of-way in the form of a driveway or sidewalk.

STREET DESIGN CROSS SECTIONS

Figure 10-1 contains cross sections for four of the City's street functional classifications. ~~Since this TSP update has identified a need for a more flexible approach to street design, this figure lays the foundation for more flexible design standards.~~ Street design elements marked with asterisks are optional when right-of-way width is insufficient to include all elements. Elements not marked with asterisks are required under all circumstances. The local and neighborhood street cross section, for example, indicates that, at a minimum, one travel lane and one pedestrian facility is required if there is truly insufficient right-of-way width to accommodate any other elements.

The local and neighborhood cross section also includes a skinny street option since a skinny street can contain all of the same elements as a local or neighborhood street. The difference between a skinny street and a local or neighborhood street is that a skinny street typically has narrower elements and/or overlapping parking and mixed travel zones.

Variations to these cross sections may also be welcomed and/or required by the City when:

- Environmentally beneficial or green street treatments are proposed or needed.
- A street is an identified bikeway or pedestrian walkway in the TSP master plan.
- Existing structures are unusually close to the right-of-way.

The cross sections in Figure 10-1 are shown without dimensions, as the intent is to provide a policy framework—not specific design details—for ~~the development of more flexible street design standards that will be adopted as a separate regulatory document at a later date. At that time the City will need to identify preferred and minimum dimensions for each street element. It will also be necessary for the City to develop a design prioritization approach that identifies which elements to reduce and/or eliminate when sufficient right-of-way width is not available.~~

STREET DESIGN ALTERNATIVES

Pedestrian Facilities

Three pedestrian facility design alternatives are shown in Table 10-1.

Table 10-1 Pedestrian Facility Design Alternatives

Design Alternative	Description
Vertical and Horizontal Separation	Separation from the street zone both vertically by a curb and horizontally by a green zone. This design alternative can incorporate green street treatments as outlined in the following section on green street design. 
Horizontal Separation	Separation from the street zone horizontally by a green zone or other horizontal element or barrier. The pedestrian zone is at the same grade as the street zone. This design alternative can incorporate green street treatments as outlined in the following section on green street design. 
Vertical Separation	Separation from the street zone vertically by a curb. The pedestrian zone is located "curb tight" against the street zone with no horizontal separation. Pedestrians could still be buffered from vehicular traffic in the street zone by on-street parking and/or bicycle lanes. If wide enough, this design alternative could incorporate tree wells for street trees. 

Source: DKS Associates

Vertical and horizontal separation is the community preferred pedestrian facility design in most situations and especially on streets with higher traffic volumes and speeds. Where traffic volumes and speeds are low, horizontal separation is preferred by the community over vertical separation, especially in neighborhoods that desire a less traditional sidewalk design. Two-sided pedestrian facilities are preferred, but one-sided pedestrian facilities are acceptable and even desirable under certain circumstances. When **developingutilizing** pedestrian facility design standards, it will be essential that the City identify the circumstances and the process by which one design alternative is chosen or required over another.

It is worth noting that the two preferred pedestrian facility designs include a green zone. In addition to horizontally separating pedestrians from the street zone, the pedestrian facilities that include a green zone are preferred because of the additional aesthetic and environmental benefits the green zone provides pedestrians and the street as a whole.

Green Streets

A traditional stormwater management system for a street uses a curb and gutter to capture and convey stormwater runoff to a catch basin and then a pipe. Piped runoff is then discharged offsite into a stream or river. A green street uses a different stormwater management approach. Instead of discharging stormwater offsite, a green street incorporates a stormwater management system into the right-of-way that allows most stormwater runoff to remain onsite,

where it is absorbed and cleansed through natural biological processes. Green street treatments capture and treat stormwater runoff locally, thereby protecting streams, groundwater, and wildlife habitat. Additionally, since Milwaukie's water supply comes from local wells, it is in the city's best interest to incorporate green zones and green street treatments into its streets as much as possible to protect and maintain the local groundwater supply—a vital city resource.

Most green street treatments have all of the benefits associated with the green zone but require regular maintenance to maintain their functionality and appearance. However, unlike traditional piped stormwater systems, maintenance usually does not require specialized equipment or training. Since some treatments can easily be incorporated into green zones, center medians, or the area usually occupied by parking lanes, streets can often be retrofitted with green street treatments without having to substantially alter any existing street elements or the right-of-way width.

Green street treatments are not dependent upon functional classification and can be incorporated into all street types. Table 10-2 below shows the different green street treatments and the zones in which they may be applicable.

Table 10-2 Green Street Design Treatments⁴

Treatment	Application	How it Works	Application Zone		
			Pedestrian	Green	Street
			■ Recommended □ Optional □ Not Recommended		
Rainwater Harvesting	Aboveground or subgrade containers that capture and reuse stormwater runoff for landscape irrigation.	Stormwater is conveyed to storage facilities during the wet season for use during the dry season.	■	■	□
Permeable Paving	Replacement of impermeable surfaces with permeable materials, such as permeable pavement, concrete, or paving blocks.	Permeable materials allow water infiltration through the surface to the subgrade.	■	■	■
Bio-retention (Raingardens)	Aboveground or subgrade containers that promote infiltration and evapotranspiration of stormwater.	Engineered or amended soils and vegetation are used to promote these processes.	□	■	□
Bio-swales	Subgrade channels with vegetation that convey and treat stormwater.	Vegetation is used to control flow velocities and settle pollutants.	□	■	□ ⁵

When **developing/utilizing** green street design standards, it will be essential that the City identify the circumstances under which green street treatments would be required or recommended.

⁴ The soils within an area where green street treatments could be implemented need to be tested to determine the rate of infiltration they can sustain. In addition to green street treatments, traditional stormwater management facilities need to be designed to control overflow if the capacities of the green street treatments are exceeded.

⁵ With the exception of medians.

Additionally, the City should ensure that green street treatments receive ongoing maintenance to preserve their functionality and appearance.

Skinny Streets

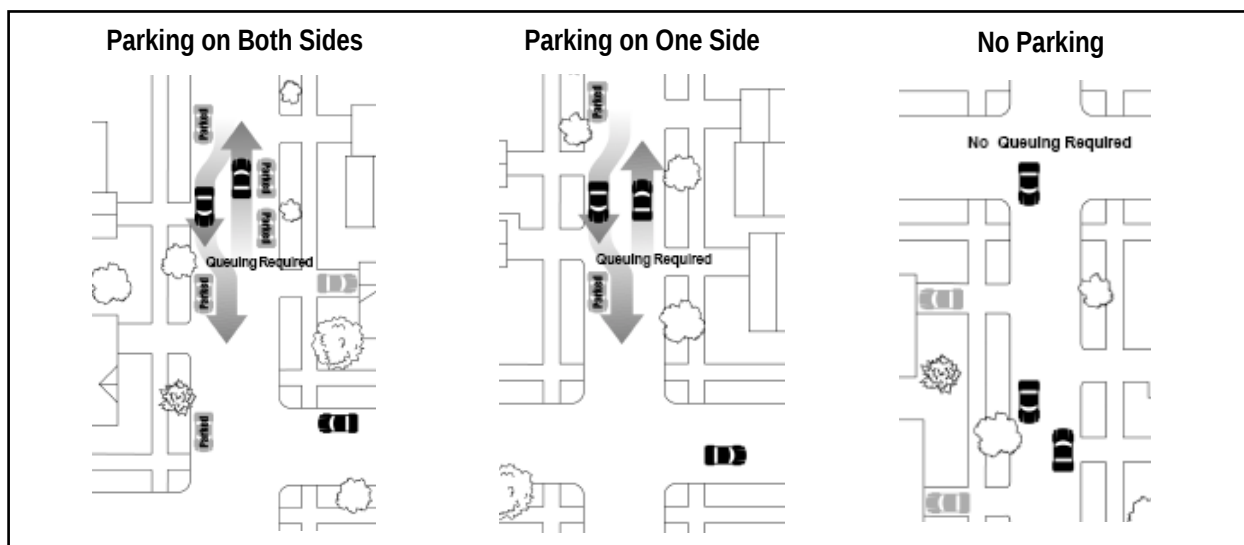
A skinny street is narrower than a normal street and is typically constructed when less paved surface area is desired or in areas with limited rights-of-way or physical constraints. Skinny street designs are typically only considered for streets that have lower traffic volumes and speeds, such as local or neighborhood streets, or in one-way couplet situations. Skinny streets function like regular streets and often have the following additional benefits:

- Slower vehicle speeds
- Enhanced bicycle and pedestrian safety due to slower vehicle speeds
- Reduced right-of-way impacts on adjacent properties
- Reduced stormwater runoff and other environmental impacts due to reduced impervious surface area

For emergency service personnel to be able to respond to emergencies in a timely manner, the Fire Code recommends that street zones have a minimum width of 20 feet to allow for passage and equipment set up.⁶ Solid waste collectors and delivery trucks have similar needs.

Figure 10-2 illustrates three possible skinny street design options. These design options include parking on both sides of the street, parking on one side of the street, or parking on neither side of the street. The design option with parking on both sides of the street requires the widest paved street zone, and the design option with no parking requires the narrowest paved street zone. The design options with parking have overlapping travel and parking lanes. As a result, queuing may be required, which is where one vehicle waits in an open parking area or driveway for the other vehicle to pass.

Figure 10-2 Skinny Street Design Options



When **developingutilizing** skinny street design standards, it will be essential that the City identify under what circumstances skinny street designs would be required or recommended.

⁶ *Neighborhood Street Design Guidelines, An Oregon Guide for Reducing Street Widths*. State of Oregon. November 2000.

RECOMMENDATIONS

In summary, the recommended actions and policy directions listed below call for the City to ~~develop~~utilize balanced and flexible street design standards that reflect the community's vision and that include new and innovative design options, including green streets, skinny streets, and alternative pedestrian facility designs.

Design Standards

Recommended Action

~~Develop~~Maintain a baseline cross section for each street functional classification (with preferred dimensions for all street elements) and a street design prioritization approach when the baseline elements do not fit. ~~Develop~~Maintain street design standards for green streets, skinny streets, and alternative pedestrian facilities and identify under what circumstances alternative designs would be required or recommended. ~~Develop~~Maintain a list of alternative materials, such as permeable pavers, and identify situations in which alternative materials would be suitable and desirable.

Policy Direction

- ~~Build more~~Maintain flexibility into street design standards to allow for local design preferences and to avoid costly and time-consuming variance process requirements.
- Balance citywide needs, local design preferences, and best practices when ~~developing~~utilizing street design standards.
- Provide for public involvement in the ~~development~~utilization of street design standards and during the design phase of street-related Capital Improvement Projects.
- Consider maintenance costs and issues when ~~developing~~utilizing design standards.
- ~~Develop~~Utilize design standards, including alternative designs that accommodate emergency response routes and needs.
- Require a minimum of one-sided pedestrian facilities on all streets.
- Require green zones and green street treatments where appropriate and practical.
- Maintain design consistency along a street's length where appropriate.

Green Zone and Green Street Plantings

Recommended Action

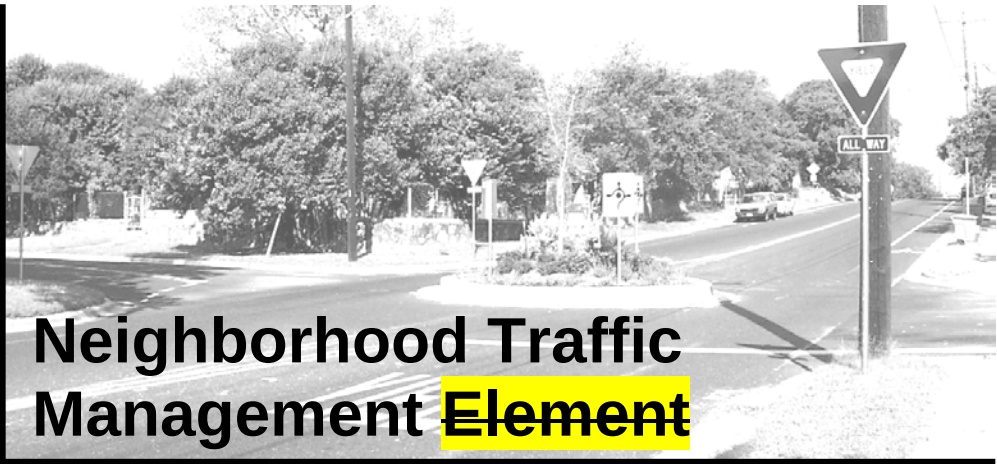
Develop a list of appropriate, low-maintenance plant species for use in green zones and green street treatments. Develop street tree replacement policies and regulations.

Policy Direction

- Ensure green zones and green street treatments are planted with appropriate, low-maintenance species.
- Preserve and expand the city's tree canopy

11

Neighborhood Traffic Management Element



Neighborhood traffic management is a term used to describe the many and varied traffic management approaches used to reduce the impacts of traffic volumes and speeds on residential neighborhoods and improve safety for pedestrians and bicyclists. This chapter describes the need for neighborhood traffic management, identifies tools that the City can use to slow and/or divert traffic, and outlines a process for implementing neighborhood traffic management measures. It is not the purpose of this chapter to identify streets in need of traffic management or to propose projects at specific locations.

GOALS AND POLICIES

Milwaukie has developed a set of goals to guide the development of its transportation system (see Chapter 2). Listed below are the specific TSP Goals that guide the City's policies on neighborhood traffic management:

- **Goal 1 Livability** guides the City to protect residential neighborhoods from excessive through traffic and travel speeds while providing reasonable access to and from residential areas.
- **Goal 2 Safety** guides the City to maintain a safe transportation system.
- **Goal 4 Quality Design** guides the City to design streets to support their intended users and respond to the surrounding natural and built environments.

The main benefits of effective neighborhood traffic management are improved livability and safety. Reduced vehicle speeds are a safety benefit for all modes of travel. Reduced cut-through traffic improves livability through the reduction of vehicular noise, pollutants, and traffic volumes. Additionally, streets that are used in ways for which they weren't designed lead to congestion and safety hazards.

NEEDS

Most of the land within Milwaukie consists of residential neighborhoods. The city, with just over 20,000 citizens, has a relatively small population compared to the surrounding Portland metropolitan area. Because of Milwaukie's proximity to the city of Portland, its employment centers, and the two major regional routes through the city (Highways 99E and 224), cut-through traffic and speeding is an ongoing concern for citizens. Cut-through traffic most often occurs when congestion occurs on regional routes and major streets and nonlocal traffic goes in search of less congested or more direct routes. Speeding can occur under many different

circumstances; however, the city has a number of streets that are relatively straight with few intersections or traffic control devices. These types of streets often invite speeding violations.

Neighborhood traffic management is a means to address the negative impacts of unchecked traffic speed and volume on neighborhood streets. Effective use of neighborhood traffic management can address neighborhood needs and concerns, including, but not limited to, the following:

- Speeding
- Cut-through traffic, especially by heavy freight trucks
- Bicycle and pedestrian safety
- Student safety around school zones

Student safety around school zones has been and continues to be a concern in Milwaukie neighborhoods. In 1995, the Milwaukie Traffic Safety Commission was charged with identifying and implementing school trip safety improvements in collaboration with schools, parent teacher organizations, neighborhood district associations, residents, and staff. The now defunct commission enacted many safety improvements, but not all recommended projects were pursued or implemented. This chapter does not recommend specific traffic management measures at specific locations, such as schools; however, Chapter 5 (Pedestrian Element) and Chapter 6 (Bicycle Element) recommend projects that directly address student safety.

TOOLS

There are many different measures available in the neighborhood traffic management "tool box," but not all of these measures are appropriate for all streets or in all situations. As with street design, traffic management measures need to take street functional classification, surrounding land uses, existing street design, emergency service provider access needs, and neighborhood preferences into account.

Table 11-1 groups neighborhood traffic management measures into four categories and shows the recommended application based on street functional classification. The four categories are as follows:

- Horizontal deflection (reduces traffic speeds)
- Vertical deflection (reduces traffic speeds)
- Volume control measures (reduces or diverts traffic volumes)
- Other measures

Most of the measures in the first three categories require physical changes to the street; whereas, most of the measures in the last category involve nonphysical changes such as signage, education, enforcement, speed monitoring trailers, and signal timing.

Additionally, state law provides the City authority to lower the speed limit of a residential street to five miles per hour below the the statutory speed required by the Oregon Department of Transportation. The statutory speed for local streets is 25 miles per hour; therefore, the City can lower the speed limit on local streets to 20 miles per hour. Three criteria must be met to establish the ordinance, in addition to posting new speed limit signs:

1. The street is located in a residential district.
2. The street has an average volume of fewer than 2,000 motor vehicles per day, more than 85 percent of which are traveling less than 30 miles per hour.
3. A traffic control device is used to indicate the presence of pedestrians and bicyclists.

IMPLEMENTATION

Successful neighborhood traffic management requires the following:

- A process that identifies, evaluates, and prioritizes traffic management needs
- Citizen involvement in traffic management measure selection
- Professional design that considers the safety of all users
- Funding and implementation of prioritized needs

The Milwaukie Public Safety Advisory Board Committee is responsible for administering the City's neighborhood traffic management program. This board committee meets once a month and has focused almost exclusively on addressed the enforcement and education aspects of neighborhood traffic management through both the Traffic Safety Program and the Walk Safely Milwaukie Program. Engineering staff will join assist this board committee to improve neighborhood traffic management program coordination and to provide the technical expertise needed for evaluation and implementation of deflection and volume control traffic management measures.

The neighborhood traffic management program relies on citizens to identify neighborhood traffic concerns. This identification process, by its very nature, is reactive. However, the funding level and evaluation process will be deliberate and methodical to allow for equitable and efficient use of limited funds. The City will endeavor to allocate money each year to undertake selected neighborhood traffic management measures (see Table 11-2). with the expectation that neighborhood district associations will provide matching funding for projects in their district.

RECOMMENDATIONS

Figure 11-1 outlines the proposed neighborhood traffic management process for the City of Milwaukie. As shown in this figure, there are multiple points in the process for public input and involvement and a feedback loop at the end to monitor the success of neighborhood traffic management measures that have been implemented.

It is recommended that the City annually fund the neighborhood traffic management program so that prioritized needs are implemented over time. The Neighborhood Traffic Management Action Plan (see Table 11-2) does not identify specific projects, but it does show the level of funding the City proposes aspires to commit to the neighborhood traffic management program for the duration of this plan. With regard to this funding, it is recommended that the City develop a process that ensures neighborhood traffic management funding is equitably distributed throughout the city.

Many of the policy recommendations contained in the Street Design chapter are applicable to neighborhood traffic management as well, the most relevant of which are summarized below.

- **Variety:** Allow for a wide variety of traffic management measures, as identified in this chapter's neighborhood traffic management "tool box."
- **Effectiveness:** Ensure that the chosen measure addresses the identified problem.
- **Landscaping:** Provide for landscaping wherever feasible and practicable.
- **Maintenance:** Consider maintenance needs and issues when designing traffic management measures and ensure long-term maintenance needs can be met.
- **Neighborhood Input:** Provide for neighborhood input when designing traffic management measures.

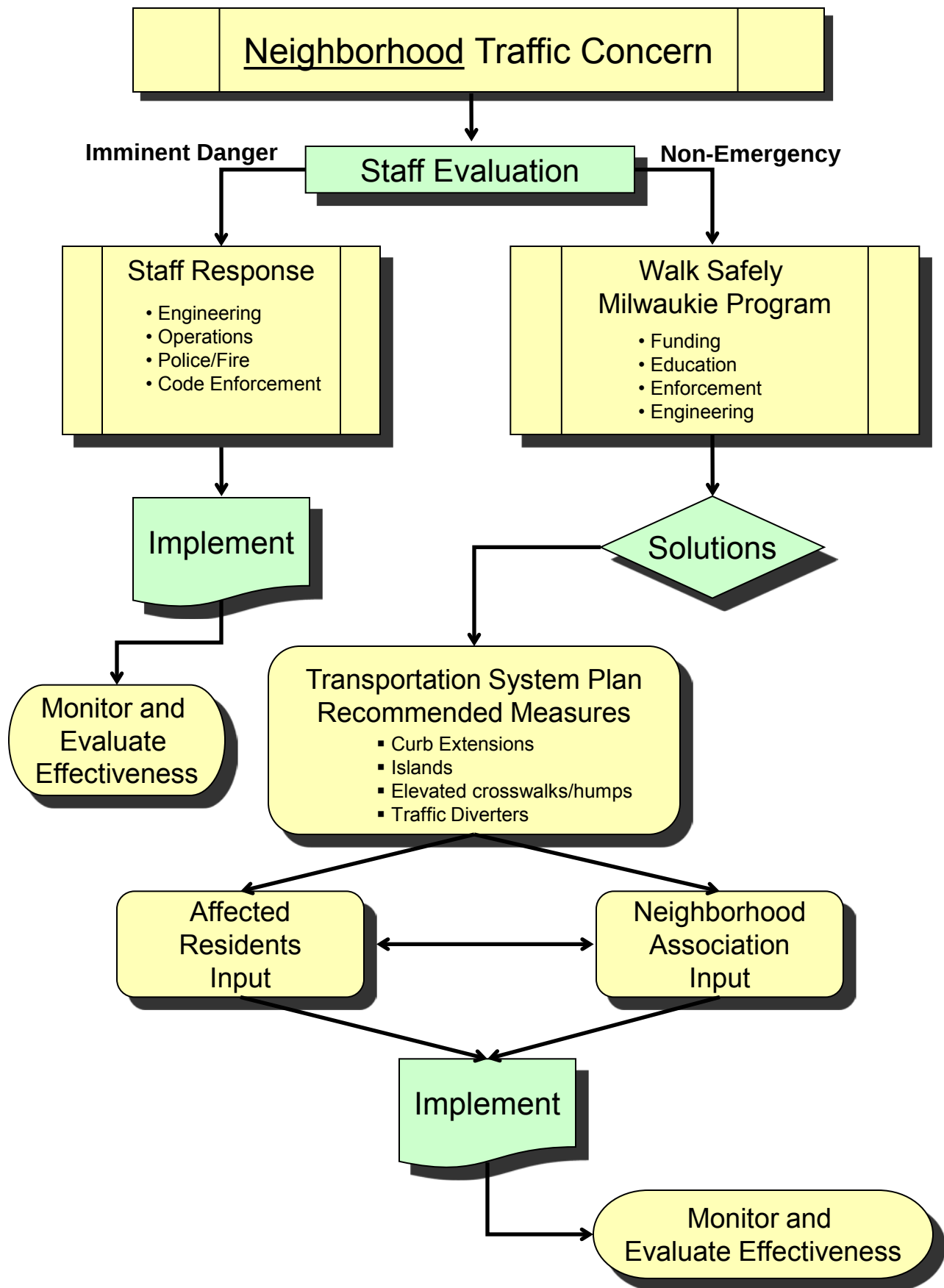


Table 11-2 Neighborhood Traffic Management Action Plan

Project Name	Project Description	From	To	Project Cost(s) (\$1,000s ¹)	Direct Funding or Grant Match
Neighborhood Pedestrian and Traffic Safety Program Walk Safely Milwaukie Program	Complete a few small traffic calming and pedestrian safety projects throughout the city each year.	Citywide	Citywide	\$300 (\$13 annually) ²	Direct (with NDA match)

¹ Project costs are in ~~2007~~2012 dollars. Future costs may be more due to inflation. Costing details can be found in the Technical Appendix.

² Historically, the Neighborhood Pedestrian and Traffic Safety Program received \$13,000 annually. In more recent years, the program name changed to Walk Safely Milwaukie and funding was raised to \$100,000 annually. Future funding for the program will be evaluated on a biennial basis with the budget.

- As long as spaces are available, off-street parking in downtown will be operated for the benefit of visitors, employees, and residents of downtown Milwaukie.
- Residential use of public off-street parking lots will be limited to nonbusiness hours (nights and weekends in some locations).
- Over time, public off-street parking will be transitioned to serve a higher mix of short-term visitor parking demand. Alternative mode options will be developed to support this transition.
- Except where Residential Parking Permit Zones are established, On-street parking outside of the downtown zones (i.e., in adjacent residential areas) will be unregulated but enforced by complaint only.
- If parking spillover from the downtown zones or from the future light rail station areas (at Tacoma St and Park Ave) results in inadequate parking availability outside of the downtown zones in the neighborhoods adjacent to these areas, the City will facilitate the establishment of Residential Permit Parking Permit Zone programs upon the request and support of the affected neighborhood(s).⁹⁸

The application of both the Guiding Principles (Management Principles) and the Operating Principles will result in a parking distribution pattern that places each parking user in the location that best supports the goals of the Downtown Plan. As illustrated in Figure 12-1, visitor parking is provided in the retail core, employees are directed to public lots, park-and-ride commuters are moved to the downtown fringe, and residential neighborhoods are protected from spillover effects.

The goal is a clear and predictable downtown parking system, as summarized in Table 12-21. The Guiding Principles account for each of the different types of parking users and the three types of parking stalls potentially available to them. Additionally, Transportation Demand Management Tools are diligently designed into the parking management system, varying slightly depending on the user type.

⁹⁸ See recommendation on Page 12-11 for detail.

Downtown Milwaukie

November 2013



Table 12-21 Parking Facility Priorities by Parking User Type

Parking User Types	Parking Facility Type			Transportation Demand Management Tools
	On-Street Parking	Off-Street Public Parking	Off-Street Private Parking	
Visitor/Customer/Client	Priority 2-hr and 4-hr parking	Allowed Subject to land and funding availability	Allowed On-site parking controlled by property owner	- Transit - Bike parking - Pedestrian access and amenities
Downtown Employees	Limited - When not needed for adjacent retail/restaurant - By permit only - Subject to 85% rule	Priority - Subject to land and funding availability - Priority to occupants of buildings existing in 2007 - Locations may shift over time as downtown develops - Subject to 85% rule	Allowed - On-site parking controlled by property owner - Shared parking arrangements encouraged - Private paid parking lots are allowed - New office/commercial development required to supply 0-2.5 stalls/1,000 sf¹⁰	- Transit passes - Bike parking - Encourage carpooling - Flexible parking permit options
Downtown Residents	Limited After hours only	Limited After hours only	Allowed - On-site parking controlled by property owner - Shared parking arrangements encouraged - Private paid parking lots are allowed - New residential development required to supply parking	- Transit passes - Bike parking Flexcar Car-share - More services in downtown, requiring fewer trips to destinations outside downtown
Park-and-Ride (to Portland)	Not Allowed	Limited - Restricted in the core downtown area - Conditionally allowed in a parking structure - Must support downtown activity over the long term	Allowed On-site parking controlled by property owner	Milwaukie Southgate Park-and-Ride (opened 2010)¹¹ to open 2008 Existing park-and-ride on Lake Rd Park-and-Ride (existing) - Improve E-W bus connections to downtown Milwaukie

¹⁰ Downtown parking required for new development will be analyzed and potentially revised during the 2013-14 Commercial Core Enhancement Project (CCEP) process "Moving Forward Milwaukie" project.

¹¹ The future of the Southgate Park-and-Ride is unclear once the Portland-Milwaukie Light Rail opens in 2015. The City prefers that the Southgate site transition into operation as a parking lot for local employees.

- Prohibit the creation of residential on-street parking permit programs within the Downtown Zones.

Adopt a framework for Residential Permit Zone(s) in neighborhoods adjacent to the Downtown Zones as an Action Plan to fully implement the Residential Parking Permit program by 2015.

As the new Portland-Milwaukie Light Rail (PMLR) begins to affect the City's downtown core and the neighborhoods near PMLR station areas at Tacoma St and Park Ave, grows and as land uses intensify, spillover effects and resultant conflicts for parking in adjacent residential neighborhoods adjacent to downtown will likely occur as downtown users begin to spill over in the residential areas. In response, it is recommended that the City develop and enact an action plan to fully implement the Residential Parking Permit Zone program facilitate Residential Parking Zones (RPZs) at the request of affected neighborhoods. The City should adopt an approval framework for establishing an RPZ. The following elements of such a framework are would comprise the action plan and provided as an initial basis to begin discussions with neighborhoods:

- Affected neighborhoods, coordinated through Neighborhood District Associations, petition the City for creation of a Residential Parking Zone (RPZ) by formally polling affected residents within a boundary.
- If 51 percent% of affected residents within a boundary poll in favor of an RPZ, the City could then move to implement a permit program.
- At that time, a formal RPZ boundary would be established and any parking between the hours of 8:00 a.m. and 5:00 p.m. (Monday – Friday) would be limited to two2 hours unless by displayed permit.
- Permits would only be available to residents with addresses in the RPZ zone and only to vehicle license numbers with addresses in the RPZ zone.
- A "guest pass" program would be established to accommodate visitors to residential properties within the zone.
- A system for determining cost to the City and the neighborhoods would be established prior to implementing the program. Costs will include creation and replacement of signage, permit creation and processing, and enforcement.

Strengthen the Move-to-Evade Enforcement Policy

The City should revise the "Move to Evade" ordinance (10.20.080) to allow the City's Parking Manager more latitude to cite people who move their cars between short term stalls during the day.

Operational Projects

Public Information and Marketing

- Create and continue to distribute information to the public and downtown employees about location, cost, availability, and the purpose of downtown parking lot locations, as well means for utilizing the permit program. This can be accomplished through such efforts as targeted outreach to downtown businesses, mailings, brochures, maps, and website development.

Oregon motor vehicle fuel taxes are collected as a fixed amount per gallon of gasoline sold. The Oregon gas tax is currently 30 cents per gallon, increased from 24 cents per gallon on January 1, 2011 and ~~has not increased since 1993~~. Because it is levied on a per gallon basis, the revenue does not vary with changes in gasoline prices. Since ~~there has been no increases do not keep up with inflation since 1993~~, the value of this revenue has eroded over time as maintenance materials and repair costs have increased. Additionally, increased fuel efficiency in new vehicles has further reduced the total dollars collected relative to total miles driven.

Oregon vehicle registration fees are collected as a fixed amount at the time a vehicle is registered with the Department of Motor Vehicles. Vehicle registration fees in Oregon have recently increased to about \$43 per year per vehicle from \$15 per vehicle per year to \$27 per vehicle per year for passenger cars, with similar increases for other vehicle types. Vehicle registration fees are not adjusted for inflation.

In fiscal year ~~2006/2007~~ 2011-12, the City received roughly ~~\$961,000~~ \$1,110,000 from the Oregon Highway Trust Fund. The City's projected share of this fund is approximately \$24.1 million over the next 22 years.

These funds are flexible and are available for either capital or maintenance projects.

Bike Path Fund

One percent (1.0%) of the payments from the Highway Trust Fund must be reserved for the maintenance and construction of bicycle facilities. In fiscal year ~~2006/2007~~ 2011-12, the City received ~~\$9,744~~ \$11,110 from this revenue source and expects to receive ~~\$245,000~~ \$271,600 over the next 22 years. Although these monies may only be spent on bicycle facilities, they are classified as unrestricted because they can contribute to capital or maintenance projects.

Street Surface Maintenance Fee

The street maintenance fee is paid by all City of Milwaukie utility customers (residents, businesses, government units, etc.) through their utility bill and is based on an estimate of daily trips generated by each customer. In fiscal year 2011-12, revenues were approximately \$609,000, and the fee is expected to generate \$13.4 million over the next 22 years. Monies collected from this fee are dedicated to the Street Surface Maintenance Program (SSMP) for roadway surface preservation, including maintenance, rehabilitation, and reconstruction. They cannot be used to construct capital projects.

Portland General Electric (PGE) Privilege Tax

Similar to franchise fees, the PGE Privilege Tax is paid by a utility (in this case PGE) in exchange for the use of the public right-of-way. The rate approved by the Milwaukie City Council is 1.5% of Milwaukie customers' bills. ~~Because PGE payments to the City are based on a calendar year, the City will receive one-half of~~ In fiscal year 2011-12, the estimated annual City received revenue of ~~\$300,000~~ \$324,400 from this source in the first program year. Revenues for the next 22 years are projected to total nearly ~~\$6.87~~ \$7 million. Monies collected from this tax are dedicated to the Street Surface Maintenance Program (SSMP) for roadway surface preservation, including maintenance, rehabilitation, and reconstruction. They cannot be used to construct capital projects.

Street Surface Maintenance Fee

~~The street maintenance fee is paid by all City of Milwaukie utility customers (residents, businesses, government units, etc.) through their utility bill and is based on an estimate of daily trips generated by each customer. Fiscal year 2007/2008 revenues are expected to be~~

~~\$600,000, and the fee is expected to generate \$13.4 million over the next 22 years. Monies collected from this fee are dedicated to roadway surface preservation, including maintenance, rehabilitation, and reconstruction. They cannot be used to construct capital projects.~~

Local Motor Vehicle Fuel Gas Tax

The City of Milwaukie local gas tax of two cents per gallon went into effect in April 2007. Revenue generated in fiscal year ~~2007/2008~~ 2011-12 ~~was is expected to be~~ approximately ~~\$125,000~~ 179,000. Over the next 22 years, the total revenue from this source ~~will is expected to be~~ approximately ~~\$2.84.4~~ million. Monies collected from this tax are dedicated to the Street Surface Maintenance Program (SSMP) for roadway surface preservation, including maintenance, rehabilitation, and reconstruction. They cannot be used to construct capital projects.

Projected Transportation Revenue

Table 13-1 summarizes the current, anticipated, and approved funding sources and the estimated revenue available to the City of Milwaukie for transportation-related projects over the next 22 years. Total projected revenues over the next 22 years are approximately \$1.2 million restricted for capital projects, \$25.5 million restricted for maintenance projects, and \$50.8 million for either capital or maintenance projects (unrestricted).

***Table 13-1 Projected Transportation Revenue
for the 22-Year Planning Period (in ~~2007~~ 2012 dollars)***

Funding Source	Capital	Unrestricted	Maintenance	TOTAL
SDC and FILOC ²	\$3,756,273	1,190,100		\$ 3,756,273 1,190,100
Franchise Fees		\$ 12,026,300	23,716,000	12,026,300 23,716,000
State Gas Tax		21,151,174	26,887,000	21,151,174 26,887,000
Bike Path Fund		213,642	271,600	213,642 271,600
Street Maintenance Fee			\$13,412,781	13,412,781 13,420,000
PGE Privilege Tax			6,765,000	7,744,000 6,765,000 7,744,000
Local Gas Tax			2,750,000	4,356,000 2,750,000 4,356,000
Other Revenue		\$60,000		\$60,000
Projected Revenue (2008 2014 to 2030 2035) ²³	\$3,756,273 1,190,100	\$33,391,116 50,934,600	\$22,927,781 25,520,000	\$60,075,170 77,644,700

The three line items in Table 13-1 that are specifically restricted to funding maintenance projects (street maintenance fee, PGE privilege tax, and local gas tax) have been designated by City

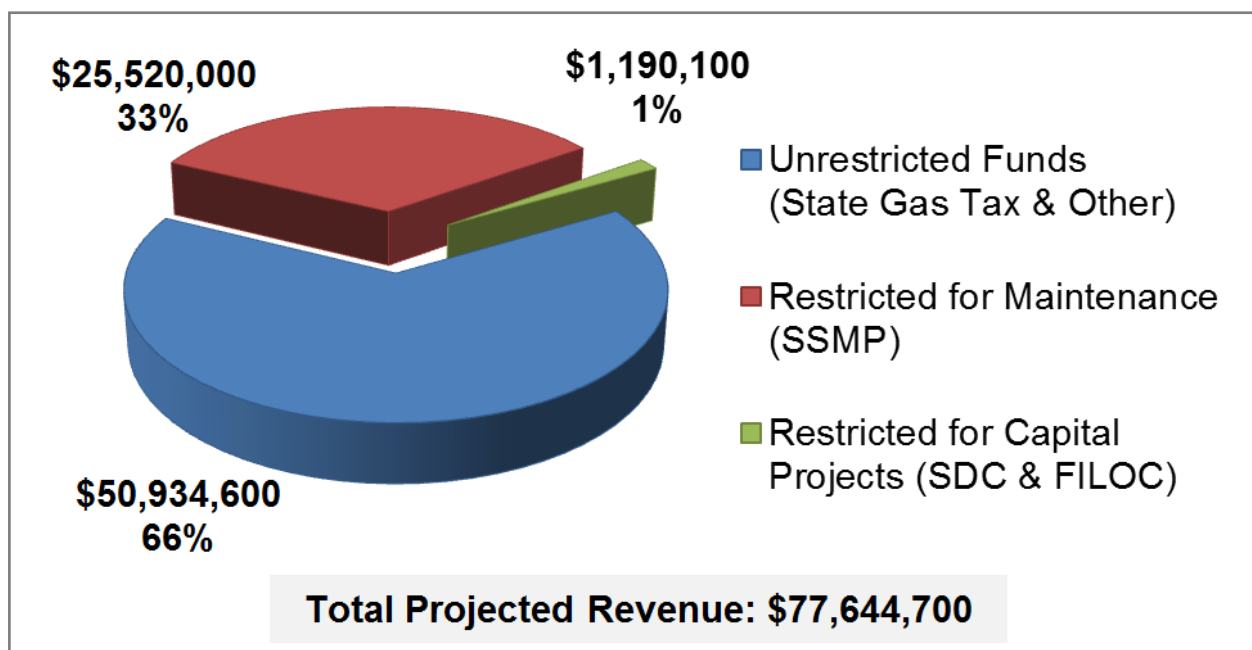
² Figure includes \$444,500 of FILOC money currently in City coffers (unspent to date) in addition to \$280,000 of projected FILOC revenue as estimated over the 22-year planning period.

²³ Projections for these funding sources were made based on the most recent year, with the exception of FILOC and SDC revenue. Because FILOC and SDC revenue is more variable, the projection is based on an average involving three years of actual revenues with an estimated small annual increase.

Council as the exclusive funding sources for the City's Street Surface Maintenance Program (SSMP). Projects eligible for SSMP funding include major rehabilitation and reconstruction of roadways; routine street maintenance (e.g., filling potholes or patching asphalt) must be funded from the "unrestricted" sources in Table 13-1.

Figure 13-1 provides a graphic depiction of the information presented in Table 13-1, showing the makeup of anticipated revenue for the 22-year planning period.

**Figure 13-1 Projected Transportation Revenue
for the 22-Year Planning Period (in 2012 dollars)**



CAPITAL AND MAINTENANCE PROJECTS

Based on current figures, projected costs for operations and maintenance over the 22-year planning period total approximately \$77.6 million. Table 13-2 provides a detailed breakdown of these costs. As noted in Table 13-1, estimated revenues for the same timeframe are also approximately \$77.6 million. However, some of those funds (approximately \$1.2 million) are specifically restricted to capital projects, so there is some projected shortfall for operations and maintenance over the 22-year planning period. Not only does this mean that additional funds will be necessary simply to cover projected operational and maintenance costs, but also that the unrestricted revenues will be effectively unavailable for capital projects.

A minimum of approximately \$272,000 must be spent on bicycle projects (capital or maintenance), or the City must forego expending the 1% of Highway Trust Fund revenues that are required to be devoted to bicycle facilities. But given that the regular sweeping of streets with bike lanes accounts for an annual Operations and Maintenance expenditure of approximately \$50,000 (or \$1.2 million over the 22-year planning period), this requirement is met 4 times over by that one operational project.

**Table 13-2 Operations, Maintenance, and Action Plan Costs
for the 22-Year Planning Period (in 2007/2012 dollars)**

Projects	Capital Cost*	Operations Cost*	TOTAL Cost*
Operations & Maintenance Projects			
Traditional Maintenance Activities (sweeping ⁴ , striping, signage, etc.)	\$ 8,456,250	22,170,000	\$ 8,456,250 22,170,000
Street Lighting	7,225,000	7,956,000	7,225,000 7,956,000
Overhead		4,510,000	4,510,000
Contributions to Support or Administration Indirect, Overhead, and Support to Administration	9,809,250	20,307,000	9,809,250 20,307,000
Street Surface Maintenance Program (SSMP)	22,927,781	25,520,000	22,927,781 25,520,000
Subtotal of Operations & Maintenance Projects	\$52,928,281	75,953,000	\$52,928,281 75,953,000
Action Plan Projects	\$5,428,000⁵	\$1,206,000⁶	\$6,634,000
Motor Vehicle ³ /Freight	\$2,668,000	\$ 375,000	\$ 3,043,000
Bicycle	640,000	1,100,000	1,740,000
Pedestrian	\$ 2,239,400		2,239,400
Transit	75,000		75,000
Subtotal	\$5,622,400	\$ 1,475,000	\$ 7,097,400
Total Approximate Costs (2008 to 2030/2014 to 2035)	\$5,622,400 \$5,428,000	\$54,403,281 77,159,000	\$60,025,681 82,587,000

*Approximate Costs

Table 13-2 demonstrates how the City can allocate available funds given their restrictions. Figure 13-2 provides a graphic depiction of the information presented in Table 13-2, showing the breakdown of anticipated costs for the 22-year planning period.

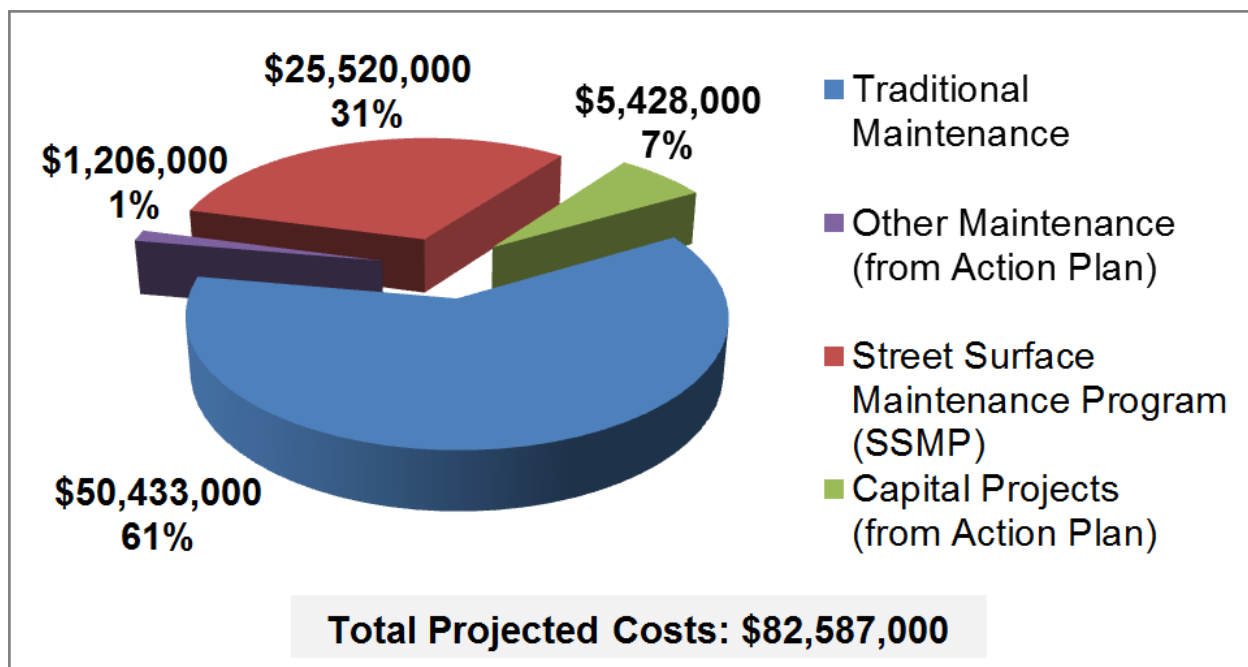
³ Includes funding for Neighborhood Traffic Management Action Plan.

⁴ Does not include sweeping on designated bike routes, which is reflected in the Action Plan portion of the table, below.

⁵ Costs include all projects on the Consolidated Action Plan (Table 13-3). An 11% local match share was used for estimation purposes, except for directly funded projects

⁶ Represents that portion of the cost of regular street sweeping that is spent on designated bike routes.

**Figure 13-2 Projected Transportation Costs
for the 22-Year Planning Period (in 2012 dollars)⁷**



With limited local funding and many needs, the City will continually strive to allocate investments for projects that best meet the goals as outlined in Chapter 2. The mode-specific Action Plans—in Chapters 5, 6, 7, 8, 9, 11, and 12, respectively—contain those projects that the City has prioritized most highly and intends to find funding for within the 22-year planning period.

Additionally, in the past 7 to 8 years, the City will pursue a strategy that has allocated transportation expenditures those funds not earmarked for maintenance (as shown in Table 13-2) in the following manner:

- Approximately 20% to local system maintenance
- Approximately 20% to capital and maintenance projects that can be completed with limited City funds
- Approximately 60% to leverage receipt of regional, State, and federal grants
- Approximately 95% to operations and maintenance
- Approximately 5% to capital projects

Leveraging limited local funds will allow the City to implement more projects sooner and to undertake larger projects than the City could otherwise afford.

The Prioritized Master Plan project list in Table 13-3 (at the end of this chapter) lists all of the proposed TSP projects that were generated through the TSP planning process. Additionally, it shows how well each project meets City goals and how the citizen working groups ranked them. The mode-specific Action Plans—in Chapters 5, 6, 7, 8, 9, 11, and 12, respectively—contain those projects that the City reasonably expects to fund that ranked high in the Prioritized Master Plan project list. The Action Plans include both capital projects and enhanced or new maintenance programs, such as increased bike lane sweeping.

⁷ Costs include all projects on the Consolidated Action Plan (Table 13-3). An 11% local match share was used for estimation purposes, except for directly funded projects

However, Given current revenue sources and projections and the ongoing need for maintenance of the existing transportation system, most of the remaining projects identified in the mode-specific Master Plan project lists are not expected to be funded with local funds within this plan's 22-year planning horizon. It is anticipated that almost all unrestricted revenues will be spent on operations and maintenance instead of capital projects. Figure 13-3 provides a graphic depiction of the anticipated commitment of future revenue to capital projects versus for operations and maintenance. Leveraging limited local funds to secure State and/or federal grants will be critical for enabling the City to implement more projects sooner and to undertake larger projects than the City could otherwise afford.

Existing operational and maintenance costs total approximately \$53 million. See Table 13-2 for a detailed breakdown of these costs. The second half of this table summarizes how the City plans to spend the remaining \$7 million of the projected \$60 million of total revenue, broken down by mode. More detailed project descriptions and costs can be found in the mode-specific Action Plans.

Table 13-2 demonstrates how the City can allocate available funds given their restrictions. The combined Action Plan project lists must include a minimum of \$3.75 million in capital projects because SDC and FLOC revenue cannot be used to fund maintenance projects. Table 13-2 shows that approximately \$5.6 million is earmarked for capital projects, which is almost \$2 million more than the minimum requirement. Additionally, the Bicycle Action Plan must either include a minimum of \$215,000 in bicycle projects (capital or maintenance), or forego expending the 1% of Highway Trust Fund revenues devoted to bicycle facilities. Nearly \$1.75 million is earmarked for bicycle facility improvements, which is over eight times the required minimum amount.

Figure 13-3 Projected Expenditures: Operations & Maintenance vs. Capital Projects for the 22-Year Planning Period (in 2012 dollars)

Project Cost Estimates

Order of magnitude cost estimates were developed for all projects identified in the modal master plans using general unit costs for transportation improvements. However, these estimates do not reflect unique project elements that can significantly add to project costs. More detailed project cost estimates will be developed as projects move closer to implementation, including detailed right-of-way requirements and costs associated with special designs. Because multiple modal improvements may occur on the same facility, costs were developed at a project level incorporating all modes, as appropriate. It may be desirable to break project mode elements out separately. However, in most cases, there are greater cost efficiencies in undertaking multiple modal improvements at the same time.

The Consolidated Action Plan project list (Table 13-3) presents the projects from all the mode-specific Action Plans in a single table. The Prioritized Master Plan project list in Table 13-4 (at the end of this chapter) lists all of the proposed TSP projects that have been generated through the TSP planning process, grouping them by priority (High, Medium, Low).

Table 13-3 Consolidated Action Plan Project List

<u>On Action Plan List from TSP Chapter(s)</u>	<u>Project Name</u>	<u>Project Description</u>	<u>From</u>	<u>To</u>	<u>Project Cost (\$1,000s)</u>	<u>Direct Funding or Grant Match</u>
<u>Pedestrian & Bicycle</u>	<u>17th Avenue Improvements</u>	Fill in sidewalk gaps on both sides of street; fill in gaps in existing bicycle network with bike lanes; and/or provide multi-use path. Improve intersections safety at Milport Rd, McBrod Ave, Hwy 224, Lava Dr, and Hwy 99E.	<u>Ochoco St</u>	<u>McLoughlin Blvd</u>	<u>\$1,000</u>	<u>Match</u>
<u>Pedestrian, Bicycle, Transit</u>	<u>Railroad Avenue Capacity Improvements</u>	Pedestrian aspect: Fill in sidewalk gaps on both sides of street or construct multi-use path on one side.	<u>37th Ave</u>	<u>Harmony Rd</u>	<u>\$1,800</u>	<u>Match</u>
		Bicycle aspect: Fill in gaps in existing bicycle network with bike lanes, cycle track, multi-use path, or other facilities.	<u>37th Ave</u>	<u>Linwood Ave</u>	<u>\$4,800</u>	<u>Match</u>
		Transit aspect: Provide bus service to extend to Clackamas Town Center and points east.	<u>Harrison St</u>	<u>Eastern city limits</u>	<u>TBD</u>	<u>Direct (TriMet)</u>
<u>Pedestrian & Bicycle</u>	<u>Monroe Street Neighborhood Greenway</u>	Pedestrian aspect: Fill in sidewalk gaps on both sides of street.	<u>42nd Ave</u>	<u>City limits</u>	<u>\$1,800</u>	<u>Match</u>
		Bicycle aspect (downtown): Designate as a Neighborhood Greenway and install bike boulevard improvements.	<u>21st Ave</u>	<u>Linwood Ave Hwy 224</u>	<u>\$330</u> <u>\$85</u>	<u>Match</u>
		Bicycle aspect (central): Designate as a Neighborhood Greenway and install bike boulevard improvements.	<u>Hwy 224</u>	<u>42nd Ave</u>	<u>\$80</u>	<u>Match</u>
		Bicycle aspect (east): Designate as a Neighborhood Greenway and install bike boulevard improvements.	<u>42nd Ave</u>	<u>Linwood Ave</u>	<u>\$165</u>	<u>Match</u>
<u>Pedestrian & Bicycle</u>	<u>Kellogg Creek Dam Removal and Hwy 99E Underpass</u>	Replace Hwy 99E bridge over Kellogg Creek, remove dam, restore habitat; construct bike-ped undercrossing between downtown Milwaukie and Riverfront Park.	<u>Location specific</u>	<u>Location specific</u>	<u>\$9,900</u>	<u>Match</u>
<u>Pedestrian & Street</u>	<u>Intersection Improvements at McLoughlin Boulevard and 22nd Avenue</u>	Improve safety of Trolley Trail crossing at 22 nd Ave.	<u>Location specific</u>	<u>Location specific</u>	<u>\$200</u>	<u>Direct</u>

<u>On Action Plan List from TSP Chapter(s)</u>	<u>Project Name</u>	<u>Project Description</u>	<u>From</u>	<u>To</u>	<u>Project Cost (\$1,000s)</u>	<u>Direct Funding or Grant Match</u>
<u>Pedestrian & Bicycle</u>	<u>Stanley Avenue Neighborhood Greenway (north)</u>	<u>Pedestrian aspect: Fill in sidewalk gaps on both sides of street.</u>	<u>Johnson Creek Blvd</u>	<u>Railroad Ave King Rd</u>	<u>\$4,700</u> <u>\$1,900</u>	<u>Match</u>
		<u>Bicycle aspect: Designate as a Neighborhood Greenway and install bike boulevard improvements.</u>	<u>Springwater Trail</u>	<u>Railroad Ave King Rd</u>	<u>\$330</u> <u>\$135</u>	<u>Match</u>
<u>Pedestrian & Bicycle</u>	<u>Stanley Avenue Neighborhood Greenway (south)</u>	<u>Pedestrian aspect: Fill in sidewalk gaps on both sides of street.</u>	<u>King Rd</u>	<u>Railroad Ave</u>	<u>\$2,800</u>	<u>Match</u>
		<u>Bicycle aspect: Designate as a Neighborhood Greenway and install bike boulevard improvements.</u>	<u>King Rd</u>	<u>Railroad Ave</u>	<u>\$195</u>	<u>Match</u>
<u>Pedestrian & Bicycle</u>	<u>Kronberg Park Trail</u>	<u>Construct multi-use path to connect bike-ped bridge to safe crossing of Hwy 99E</u>	<u>Kellogg Creek Bridge</u>	<u>River Rd at Hwy 99E</u>	<u>\$300</u>	<u>Direct</u>
<u>Pedestrian & Bicycle</u>	<u>Kellogg Creek Bike-Ped Bridge</u>	<u>Construct bike-ped overpass over Kellogg Creek in conjunction with light rail bridge.</u>	<u>Lake Rd</u>	<u>Kronberg Park</u>	<u>\$2,500</u>	<u>Match</u>
<u>Pedestrian & Street</u>	<u>Intersection Improvements at Hwy 224 Crossings</u>	<u>Pedestrian aspect: Improve pedestrian crossings at Freeman Way, 37th Ave, Oak St, Monroe St, and Harrison St</u>	<u>Location specific</u>	<u>Location specific</u>	<u>\$100</u> <u>(\$20 each)</u>	<u>Match</u>
		<u>Street aspect: Add left turn-lanes and protected signal phasing on Oak St approaches.</u>	<u>Location specific</u>	<u>Location specific</u>	<u>\$20</u>	<u>Match</u>
<u>Pedestrian</u>	<u>Adams Street Connector</u>	<u>Construct pedestrian- and bicycle-only facility on Adams St between 21st Ave and Main St</u>	<u>21st Ave</u>	<u>Main St</u>	<u>\$450</u>	<u>Match</u>
<u>Bicycle</u>	<u>29th/Harvey/40th Neighborhood Greenway</u>	<u>Bicycle aspect: Designate as a Neighborhood Greenway and install bicycle boulevard improvements.</u>	<u>Springwater Trail</u>	<u>Monroe St</u>	<u>\$220</u>	<u>Direct</u>
<u>Transit</u>	<u>Downtown Transit Center Improvements</u>	<u>Construct new bus layover facility outside of the downtown core.</u>	<u>Location specific</u>	<u>Location specific</u>	<u>\$1,250</u>	<u>Match</u>
<u>Transit</u>	<u>Downtown Loop Bus</u>	<u>Establish bus service from downtown to Tacoma and Park Ave Stations.</u>	<u>Downtown</u>	<u>Tacoma Station, Park Ave Station</u>	<u>TBD</u>	<u>Direct (TriMet)</u>
<u>Transit</u>	<u>Neighborhood Loop Bus</u>	<u>Establish bus service between eastern neighborhoods and downtown.</u>	<u>Eastern city limits</u>	<u>Downtown</u>	<u>TBD</u>	<u>Direct (TriMet)</u>

<u>On Action Plan List from TSP Chapter(s)</u>	<u>Project Name</u>	<u>Project Description</u>	<u>From</u>	<u>To</u>	<u>Project Cost (\$1,000s)</u>	<u>Direct Funding or Grant Match</u>
<u>Parking</u>	<u>Downtown Parking Management</u>	<u>Implement a downtown parking management system, including a dedicated parking manager.</u>	<u>Downtown</u>	<u>Downtown</u>	<u>\$40</u>	<u>Direct</u>
<u>Nhbrhd Traffic Mgmnt</u>	<u>Walk Safely Milwaukie Program</u>	<u>Complete a few small traffic calming and pedestrian safety projects throughout the city each year.</u>	<u>Citywide</u>	<u>Citywide</u>	<u>\$300 (\$13 annually)⁸</u>	<u>Direct (with NDA match)</u>
<u>Street & Freight</u>	<u>Hwy 224 & Hwy 99E Refinement Plan</u>	<u>Conduct refinement study that focuses on minimizing barrier effect and improving auto and freight mobility.</u>	<u>Hwy 99E Project Limits: Tacoma St to 17th AveRiver Rd</u>	<u>Hwy 224 Project Limits: Hwy 99E to Lake Rd Interchange</u>	<u>\$270</u>	<u>Match</u>
<u>Bicycle</u>	<u>Bike Lane Maintenance</u>	<u>Sweep bike lanes to remove debris.</u>	<u>Citywide</u>	<u>Citywide</u>	<u>\$1,200</u>	<u>Direct</u>

POTENTIAL NEW FUNDING SOURCES

The Master Plan project lists in Chapters 5-9, 11, and 12 include a large number of unfunded, but nonetheless high-priority, projects and programs. Absent an increase in funding, the City will be unable to address operational deficiencies identified in Chapter 4. The City may wish to consider new revenue sources to ensure that funding is available for proposed capital projects and other transportation programs.

In addition, the City ~~expects to contribute~~ is contributing \$5 million in match to the regional share of the Portland-Milwaukie Light Rail project. ~~While the exact allocation of the regional share is still to be determined, the City of Milwaukie's contribution is likely to be around \$5 million.~~ The vast majority of the City's transportation revenues are restricted in ways that ~~would do~~ not allow the City to expend them on a light rail "match." SDC revenues, the only significant transportation revenue stream that could contribute to the project, are not projected to be adequate to cover the local match over the next 22 years, ~~let alone in the next 5-8 years, the expected time frame in which the City would contribute to the light rail project.~~

~~The City's approach to planning for any local financial contribution to light rail parallels the region's: the draft financing plan of the Regional Transportation Plan (which is being updated simultaneously with this TSP) includes the sources of local match for upcoming major transit projects separately from the traditional revenue streams. These major capital projects are not included within the baseline funding commitments and are included as conditional upon the identification of additional revenues. Similarly, the Milwaukie share of the Portland-Milwaukie light rail project is not included on the Public Transit Action Plan list because it will require revenues above and beyond those included in the baseline revenue projection.~~

Many cities use some combination of the following funding sources to supplement their capital and/or maintenance budgets.

⁸ Historically, the Neighborhood Pedestrian and Traffic Safety Program received \$13,000 annually. In more recent years, the program name changed to Walk Safely Milwaukie and funding was raised to \$100,000 annually. Future funding for the program will be evaluated on a biennial basis with the budget.

TSP IMPLEMENTATION AND UPDATE STEPS

The primary function of the TSP is to provide guidance for long-range policy and investment decisions about needed improvements to the transportation system over the next 22 years. The Consolidated Action Plan in Table 13-3 provides a list of the highest priority projects for the community. This list is utilized to build the "Transportation Priority Project—Unfunded" section of the City's Capital Improvement Plan (CIP). The CIP is a list of projects for the City's water, wastewater, stormwater, and transportation systems that are scheduled to be funded in the short term. As funding becomes available, projects are moved from the unfunded section of the CIP to the section recommended for funding. Projects in the CIP section recommended for funding are reviewed for funding every 2 years through the City's budgeting process. In essence, the CIP is the primary implementation mechanism for TSP projects.

This document requires a series of implementing and on-going update steps to retain its usefulness over the next 22 years. Such steps include refining and updating the affected design standards for streets and trails, implementing the suggested development code and Comprehensive Plan text changes, and periodically updating and reviewing traffic forecasts and project priorities. The State suggests that cities should update local TSPs every ~~five~~5 years to keep current on the latest land development trends, capital project funding conditions, and priorities of the community. These activities would typically be funded through a combination of grants, engineering funds, and planning funds, and are not, therefore, included in the financial projections for the modal Action Plans.

Table 13-34 Prioritized Master Plan Project List

Project Name	TSP Chapter	Project Description	From	To	Estimated Cost (\$1,000s) ⁹	Priority Ranking ¹⁰	Is Project Funded in Action Plan? ¹¹	Project Type
HIGH PRIORITY PROJECTS								
17 th Avenue Sidewalks Improvements	Pedestrian & Bicycle	Fill in sidewalk gaps on both sides of street; fill in gaps in existing bicycle network with bike lanes; and/or provide multi-use path, and improve intersections safety at Milport Rd, McBrod Ave, Hwy 224, Lava Dr, and Hwy 99E.	Ochoco St	McLoughlin Blvd	\$920 <u>1,000</u>	High	Yes	Capital
17 th Avenue Bikeway and Intersection Safety Improvements	Bicycle	Fill in gaps in existing bicycle network with bike lanes or multiuse path. Improve intersection safety and eastbound connection at 17 th Ave/Hwy 99E. Improve intersection safety at 17 th Ave/Hwy 224.	Waverly Dr	Harrison St	\$135	High	Yes	Capital
Railroad Avenue Capacity Improvements Sidewalks	Pedestrian & Transit	<u>Pedestrian aspect:</u> Fill in sidewalk gaps on both sides of street or construct multi-use path on one side.	37 th Ave	Harmony Rd	\$1,625 <u>1,800</u>	High	Yes	Capital
Railroad Avenue Bike Lanes	Bicycle	<u>Bicycle aspect:</u> Fill in gaps in existing bicycle network with bike lanes, cycle track, multi-use path, or other facilities.	37 th Ave	Linwood Ave	\$4,364 <u>4,800</u>	High	NoYes	Capital
	Transit	<u>Transit aspect:</u> Provide bus service to extend to Clackamas Town Center and points east.	Harrison St	Eastern city limits	TBD	High	Yes	Service Enhancements
Monroe Street Bicycle Boulevard Neighborhood Greenway (downtown)	Bicycle	Designate as a Bicycle Boulevard Neighborhood Greenway and install bicycle boulevard improvements.	21 st Ave	Linwood Ave Hwy 224	\$300 <u>330</u> <u>\$85</u>	High	Yes	Capital
Monroe Street Neighborhood Greenway (central)	Bicycle	Designate as a Neighborhood Greenway and install bike boulevard improvements.	Hwy 224	42 nd Ave	\$80	High	Yes	Capital
Monroe Street Neighborhood Greenway (east)	Bicycle	Designate as a Neighborhood Greenway and install bike boulevard improvements.	42 nd Ave	Linwood Ave	\$165	High	Yes	Capital
Monroe Street Sidewalks	Pedestrian	Fill in sidewalk gaps on both sides of street.	42 nd Ave	City limits	\$1,631 <u>1,800</u>	High	Yes	Capital
Stanley Avenue Bicycle Boulevard Neighborhood Greenway (north)	Bicycle & Pedestrian	<u>Bicycle aspect:</u> Designate as a Bicycle Boulevard Neighborhood Greenway and install bicycle boulevard improvements. <u>Pedestrian aspect:</u> Fill in sidewalk gaps on both sides of street	Springwater Trail	Railroad Ave King Rd	\$300 <u>330</u> <u>\$135</u>	MediumHigh	NoYes	Capital
Stanley Avenue Neighborhood Greenway (south)	Bicycle & Pedestrian	<u>Bicycle aspect:</u> Designate as a Neighborhood Greenway and install bike boulevard improvements. <u>Pedestrian aspect:</u> Fill in sidewalk gaps on both sides of street	King Rd	Railroad Ave	\$195	High	Yes	Capital
Stanley Avenue Sidewalks	Pedestrian	Fill in sidewalk gaps on both sides of street.	Johnson Creek Blvd	Railroad Ave	\$4,304 <u>4,700</u>	High	NoYes	Capital

⁹ In the case of operational projects, estimated costs are for entire 22-year planning period. Costs are order of magnitude estimates presented in 2013 dollars.

¹⁰ Projects are ranked as either high, medium, or low. -They are in no particular order within their ranking.

¹¹ Funded projects are listed on one of the mode-specific Action Plans in the TSP and are expected to be funded within the 22-year planning period through either direct or leveraged City funding.

Project Name	TSP Chapter	Project Description	From	To	Estimated Cost (\$1,000s) ⁹	Priority Ranking ¹⁰	Is Project Funded in Action Plan? ¹¹	Project Type
Downtown Transit Center Improvements	Transit	Construct new bus layover facility outside of the downtown core. Improve downtown bus stops and shelters consistent with level 3 features and including ample bike parking.	Location specific	Location specific	\$1,250	High	Yes	Capital
Kellogg Creek Dam Removal and Hwy 99E Underpass	Pedestrian & Bicycle	Replace Hwy 99E bridge over Kellogg Creek, remove dam, restore habitat; construct <u>bike-pedestrian</u> undercrossing between downtown Milwaukie and Riverfront Park.	Site Specific	Site Specific	\$9,000 <u>12,400</u> <u>9,900</u>	High	Yes	Capital
29 th /Harvey/40 th Bicycle Boulevard/Neighborhood Greenway	Bicycle	Designate as a Bicycle Boulevard/Neighborhood Greenway and install bicycle/bike boulevard improvements.	Springwater Trail	Monroe St	\$200 <u>220</u>	High	Yes	Capital
Bike Lane Maintenance	Bicycle	Sweep bike lanes to remove debris.	Citywide	Citywide	\$1,100 <u>1,200</u>	High	Yes	Operational
Bike Route Signage	Bicycle	Install neighborhood bike route signage.	Citywide	Citywide	\$150	High	Yes	Operational
Hwy 224 Intersection Improvements at Hwy 224 and Oak Street	Automobile Street	Add left turn-lanes and protected signal phasing on Oak Street approaches.	Location specific	Location specific	\$20	High	Yes	Capital
Neighborhood Pedestrian and Traffic Safety Program Walk Safely Milwaukie Program	Nbrhd Traffic Management	Complete a few small traffic calming and pedestrian safety projects throughout the city each year.	Citywide	Citywide	\$300 (\$13 annually)	High	Yes	Capital
Hwy 224 & Hwy 99E Refinement Plan	Automobile Street & Freight	Conduct refinement study that focuses on minimizing barrier effect and improving auto and freight mobility.	Hwy 99E Project Limits: Tacoma St to <u>17th Ave</u> <u>Rd</u>	Hwy 224 Project Limits: Hwy 99E to Lake Rd Interchange	\$250 <u>270</u>	High	Yes	Capital
Railroad Crossing Safety and Quiet Zone Project	Automobile & Pedestrian	Construct railroad crossing safety improvements at Oak Street, Harrison Street, and 37 th Avenue.	Location specific	Location specific	\$285	High	Yes	Capital
Harrison Street Railroad Crossing Separation	Freight	Upgrade Harrison crossing of Union Pacific Railroad tracks to grade-separated facility. Assess as part of Hwy 224 & Hwy 99E Refinement Plan.	Location specific	Location specific	\$28,000 <u>30,700</u>	High	No	Capital
Hwy 224 Intersection Improvements at Hwy 224 and 37 th Avenue	Automobile Street & Freight	Consolidate the two northern legs of 37 th Avenue and International Way into one leg at Hwy 224.	Location specific	Location specific	\$1,946 <u>2,100</u>	High	No	Capital
Linwood Avenue Capacity Improvements (north)	Automobile Street	Widen to standard three lane cross section. Widen bridge over Johnson Creek.	Johnson Creek Blvd	King Rd	\$8,500 <u>9,300</u>	High	No	Capital
Linwood Avenue Capacity Improvements (south)	Automobile Street	Widen to standard three lane cross section.	King Rd	Harmony Rd	\$11,400 <u>12,500</u>	High	No	Capital
Hwy 224 Crossing Improvements at Oak and Washington Streets	Bicycle	Improve intersection crossing safety for cyclists at Washington Street and Oak Street.	Location specific	Location specific	\$10	High	No	Capital

Project Name	TSP Chapter	Project Description	From	To	Estimated Cost (\$1,000s) ⁹	Priority Ranking ¹⁰	Is Project Funded in Action Plan? ¹¹	Project Type
Downtown Parking Enforcement Management	Parking	Implement a downtown parking management system, including a dedicated parking manager.	Downtown	Downtown	\$40	High	No Yes	Operational
Kellogg Creek Bike-Ped Bridge	Pedestrian & Bicycle	Construct bike-ped overpass over Kellogg Creek in conjunction with light rail bridge.	Lake Rd	Kronberg Park	\$2,500	High	Yes	Capital
Kronberg Park Trail	Pedestrian & Bicycle	Construct multimodal trail along Kellogg Creek connecting Kronberg Park to downtown Milwaukee. Construct multi-use path to connect bike-ped bridge to safe crossing of Hwy 99E.	McLoughlin Blvd Kellogg Creek Bridge	Downtown River Rd at Hwy 99E	\$1,200 300	Low High	No Yes	Capital
Adams Street Connector	Pedestrian	Construct pedestrian- and bicycle-only facility on Adams St between 21 st Ave and Main St	21 st Ave	Main St	\$450	High	Yes	Capital
43 rd Avenue Sidewalks	Pedestrian	Fill in sidewalk gaps on both sides of street.	Howe St/ 42 nd Ave	King Rd/ 43 rd Ave	\$550 600	Low High	No	Capital
Harmony Road Sidewalks	Pedestrian	Fill in sidewalk gaps on both sides of street.	Linwood Ave	City limits	\$38 40	Low High	No	Capital
International Way Sidewalks	Pedestrian	Fill in sidewalk gaps on both sides of street	Criterion Ct	Lake Rd	\$767 840	Low High	No	Capital
River Road Sidewalks	Pedestrian	Fill in sidewalk gaps on both sides of street.	McLoughlin Blvd	City limits	\$626 690	Low High	No	Capital
Intersection Curb Ramp Improvements	Pedestrian	Install curb ramps at all intersections with sidewalks (approximately 700 intersections).	Citywide	Citywide	\$5 3,500	Low High	No	Capital
Hwy 224 Intersection Improvements at Hwy 224 and 37 th Avenue	Pedestrian	Improve pedestrian crossing.	Location specific	Location specific	\$20	Low High	No Yes	Capital
Hwy 224 Intersection Improvements at Hwy 224 and Freeman Way	Pedestrian	Improve pedestrian crossing.	Location specific	Location specific	\$20	Low High	No Yes	Capital
Hwy 224 Intersection Improvements at Hwy 224 and Harrison Street	Pedestrian	Improve pedestrian crossing.	Location specific	Location specific	\$20	Low High	No Yes	Capital
Hwy 224 Intersection Improvements at Hwy 224 and Monroe Street	Pedestrian	Improve pedestrian crossing.	Location specific	Location specific	\$15 20	Low High	No Yes	Capital
Hwy 224 Intersection Improvements at Hwy 224 and Oak Street	Pedestrian	Improve pedestrian crossing.	Location specific	Location specific	\$20	Low High	No Yes	Capital
Bicycle-friendly Street Grates	Bicycle	Install bicycle-friendly street grates.	Citywide	Citywide	\$50 60	Low High	No	Operational
Intersection Improvements at Linwood Avenue and Monroe Street	Bicycle	Improve safety of crossing at intersection.	Location specific	Location specific	\$10	Low High	No	Capital
Lake Road Bike Lanes	Bicycle	Fill in gaps in existing bicycle network with bike lanes.	Main St	Guilford Dr	\$3,142 3,400	Low High	No	Capital

Project Name	TSP Chapter	Project Description	From	To	Estimated Cost (\$1,000s) ⁹	Priority Ranking ¹⁰	Is Project Funded in Action Plan? ¹¹	Project Type
Cyclist Education	Bicycle	Promote cycling through bike use and route selection education.	Citywide	Citywide	\$10	Medium	No	Operational
Railroad Crossing Pedestrian Improvements at Oak	Pedestrian	Improve intersection for pedestrians.	Location specific	Location specific	\$15	Medium	No	Capital
Harrison Street Bike Lanes	Bicycle	Fill in gaps in existing bicycle network with bike lanes (cost included with Harrison St road widening project).	Hwy 99E	21 st Ave	\$273 300	Medium	No	Capital
Intersection Improvements at Linwood Avenue and King Road	Automobile Street	Implement protected/permissive left turn phasing for northbound and southbound approaches.	Location specific	Location specific	\$16 20	Medium	No	Capital
Brookside Drive Sidewalks	Pedestrian	Fill in sidewalk gaps on both sides of street.	Johnson Creek Blvd	Regents Dr	\$15 20	Medium	No	Capital
Springwater Trail Paving Project	Bicycle	Improve corridor through repaving existing trail.	29 th Ave	Linwood Ave	\$500	Medium	No	Capital
Lake Road Capacity Improvements	Automobile Street	Widen to standard three lane cross section.	21 st Ave	Oatfield Rd	\$7,392 8,100	Medium	No	Capital
Harrison Street Capacity Improvements	Automobile Street	Widen to standard three lane cross section.	32 nd St Ave	42 nd St Ave	\$2,565 2,800	Medium	No	Capital
Johnson Creek Blvd Intersection Improvements at Johnson Creek Blvd and Linwood Avenue	Automobile Street	Add eastbound right turn lanes and westbound right turn lanes.	Location specific	Location specific	\$803 880	Medium	No	Capital
Harrison Street Intersection Improvements at Harrison Street and Main Street	Automobile Street	Add westbound shared through/right turn lane or eastbound right turn lane.	Location specific	Location specific	\$34 40	Medium	No	Capital
Public Parking Structure	Parking	Construct 3- to 4-story public parking structure with retail at ground floor for visitor/employee parking.	Location specific	Location specific	\$10,000 11,000	Medium	No	Capital
Logus Road Sidewalks	Pedestrian	Fill in sidewalk gaps on both sides of street.	43 rd Ave	49 th Ave	\$771 850	HighMedium	YesNo	Capital
Springwater Trail Completion	Bicycle & Pedestrian & Bicycle	Contribute to regional project to complete Springwater Trail ("Sellwood Gap") along Ochoco Street.	17 th Ave	19 th Ave	\$80 90	HighMedium	YesNo	Capital
Downtown Streetscape Improvements	Parking & Pedestrian	Install sidewalk bulbouts, lighting, and pedestrian amenities.	Downtown	Downtown	\$6,700 7,300	HighMedium	YesNo	Capital
King Road Boulevard Treatments	Pedestrian	Install street boulevard treatments: widen sidewalks and improve crossings.	43 rd Ave	Linwood	\$500 550	HighMedium	YesNo	Capital
Bicycle and Pedestrian Overpass over Railroad Avenue	Pedestrian & Bicycle	Establish a dedicated bicycle and pedestrian connection across Railroad Avenue and the railroad tracks.	Railroad Ave	International Way	\$2,025 2,200	LowMedium	No	Capital
Oatfield Road Bike Lanes	Bicycle	Fill in gaps in existing bicycle network with bike lanes.	Guilford Ct	Lake Rd	\$348 380	LowMedium	No	Capital
International Way Bicycle Facilities	Bicycle	Construct bike lanes or other bike facilities.	37 th Ave	Lake Rd	\$400	Medium	No	Capital
Traffic Calming Improvements on River Road at Lark Street	Nbrhd Traffic Management	Install traffic calming measures such as a permanent speed-warning sign and/or roundabout.	Location specific	Location specific	\$310	Medium	No	Capital

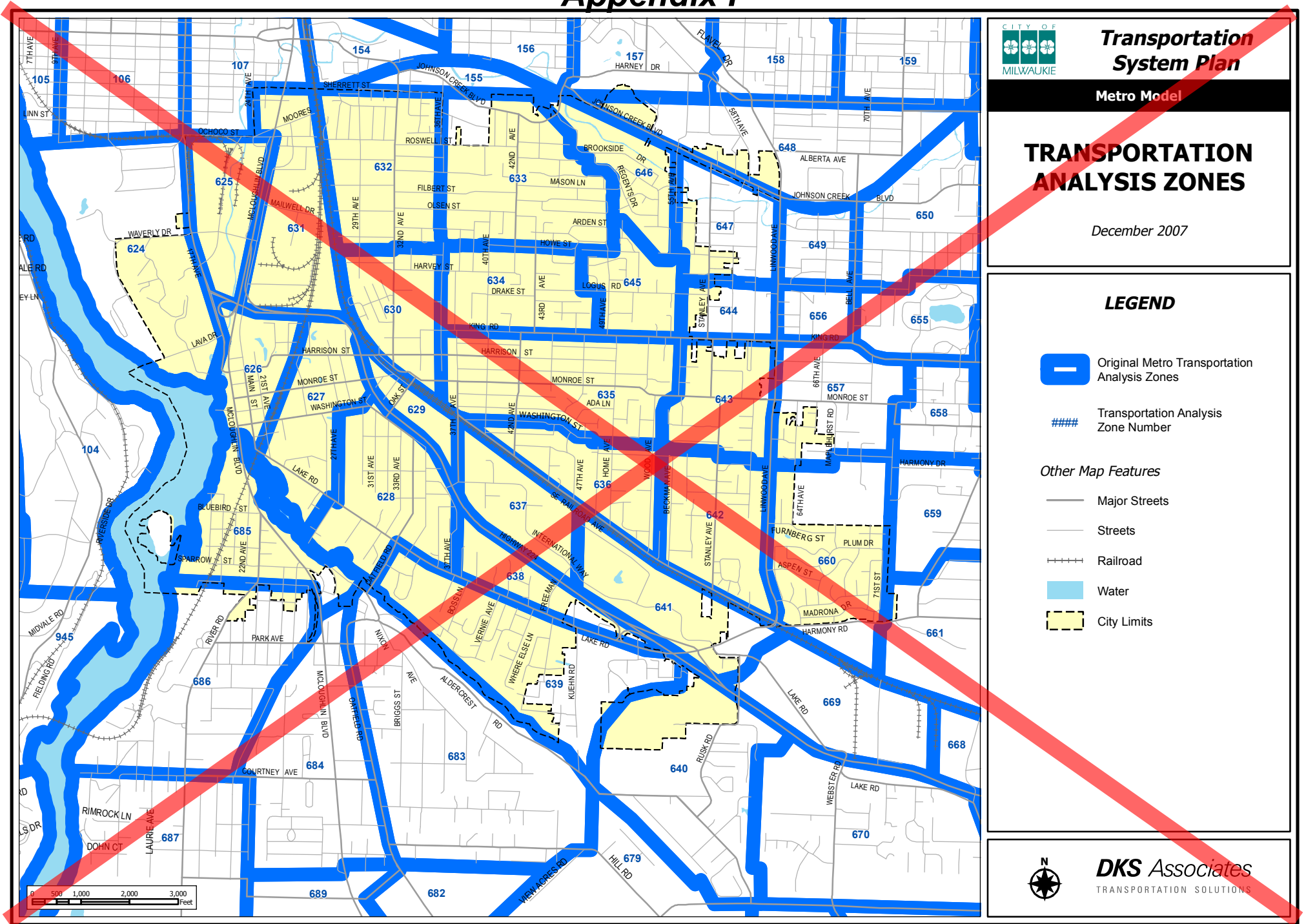
Project Name	TSP Chapter	Project Description	From	To	Estimated Cost (\$1,000s) ⁹	Priority Ranking ¹⁰	Is Project Funded in Action Plan? ¹¹	Project Type
<u>Seismic Upgrades to Johnson Creek Bridges</u>	<u>Street</u>	<u>Replace or retrofit City-jurisdiction bridges over Johnson Creek at 55th Ave and Stanley Ave for compliance with current seismic requirements.</u>	<u>Location specific</u>	<u>Location specific</u>		<u>Medium</u>	<u>No</u>	<u>Capital</u>
<u>Bicycle-Pedestrian Improvements to Main Street</u>	<u>Pedestrian & Bicycle</u>	<u>Construct multi-use path or other improved bike-ped facilities on Main St to provide safer connection between downtown and Tacoma Station. (TSAP)</u>	<u>Hanna Harvester Dr</u>	<u>Tacoma Station</u>	<u>\$2,900</u>	<u>Medium</u>	<u>No</u>	<u>Capital</u>
<u>Bicycle-Pedestrian Connection from Eastern Neighborhoods to Tacoma Station Area</u>	<u>Pedestrian & Bicycle</u>	<u>Establish bike-ped connection over existing railroad tracks and light rail to Tacoma Station Area. (TSAP)</u>	<u>Olsen St & Kelvin St</u>	<u>Mailwell Dr</u>	<u>\$4,000</u>	<u>Medium</u>	<u>No</u>	<u>Capital</u>
<u>Improved Connection from Springwater Trail to McLoughlin Boulevard</u>	<u>Pedestrian & Bicycle</u>	<u>Construct stairs or other facility to connect Springwater Trail to west side of McLoughlin Blvd. (TSAP)</u>	<u>Location specific</u>	<u>Location specific</u>	<u>\$500</u>	<u>Medium</u>	<u>No</u>	<u>Capital</u>
<u>Bicycle-Pedestrian Connection over Johnson Creek</u>	<u>Pedestrian & Bicycle</u>	<u>Construct bike-ped bridge over Johnson Creek along Clatsop St at 23rd Ave to connect Tacoma Station Area with adjacent neighborhood. (TSAP)</u>	<u>Location specific</u>	<u>Location specific</u>	<u>\$400</u>	<u>Medium</u>	<u>No</u>	<u>Capital</u>
<u>Improved Bicycle-Pedestrian Connections on West Side of Tacoma Station Area</u>	<u>Pedestrian & Bicycle</u>	<u>Improve bike-ped connections to adjacent neighborhood to west of Tacoma Station Area at Ochoco St and Milport Rd. (TSAP)</u>	<u>Location specific</u>	<u>Location specific</u>	<u>\$500</u>	<u>Medium</u>	<u>No</u>	<u>Capital</u>
LOW PRIORITY PROJECTS								
<u>Railroad Avenue Capacity Improvements</u>	<u>Automobile Street & Transit</u>	<u>Widen SE-Railroad Avenue to standard three lane cross section. Accommodate future bus service.</u>	<u>37th Ave</u>	<u>Linwood Ave</u>	<u>\$12,990</u> <u>14,200</u>	<u>High/Low</u>	<u>Yes/No</u>	<u>Capital</u>
<u>Ochoco Street Sidewalks</u>	<u>Pedestrian</u>	<u>Construct sidewalks on Ochoco Street to connect bus stops to Goodwill.</u>	<u>19th Ave</u>	<u>McLoughlin Blvd</u>	<u>\$\$\$</u> <u>\$1,300</u>	<u>Low</u>	<u>No</u>	<u>Capital</u>
<u>Springwater Corridor Trail Intersection Improvements at 45th Avenue</u>	<u>Bicycle</u>	<u>Improve safety of crossing at intersection.</u>	<u>Location specific</u>	<u>Location specific</u>	<u>\$10</u>	<u>Low</u>	<u>No</u>	<u>Capital</u>
<u>Johnson Creek Boulevard and 42nd Avenue Signalization</u>	<u>Automobile Street</u>	<u>Replace 3-way stop with signal when warranted.</u>	<u>Location specific</u>	<u>Location specific</u>	<u>\$250</u> <u>270</u>	<u>Low</u>	<u>No</u>	<u>Capital</u>
<u>Springwater Trail Ramp Improvement</u>	<u>Bicycle & Pedestrian</u>	<u>Improve ramp at Springwater Trail and McLoughlin Blvd.</u>	<u>Location specific</u>	<u>Location specific</u>	<u>\$15</u>	<u>Low</u>	<u>Yes</u>	<u>Capital</u>
<u>19th Avenue Sidewalks</u>	<u>Pedestrian</u>	<u>Fill in sidewalk gaps on both sides of street.</u>	<u>Kellogg Creek Trail</u>	<u>Sparrow St</u>	<u>\$305</u> <u>330</u>	<u>Low</u>	<u>No</u>	<u>Capital</u>
<u>22nd Avenue Sidewalks</u>	<u>Pedestrian</u>	<u>Fill in sidewalk gaps on both sides of street.</u>	<u>McLoughlin Blvd</u>	<u>Sparrow St</u>	<u>\$325</u> <u>360</u>	<u>Low</u>	<u>No</u>	<u>Capital</u>
<u>Edison Street Sidewalks</u>	<u>Pedestrian</u>	<u>Fill in sidewalk gaps on both sides of street.</u>	<u>35th Ave</u>	<u>37th Ave</u>	<u>\$116</u> <u>130</u>	<u>Low</u>	<u>No</u>	<u>Capital</u>
<u>Harvey Street Sidewalks</u>	<u>Pedestrian</u>	<u>Fill in sidewalk gaps on both sides of street.</u>	<u>32nd Ave</u>	<u>42nd Ave</u>	<u>\$534</u> <u>590</u>	<u>Low</u>	<u>No</u>	<u>Capital</u>
<u>Home Avenue Sidewalks</u>	<u>Pedestrian</u>	<u>Fill in sidewalk gaps on both sides of street.</u>	<u>Railroad Ave</u>	<u>King Rd</u>	<u>\$756</u> <u>830</u>	<u>Low</u>	<u>No</u>	<u>Capital</u>

Project Name	TSP Chapter	Project Description	From	To	Estimated Cost (\$1,000s) ⁹	Priority Ranking ¹⁰	Is Project Funded in Action Plan? ¹¹	Project Type
Johnson Creek Boulevard Sidewalks	Pedestrian	Fill in sidewalk gaps on both sides of street.	Harney Dr St	City limits	\$378 410	Low	No	Capital
Linwood Avenue Sidewalks (north)	Pedestrian	Fill in sidewalk gaps on both sides of street.	Johnson Creek Blvd	Railroad Ave King Rd	\$2,960 3,200 1050	Low	No	Capital
Linwood Avenue Sidewalks (south)	Pedestrian	Fill in sidewalk gaps on both sides of street.	King Rd	Railroad Ave	\$2,150	Low	No	Capital
Mason Lane Sidewalks	Pedestrian	Fill in sidewalk gaps on both sides of street.	42 nd Ave	Regents Dr	\$671 740	Low	No	Capital
Oatfield Road Sidewalks	Pedestrian	Fill in sidewalk gaps on both sides of street.	Guilford Ct	City limits	\$132 150	Low	No	Capital
Regents Drive Sidewalks	Pedestrian	Fill in sidewalk gaps on both sides of street.	Brookside Dr	Winsor Dr	\$494 540	Low	No	Capital
Roswell Street Sidewalks	Pedestrian	Fill in sidewalk gaps on both sides of street.	32 nd Ave	36 th Ave	\$192 210	Low	No	Capital
Rusk Road Sidewalks	Pedestrian	Fill in sidewalk gaps on both sides of street.	Lake Rd	North Clackamas Park	\$662 730	Low	No	Capital
Olsen Street Sidewalks	Pedestrian	Fill in sidewalk gaps on north side of street.	32 nd Ave	43 rd 42 nd Ave	\$432 470	Low	No	Capital
49 th Avenue Sidewalks	Pedestrian	Fill in sidewalk gaps on both sides of street.	Logus Rd	King Rd	\$250 270	Low	No	Capital
Hwy 224 Sidewalks	Pedestrian	Fill in sidewalk gaps on both sides of street.	Oak St	37 th Ave	\$420 460	Low	No	Capital
Intersection Improvements at Olsen Street and 42 nd Avenue	Pedestrian	Improve pedestrian crossing.	Location specific	Location specific	\$20	Low	No	Capital
Intersection Improvements at Harmony and Lake	Pedestrian	Improve pedestrian crossing.	Location specific	Location specific	\$15	Low	No	Capital
Intersection Improvements at Railroad and 37 th Avenues	Pedestrian	Improve pedestrian crossing.	Location specific	Location specific	\$10	Low	No	Capital
Intersection Improvements at Stanley and Logus	Pedestrian	Improve pedestrian crossing.	Location specific	Location specific	\$15 20	Low	No	Capital
Springwater Trail Ramp Improvement at McLoughlin	Pedestrian	Improve ramp at Springwater Trail and McLoughlin Blvd.	Location specific	Location specific	\$15	Low	No	Capital
Pedestrian Connection to North Clackamas Park	Pedestrian	Create pedestrian connection between the school and the park.	Rowe Middle School	North Clackamas Park	\$1,284 1,400	Low	No	Capital
Hwy 224 Intersection Improvements at Hwy 224 and 17 th Avenue	Freight	Upgrade intersection turning radii to better accommodate freight movements.	Location specific	Location specific	\$50 60	Low	No	Capital
Intersection Improvements at Mailwell and Omark Drives	Freight	Upgrade intersection turning radii to better accommodate freight movements.	Location specific	Location specific	\$50 60	Low	No	Capital
Milwaukie Bike Map	Bicycle	Produce a Milwaukie Bike Map.	Citywide	Citywide	\$50 60	Low	No	Operational

Project Name	TSP Chapter	Project Description	From	To	Estimated Cost (\$1,000s) ⁹	Priority Ranking ¹⁰	Is Project Funded in Action Plan? ¹¹	Project Type
Trolley Trail Signage	Bicycle	Design and install Trolley Trail signage.	Milwaukee Riverfront	Southern city limits	\$54	Low	No	Capital
Springwater Trail Signage	Bicycle	Install wayfinding signage for Springwater Trail.	Citywide	Citywide	\$15 20	Low	No	Operational
Intersection Improvements at Johnson Creek Boulevard and Linwood Avenue	Bicycle	Improve safety of crossing at intersection.	Location specific	Location specific	\$10	Low	No	Capital
Intersection Improvements at Linwood Avenue and King Road	Bicycle	Improve safety of crossing at intersection.	Location specific	Location specific	\$10	Low	No	Capital
Intersection Improvements at Linwood and Harmony	Bicycle	Improve safety of crossing at intersection.	Location specific	Location specific	\$10	Low	No	Capital
Intersection Improvements at International Way and Lake Road	Bicycle	Improve safety of crossing at intersection.	Location specific	Location specific	\$10	Low	No	Capital
Intersection Improvements at Adams and 21 st	Bicycle	Improve safety of crossing at intersection.	Location specific	Location specific	\$10	Low	No	Capital
Harrison Street Bike Lanes	Bicycle	Fill in gaps in existing bicycle network with bike lanes.	Hwy 224	42 nd Ave	\$13 10	Low	No	Capital
37 th Avenue Bike Lanes	Bicycle	Fill in gaps in existing bicycle network with bike lanes.	Harrison St	Hwy 224	\$2,900 3,200	Low	No	Capital
43 rd Avenue Bike Lanes	Bicycle	Fill in gaps in existing bicycle network with bike lanes.	King Rd	Filbert St	\$1,014 1,100	Low	No	Capital
Linwood Avenue Bike Lanes (north)	Bicycle	Fill in gaps in existing bicycle network with bike lanes.	Queen Rd	Johnson Creek Blvd	\$1,692 1,900	Low	No	Capital
Linwood Avenue Bike Lanes (south)	Bicycle	Fill in gaps in existing bicycle network with bike lanes.	Juniper St	Harmony Rd	\$296 320	Low	No	Capital
Rusk Road Bike Lanes	Bicycle	Fill in gaps in existing bicycle network with bike lanes.	Lake Rd	North Clackamas Park	\$936 1,000	Low	No	Capital
21 st Avenue Bike Lanes	Bicycle	Fill in gaps in existing bicycle network with bike lanes.	Harrison St	Lake Rd	\$50	Low	No	Capital
Police Enforcement on Drivers	Bicycle	Enforce laws related to bike lanes and bicycle safety.	Citywide	Citywide	\$10	Low	No	Operational
Bike Lane Striping	Bicycle & Transit	Re-stripe existing bike lanes and stripe bike lanes on streets where buses and bicyclists share the road.	Citywide	Citywide	\$20	Low	No	Operational
Kellogg Creek Trail Improvements	Bicycle	Resurface trail and provide wayfinding signage to/from trail.	Milwaukee Riverfront	Treatment Plant	\$623 680	Low	No	Capital
Hwy 224 Access Modifications at Freeman Way	Automobile Street	Modify access at Freeman Way to improve intersection functioning.	Location specific	Location specific	\$1,313 1,400	Low	No	Capital
Harmony Road Grade Separation and Realignment at Linwood	Freight & Automobile	Grade separate Harmony Road from Union Pacific Railroad and align as a through east-west movement. Outcome of alignment and geometry is dependant upon the Harmony Road Environmental Assessment project (scheduled for completion Fall 2008).	Location specific	Location specific	\$28,000	Low	No	Capital

Project Name	TSP Chapter	Project Description	From	To	Estimated Cost (\$1,000s) ⁹	Priority Ranking ¹⁰	Is Project Funded in Action Plan? ¹¹	Project Type
<u>Washington Street Sidewalks</u>	<u>Pedestrian</u>	Fill in sidewalk gaps on both sides of street.	<u>35th 32nd Ave</u>	<u>37th 35th Ave</u>	<u>\$130</u>	<u>Low</u>	<u>No</u>	<u>Capital</u>
<u>Franklin Street Sidewalks</u>	<u>Pedestrian</u>	Install sidewalks on both sides of street to connect to <u>Heeter Campbell Elementary School</u> .	<u>42nd Ave</u>	<u>45th Ave</u>	<u>\$200 220</u>	<u>Medium Low</u>	<u>No</u>	<u>Capital</u>
<u>Downtown Parking Signage</u>	<u>Parking</u>	Install wayfinding and identification signage at McLoughlin Blvd. intersections and around public parking lots.	<u>Downtown</u>	<u>Downtown</u>	<u>\$10</u>	<u>Medium Low</u>	<u>No</u>	<u>Capital</u>
<u>Intersection Improvements at 42nd Avenue and Harrison Street</u>	<u>Automobile Street</u>	Signalize intersection to facilitate dominant traffic flow.	<u>Location specific</u>	<u>Location specific</u>	<u>\$252 280</u>	<u>Medium Low</u>	<u>No</u>	<u>Capital</u>
<u>Pedestrian Walkway Signage</u>	<u>Pedestrian</u>	Provide maps and wayfinding signage on streets that identify ways to get around the city.	<u>Citywide</u>	<u>Citywide</u>	<u>\$10</u>	<u>Medium Low</u>	<u>No</u>	<u>Operational</u>
<u>Intersection Improvements at all Crossings of McLoughlin Boulevard</u>	<u>Pedestrian</u>	Improve all existing crossings of McLoughlin Blvd (e.g., extended time for crossing, signage). (ODOT to do.)	<u>Location specific</u>	<u>Location specific</u>	<u>---</u>	<u>Low</u>	<u>No</u>	<u>Capital</u>
<u>Bike-Ped Path on Sparrow Street</u>	<u>Pedestrian & Bicycle</u>	Establish a dedicated bicycle and pedestrian connection on Sparrow St. connecting River Rd to Trolley Trail	<u>River Rd</u>	<u>Trolley Trail</u>	<u>\$350</u>	<u>Low</u>	<u>No</u>	<u>Capital</u>
<u>Bike-Ped Overpass over McLoughlin Boulevard at River Road</u>	<u>Pedestrian & Bicycle</u>	Establish a dedicated bicycle and pedestrian connection across McLoughlin Blvd.	<u>Kronberg Park</u>	<u>River Rd</u>	<u>\$2,500</u>	<u>Low</u>	<u>No</u>	<u>Capital</u>
<u>Intersection Improvements at 42nd Avenue and King Road</u>	<u>Street</u>	Realignment of intersection to improve traffic movements between 42 nd Ave and King Rd east of 42 nd Ave.	<u>Location specific</u>	<u>Location specific</u>	<u>\$200</u>	<u>Low</u>	<u>No</u>	<u>Capital</u>
<u>Traffic Calming on lower King Road</u>	<u>Nbrhd Traffic Management</u>	Install traffic calming measures on King Rd.	<u>36th Ave</u>	<u>42nd Ave</u>	<u>\$300</u>	<u>Low</u>	<u>No</u>	<u>Capital</u>
<u>Improved Connection from Springwater Trail to Pendleton Site (Tunnel)</u>	<u>Pedestrian & Bicycle</u>	Construct tunnel under Springwater Trail to improve connection to Pendleton site at Clatsop St. (TSAP)	<u>Location specific</u>	<u>Location specific</u>	<u>\$1,200</u>	<u>Low</u>	<u>No</u>	<u>Capital</u>
<u>Crossing Improvements of McLoughlin Boulevard at Ochoco Street and Milport Road</u>	<u>Pedestrian & Bicycle</u>	Construct improvements at Ochoco St and Milport Rd to improve bike-ped crossing of McLoughlin Blvd (per ODOT, this will require full intersection improvements). (TSAP)	<u>Location specific</u>	<u>Location specific</u>	<u>\$8,320</u>	<u>Low</u>	<u>No</u>	<u>Capital</u>
<u>Local Street Connections in Tacoma Station Area</u>	<u>Street</u>	Connect local streets within Tacoma Station Area: 24 th Ave between Ochoco St/Moore St & Clatsop St; Omak St between Mailwell Dr & Beta St (w/ mid-block connection from Main St); and Mailwell Dr to Harrison St via 26 th Ave. (TSAP)	<u>Location specific</u>	<u>Location specific</u>	<u>\$8,120</u>	<u>Low</u>	<u>No</u>	<u>Capital</u>
<u>Local Street Improvements in Tacoma Station Area</u>	<u>Street</u>	Construct street improvements on Stubb St, Beta St, Ochoco St, Hanna Harvester Dr, and Mailwell Dr. (TSAP)	<u>Location specific</u>	<u>Location specific</u>	<u>\$5,280</u>	<u>Low</u>	<u>No</u>	<u>Capital</u>

Appendix F





Transportation System Plan

Disaggregate Model

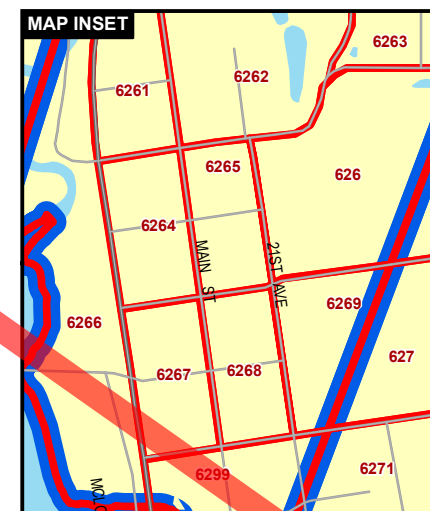
TRANSPORTATION ANALYSIS ZONES

December 2007

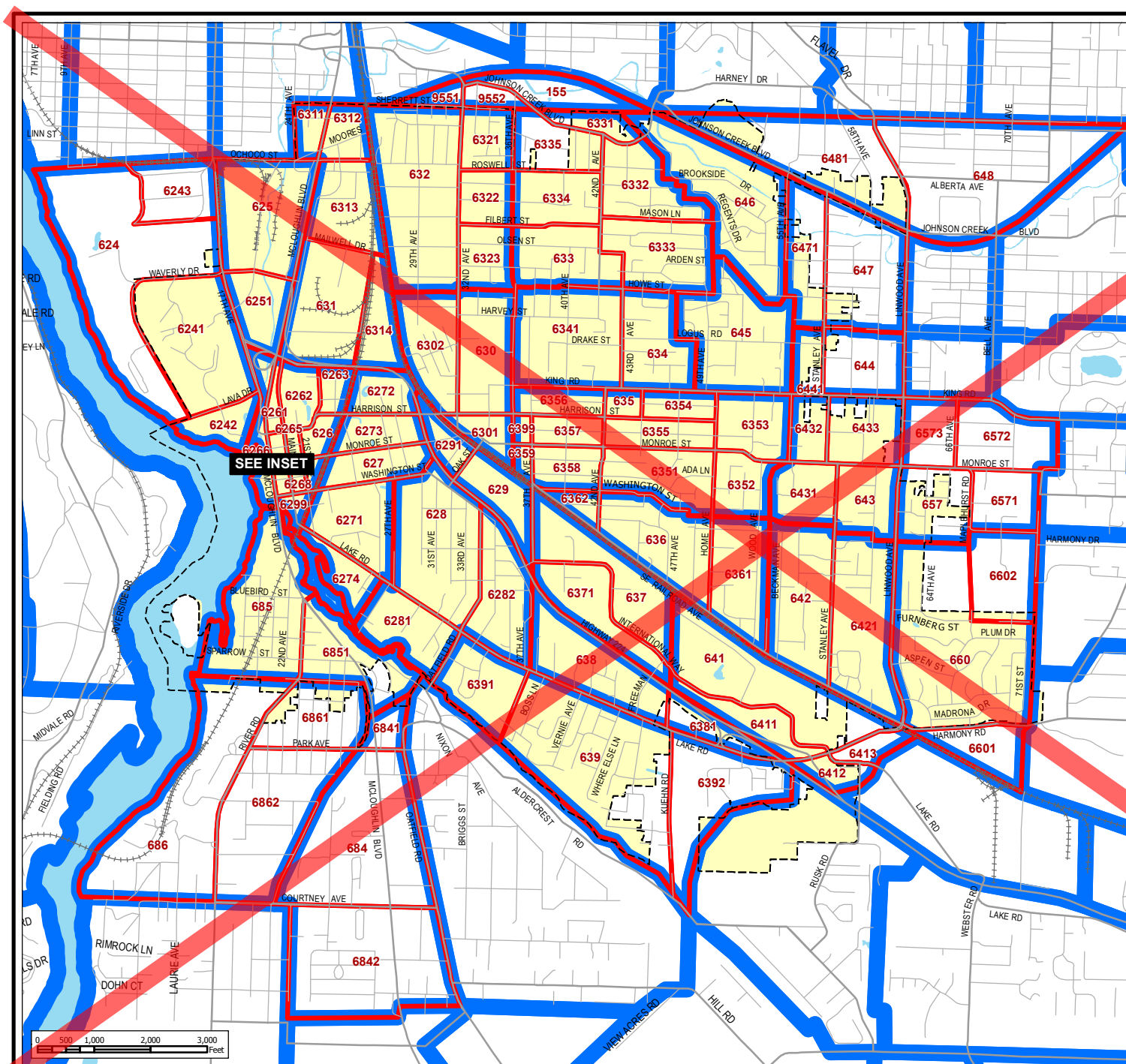
LEGEND

- Original Metro Transportation Analysis Zones
- Disaggregated Transportation Analysis Zones
- Transportation Analysis Zone Number
- Major Streets
- Streets
- Railroad
- Water
- City Limits

MAP INSET



DKS Associates
TRANSPORTATION SOLUTIONS



2005 and 2030 Metro Land Use Data (Disaggregated)

Metro Taz	DKS TAZ		2005 HH	2005 RET	2005 OTH	2030 HH	2030 RET	2030 OTH	
155	155		1	0	13	2	0	38	
155	9551		2	0	0	4	0	5	
155	9552		8	3	2	14	6	10	
		Total	11	3	15	20	6	53	
	155	Control	11	3	15	20	6	53	← Original Metro TAZ Total
624	624		0	0	50	0	0	50	
624	6241		350	0	0	375	0	0	
624	6242		160	0	103	173	0	191	
624	6243		75	0	0	80	0	0	
		Total	585	0	153	628	0	241	
	624	Control	585	0	153	628	0	241	← Original Metro TAZ Total
625	625		0	75	645	2	100	680	
625	6251		0	50	428	0	69	452	
		Total	0	125	1073	2	169	1132	
	625	Control	0	125	1073	2	169	1132	← Original Metro TAZ Total
626	626		0	0	50	0	0	60	
626	6261		0	20	90	0	27	115	
626	6262		60	18	90	291	24	115	
626	6263		72	0	0	291	0	0	
626	6264		0	40	0	90	54	0	
626	6265		0	0	90	0	0	115	
626	6266		0	0	10	0	0	55	
626	6267		0	40	90	0	54	115	
626	6268		0	40	90	0	53	115	
626	6269		0	40	90	90	53	115	
626	6299		0	18	89	0	25	115	
		Total	132	216	689	762	290	920	
	626	Control	132	216	689	762	290	920	← Original Metro TAZ Total
627	627		63	3	50	72	5	66	
627	6271		76	18	590	86	22	795	
627	6272		208	0	0	236	0	0	
627	6273		208	0	50	236	0	66	
627	6274		76	0	295	86	0	398	
		Total	631	21	985	716	27	1325	
	627	Control	631	21	985	716	27	1325	← Original Metro TAZ Total
628	628		200	133	47	215	169	400	
628	6281		300	15	0	310	25	44	
628	6282		200	0	0	210	0	100	
		Total	700	148	47	735	194	544	
	628	Control	700	148	47	735	194	544	← Original Metro TAZ Total
629	629		0	30	30	0	60	50	
902	6291		39	312	217	60	393	346	
		Total	39	342	247	60	453	396	
	629	Control	39	342	247	60	453	396	← Original Metro TAZ Total
630	630		250	0	50	280	0	80	
630	6301		80	5	100	100	11	346	
630	6302		182	0	350	261	0	380	
		Total	512	5	500	641	11	806	
	630	Control	512	5	500	641	11	806	← Original Metro TAZ Total
631	631		0	0	410	0	0	445	
631	6311		8	20	110	27	35	119	
631	6312		0	10	175	0	16	190	
631	6313		0	0	297	0	0	322	
631	6314		0	0	175	0	0	190	
		Total	8	30	1167	27	51	1266	
	631	Control	8	30	1167	27	51	1266	← Original Metro TAZ Total
632	632		364	8	100	386	13	149	
632	6321		121	0	24	129	0	42	
632	6322		121	0	24	128	0	42	

2005 and 2030 Metro Land Use Data (Disaggregated)

Metro Taz	DKS TAZ		2005 HH	2005 RET	2005 OTH	2030 HH	2030 RET	2030 OTH	
632	6323		121	0	24	129	0	42	
		Total	727	8	172	772	13	275	
	632	Control	727	8	172	772	13	275	← Original Metro TAZ Total
633	633		162	0	0	165	0	0	
633	6331		40	0	40	53	0	55	
633	6332		145	0	0	160	0	0	
633	6333		202	0	0	210	0	0	
633	6334		145	0	69	160	0	75	
633	6335		115	0	0	125	0	0	
		Total	809	0	109	873	0	130	
	633	Control	809	0	109	873	0	130	← Original Metro TAZ Total
634	634		236	0	22	256	0	29	
634	6341		290	0	32	315	0	44	
		Total	526	0	54	571	0	73	
	634	Control	526	0	54	571	0	73	← Original Metro TAZ Total
635	635		0	180	24	0	230	85	
635	6351		171	0	0	193	0	0	
635	6352		150	0	0	160	0	0	
635	6353		150	0	20	170	0	35	
635	6354		50	0	0	60	0	0	
635	6355		83	30	40	95	58	60	
635	6356		58	0	0	66	0	0	
635	6357		50	0	10	57	0	25	
635	6358		100	0	0	115	0	0	
635	6359		0	0	0	20	0	0	
635	6399		17	0	0	20	0	0	
		Total	829	210	94	956	288	205	
	635	Control	829	210	94	956	288	205	← Original Metro TAZ Total
636	636		190	0	299	230	0	306	
636	6361		144	0	0	152	0	0	
636	6362		40	0	0	50	0	0	
		Total	374	0	299	432	0	306	
	636	Control	374	0	299	432	0	306	← Original Metro TAZ Total
637	637		1	20	900	28	82	1185	
637	6371		0	280	559	0	330	641	
		Total	1	300	1459	28	412	1826	
	637	Control	1	300	1459	28	412	1826	← Original Metro TAZ Total
638	638		25	0	67	20	1	72	
638	6381		167	0	0	152	0	0	
		Total	192	0	67	172	1	72	
	638	Control	192	0	67	172	1	72	← Original Metro TAZ Total
639	639		271	0	29	262	0	25	
639	6391		120	0	90	116	0	84	
639	6392		151	0	0	148	0	0	
		Total	542	0	119	526	0	109	
	639	Control	542	0	119	526	0	109	← Original Metro TAZ Total
641	641		0	42	1700	0	60	1780	
641	6411		0	100	465	0	137	471	
641	6412		42	0	0	70	0	0	
641	6413		0	0	110	0	0	115	
		Total	42	142	2275	70	197	2366	
	641	Control	42	142	2275	70	197	2366	← Original Metro TAZ Total
642	642		230	0	75	245	0	100	
642	6421		210	0	146	233	0	209	
		Total	440	0	221	478	0	309	
	642	Control	440	0	221	478	0	309	← Original Metro TAZ Total
643	643		100	0	0	115	0	0	
643	6431		100	0	20	115	0	30	
643	6432		85	0	0	100	0	0	

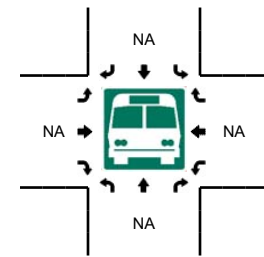
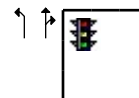
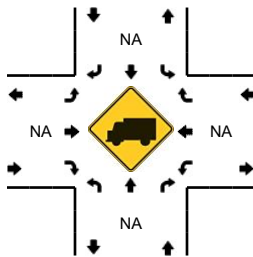
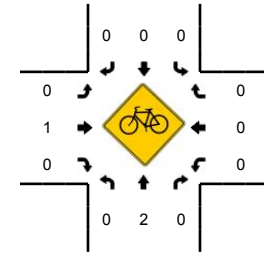
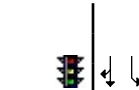
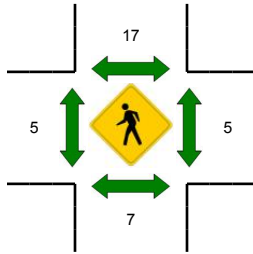
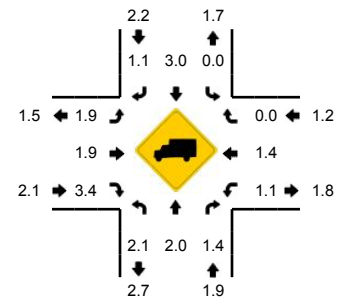
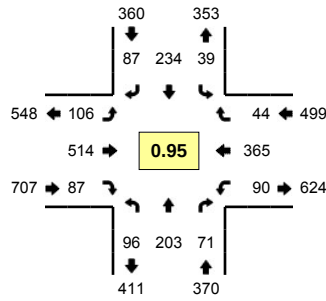
2005 and 2030 Metro Land Use Data (Disaggregated)

Metro Taz	DKS TAZ		2005 HH	2005 RET	2005 OTH	2030 HH	2030 RET	2030 OTH	
643	6433		143	53	31	160	71	52	
		Total	428	53	51	490	71	82	
	643	Control	428	53	51	490	71	82	← Original Metro TAZ Total
644	644		35	0	69	36	0	75	
644	6441		100	0	69	106	0	100	
		Total	135	0	138	142	0	175	
	644	Control	135	0	138	142	0	175	← Original Metro TAZ Total
645	645		278	0	89	304	0	104	
		Total	278	0	89	304	0	104	
	645	Control	278	0	89	304	0	104	← Original Metro TAZ Total
646	646		284	17	103	297	22	113	
		Total	284	17	103	297	22	113	
	646	Control	284	17	103	297	22	113	← Original Metro TAZ Total
647	647		186	0	424	195	0	419	
647	6471		62	0	424	68	0	420	
		Total	248	0	848	263	0	839	
	647	Control	248	0	848	263	0	839	← Original Metro TAZ Total
648	648		360	14	680	380	35	870	
648	6481		120	80	226	130	120	295	
		Total	480	94	906	510	155	1165	
	648	Control	480	94	906	510	155	1165	← Original Metro TAZ Total
657	657		80	0	0	82	0	0	
657	6571		78	0	35	85	0	40	
657	6572		80	6	21	83	8	26	
657	6573		80	0	0	80	0	0	
		Total	318	6	56	330	8	66	
	657	Control	318	6	56	330	8	66	← Original Metro TAZ Total
660	660		559	6	0	574	7	5	
660	6601		0	0	0	10	0	0	
660	6602		15	0	32	65	0	34	
		Total	574	6	32	649	7	39	
	660	Control	574	6	32	649	7	39	← Original Metro TAZ Total
684	684		565	185	247	608	248	408	
684	6841		10	20	0	20	25	0	
684	6842		565	101	247	608	160	408	
		Total	1140	306	494	1236	423	816	
	684	Control	1140	306	494	1236	423	816	← Original Metro TAZ Total
685	685		182	30	12	208	40	21	
685	6851		240	20	0	250	26	0	
		Total	422	50	12	458	66	21	
	685	Control	422	50	12	458	66	21	← Original Metro TAZ Total
686	686		545	13	600	550	28	664	
686	6861		271	0	75	274	0	125	
686	6862		545	0	62	550	0	100	
		Total	1361	13	737	1374	28	889	
	686	Control	1361	13	737	1374	28	889	← Original Metro TAZ Total

LOCATION: Linwood Ave -- King Rd
CITY/STATE: Milwaukie, OR

QC JOB #: 10776902
DATE: Tue, Jun 12 2012

Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

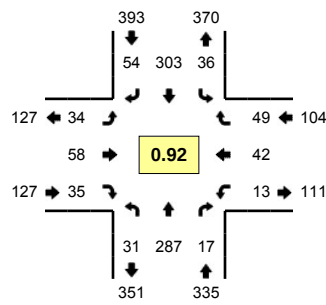


5-Min Count Period Beginning At	Linwood Ave (Northbound)				Linwood Ave (Southbound)				King Rd (Eastbound)				King Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	6	27	10	0	4	13	4	0	4	37	8	0	6	21	5	0	145	1754
4:05 PM	8	12	6	0	5	14	3	0	8	35	7	0	12	19	3	0	132	
4:10 PM	5	19	5	0	7	7	6	0	3	53	11	0	4	29	3	0	152	
4:15 PM	10	18	5	0	1	18	4	0	16	34	6	0	9	24	3	0	148	
4:20 PM	5	14	10	0	3	21	6	0	11	42	6	0	2	23	7	0	150	
4:25 PM	4	7	8	0	4	7	3	0	9	43	9	0	5	34	1	0	134	
4:30 PM	13	24	8	0	3	19	3	0	7	36	6	0	5	16	4	0	144	
4:35 PM	8	19	5	0	4	23	14	0	11	32	6	0	16	23	3	0	164	
4:40 PM	6	15	9	0	4	29	8	0	13	28	7	0	10	24	3	0	156	
4:45 PM	3	17	10	0	5	17	8	0	8	47	3	0	11	32	2	0	163	
4:50 PM	13	11	3	0	2	18	7	0	2	38	4	0	6	24	4	0	132	1869
4:55 PM	3	9	7	0	6	13	6	0	10	37	10	0	8	24	1	0	134	
5:00 PM	12	18	5	0	6	15	3	0	6	37	7	0	12	38	3	0	162	1771
5:05 PM	6	21	4	0	3	24	11	0	13	43	8	0	7	28	1	0	169	1808
5:10 PM	5	16	6	0	2	9	7	0	11	43	8	0	6	31	4	0	148	1804
5:15 PM	11	23	9	0	3	25	7	0	9	41	8	0	7	31	3	0	177	1833
5:20 PM	5	19	4	0	5	19	7	0	5	42	9	0	5	42	3	0	165	1848
5:25 PM	10	19	7	0	1	20	11	0	10	41	7	0	8	19	2	0	155	1869
5:30 PM	8	20	10	0	3	14	9	0	14	44	5	0	10	22	2	0	161	1886
5:35 PM	8	13	3	0	7	26	6	0	5	46	10	0	10	36	5	0	175	1897
5:40 PM	7	19	6	0	3	25	4	0	8	41	7	0	12	35	4	0	171	1912
5:45 PM	10	8	12	0	2	27	6	0	5	42	6	0	6	29	6	0	159	1908
5:50 PM	8	15	1	0	4	18	12	0	8	40	7	0	5	33	6	0	157	1933
5:55 PM	6	12	4	0	0	12	4	0	12	54	5	0	2	21	5	0	137	1936
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	92	208	76	0	52	260	76	0	108	524	88	0	128	372	44	0	2028	
Heavy Trucks	0	0	0		0	12	0		4	20	0		0	0	0		36	
Pedestrians		4				32				8				8			52	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

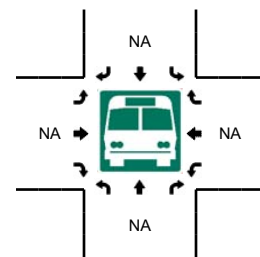
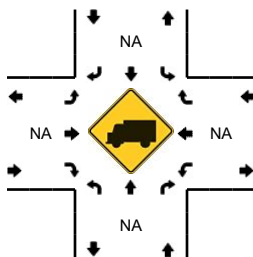
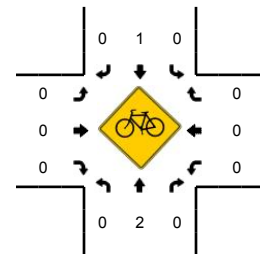
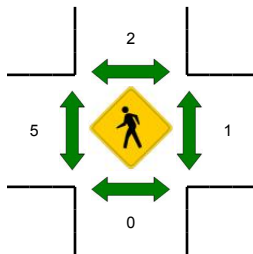
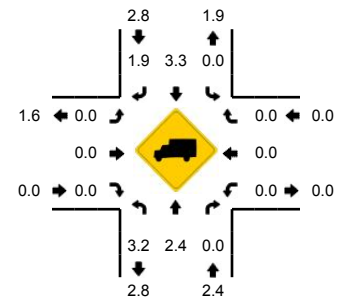
Comments:

LOCATION: Linwood Ave -- Monroe St
CITY/STATE: Milwaukie, OR

QC JOB #: 10776903
DATE: Tue, Jun 12 2012



Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:15 PM -- 5:30 PM



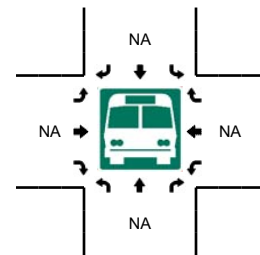
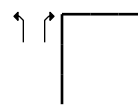
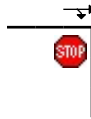
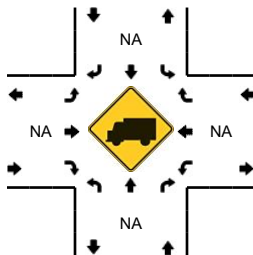
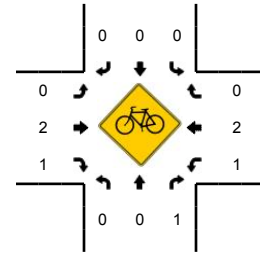
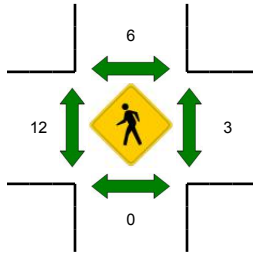
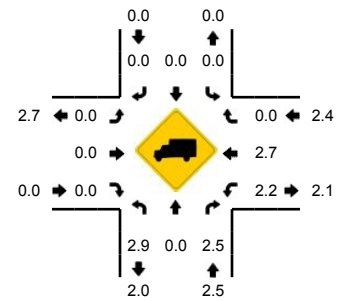
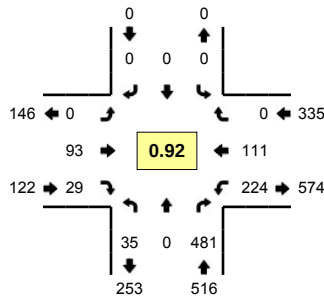
5-Min Count Period Beginning At	Linwood Ave (Northbound)				Linwood Ave (Southbound)				Monroe St (Eastbound)				Monroe St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	25	2	0	3	15	4	0	4	4	2	0	1	3	3	0	68	
4:05 PM	2	25	1	0	5	19	7	0	3	3	4	0	2	1	1	0	73	
4:10 PM	3	28	2	0	2	17	3	0	1	1	4	0	2	5	4	0	72	
4:15 PM	4	26	5	0	4	26	3	0	4	6	3	0	1	2	3	0	87	
4:20 PM	2	21	4	0	3	16	8	0	4	3	2	0	1	2	6	0	72	
4:25 PM	4	19	2	0	3	16	2	0	4	3	3	0	0	2	3	0	61	
4:30 PM	3	37	3	0	3	30	6	0	1	5	5	0	2	6	8	0	109	
4:35 PM	1	16	1	0	4	34	4	0	4	2	5	0	2	5	1	0	79	
4:40 PM	2	23	2	0	5	36	2	0	1	2	5	0	2	2	1	0	83	
4:45 PM	1	28	0	0	2	21	4	0	5	1	4	0	4	2	1	0	73	
4:50 PM	0	26	2	0	2	25	5	0	0	2	2	0	0	2	2	0	68	
4:55 PM	2	16	3	0	2	18	5	0	1	3	4	0	0	0	0	0	54	899
5:00 PM	1	27	1	0	5	20	5	0	4	5	2	0	0	1	6	0	77	908
5:05 PM	4	23	4	0	3	30	7	0	2	6	3	0	1	1	2	0	86	921
5:10 PM	1	27	1	0	0	17	2	0	1	3	6	0	2	5	2	0	67	916
5:15 PM	1	26	1	0	2	28	5	0	2	4	3	0	1	5	12	0	90	919
5:20 PM	3	37	1	0	4	25	2	0	1	3	2	0	1	4	4	0	87	934
5:25 PM	3	20	2	0	3	31	4	0	4	5	3	0	1	2	5	0	83	956
5:30 PM	4	25	3	0	5	17	7	0	4	9	2	0	0	4	3	0	83	930
5:35 PM	1	29	0	0	2	35	4	0	8	3	1	0	1	3	2	0	89	940
5:40 PM	2	12	2	0	4	33	5	0	2	3	3	0	0	2	4	0	72	929
5:45 PM	7	21	0	0	5	26	4	0	3	10	5	0	3	1	2	0	87	943
5:50 PM	1	17	2	0	2	27	5	0	1	3	0	0	2	5	3	0	68	943
5:55 PM	3	23	0	0	1	14	4	0	2	4	5	0	1	9	4	0	70	959
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	28	332	16	0	36	336	44	0	28	48	32	0	12	44	84	0	1040	
Heavy Trucks	4	12	0	0	0	20	0	0	0	0	0	0	0	0	0	0	36	
Pedestrians	0	0	0	0	0	8	0	0	0	4	0	0	0	0	0	0	12	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: 42nd Ave -- King Rd
CITY/STATE: Milwaukie, OR

QC JOB #: 10776901
DATE: Tue, Jun 12 2012

Peak-Hour: 4:55 PM -- 5:55 PM
Peak 15-Min: 5:05 PM -- 5:20 PM



5-Min Count Period Beginning At	42nd Ave (Northbound)				42nd Ave (Southbound)				King Rd (Eastbound)				King Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	0	31	0	0	0	0	0	0	6	0	0	20	4	0	0	64	
4:05 PM	1	0	33	0	0	0	0	0	0	15	4	0	18	3	0	0	74	
4:10 PM	2	0	40	0	0	0	0	0	0	8	2	0	20	6	0	0	78	
4:15 PM	0	0	39	0	0	0	0	0	0	3	0	0	14	1	0	0	57	
4:20 PM	4	0	35	0	0	0	0	0	0	5	1	0	23	3	0	0	71	
4:25 PM	6	0	39	0	0	0	0	0	0	4	1	0	23	4	0	0	77	
4:30 PM	2	0	41	0	0	0	0	0	0	9	7	0	15	2	0	0	76	
4:35 PM	2	0	36	0	0	0	0	0	0	8	0	0	14	4	0	0	64	
4:40 PM	1	0	45	0	0	0	0	0	0	9	2	0	19	6	0	0	82	
4:45 PM	2	0	34	0	0	0	0	0	0	7	3	0	21	8	0	0	75	
4:50 PM	1	0	32	0	0	0	0	0	0	11	1	0	20	8	0	0	73	
4:55 PM	1	0	38	0	0	0	0	0	0	11	6	0	10	7	0	0	73	864
5:00 PM	4	0	27	0	0	0	0	0	0	6	3	0	16	14	0	0	70	870
5:05 PM	5	0	44	0	0	0	0	0	0	10	1	0	14	13	0	0	87	883
5:10 PM	2	0	55	0	0	0	0	0	0	7	4	0	15	5	0	0	88	893
5:15 PM	0	0	45	0	0	0	0	0	0	5	3	0	20	16	0	0	89	925
5:20 PM	4	0	35	0	0	0	0	0	0	8	0	0	30	8	0	0	85	939
5:25 PM	4	0	36	0	0	0	0	0	0	8	3	0	13	7	0	0	71	933
5:30 PM	2	0	45	0	0	0	0	0	0	7	4	0	17	9	0	0	84	941
5:35 PM	5	0	34	0	0	0	0	0	0	6	2	0	23	7	0	0	77	954
5:40 PM	5	0	38	0	0	0	0	0	0	7	1	0	22	7	0	0	80	952
5:45 PM	2	0	40	0	0	0	0	0	0	7	2	0	21	5	0	0	77	954
5:50 PM	1	0	44	0	0	0	0	0	0	11	0	0	23	13	0	0	92	973
5:55 PM	1	0	37	0	0	0	0	0	0	6	1	0	8	6	0	0	59	959
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	28	0	576	0	0	0	0	0	0	88	32	0	196	136	0	0	1056	
Heavy Trucks	0	0	8	0	0	0	0	0	0	0	0	0	0	4	0	0	12	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	
Bicycles	0	0	0	0	0	0	0	0	0	2	0	0	1	1	0	0	4	
Railroad																		
Stopped Buses																		

Comments:

HCM Signalized Intersection Capacity Analysis

1112: SE Linwood Avenue & King Road

6/29/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	515	90	90	365	45	100	205	75	40	235	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.96		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1808		1787	1839		1770	1777		1805	1760	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1808		1787	1839		1770	1777		1805	1760	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	116	542	95	95	364	47	105	216	79	42	247	95
RTOR Reduction (vph)	0	7	0	0	5	0	0	13	0	0	15	0
Lane Group Flow (vph)	116	630	0	95	426	0	105	282	0	42	327	0
Confl. Peds. (#/hr)	17		7	7		17	5		5	5		5
Confl. Bikes (#/hr)						1						2
Heavy Vehicles (%)	2%	2%	3%	1%	1%	0%	2%	2%	1%	0%	3%	1%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	8.5	31.2		8.3	31.0		6.0	29.0		2.9	25.9	
Effective Green, g (s)	8.5	31.2		8.3	31.0		6.0	29.0		2.9	25.9	
Actuated g/C Ratio	0.10	0.36		0.09	0.35		0.07	0.33		0.03	0.30	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	172	645		170	652		122	590		60	522	
v/s Ratio Prot	c0.07	c0.35		0.05	0.23		c0.06	c0.16		0.02	c0.19	
v/s Ratio Perm												
v/c Ratio	0.67	0.98		0.56	0.65		0.86	0.48		0.70	0.63	
Uniform Delay, d1	38.1	27.7		37.8	23.7		40.3	23.2		41.8	26.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	10.0	29.3		3.9	2.4		42.2	2.8		30.0	5.6	
Delay (s)	48.1	57.1		41.7	26.0		82.5	25.9		71.8	32.2	
Level of Service	D	E		D	C		F	C		E	C	
Approach Delay (s)		55.7			28.9			40.8			36.5	
Approach LOS		E			C			D			D	

Intersection Summary

HCM Average Control Delay	42.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	87.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

1111: 42nd Avenue & SE King Road

6/29/2012



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		W	U	U	W
Volume (veh/h)	95	30	35	485	225	115
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	103	33	38	527	245	125
Pedestrians	12				3	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	1				0	
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage (veh)				2	2	

Milwaukee TSP Appendix F: Traffic Data November, 2013

Unstream signal (ft)			
pX, platoon unblocked			
vC, conflicting volume	925	319	382
vC1, stage 1 conf vol	319		
vC2, stage 2 conf vol	606		
vCu, unblocked vol	925	319	382
tC, single (s)	6.4	6.2	4.1
tC, 2 stage (s)	5.4		
tF (s)	3.5	3.3	2.2
p0 queue free %	78	95	97
cM capacity (veh/h)	479	719	1160

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	136	38	527	370
Volume Left	103	38	0	0
Volume Right	33	0	0	125
cSH	521	1160	1700	1700
Volume to Capacity	0.26	0.03	0.31	0.22
Queue Length 95th (ft)	26	3	0	0
Control Delay (s)	14.3	8.2	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	14.3	0.6		0.0
Approach LOS	B			

Intersection Summary			
Average Delay		2.1	
Intersection Capacity Utilization		39.7%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis

1113: SE Linwood Avenue & SE Monroe Street

6/29/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	35	60	35	15	45	55	35	290	20	40	315	60
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	65	38	16	49	60	38	315	22	43	342	65
Pedestrians		1			5						2	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Unstream signal (ft)											1218	

Milwaukee TSP Appendix F: Traffic Data

November, 2013

pX, platoon unblocked												
vC, conflicting volume	951	881	376	940	903	333	409			342		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	951	881	376	940	903	333	409			342		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	79	76	94	91	81	92	97			96		
cM capacity (veh/h)	178	267	674	178	259	709	1144			1223		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	141	125	375	451
Volume Left	38	16	38	43
Volume Right	38	60	22	65
cSH	275	343	1144	1223
Volume to Capacity	0.51	0.36	0.03	0.04
Queue Length 95th (ft)	68	41	3	3
Control Delay (s)	31.2	21.4	1.1	1.1
Lane LOS	D	C	A	A
Approach Delay (s)	31.2	21.4	1.1	1.1
Approach LOS	D	C		

Intersection Summary

Average Delay	7.3			
Intersection Capacity Utilization	49.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Milwaukie TSP Update

Future Volume Forecasts

Scenario: 2035 PM "Low Build" (Financially Committed)

Date: 6/29/2012 DRAFT

N/S	E/W	#	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
McLoughlin Blvd	Ochoco St	1	0	2000	20	0	3290	220	120	40	200	10	270	160
McLoughlin Blvd	Milport Road	2	280	2020	100	0	3540	20	20	20	270	250	30	20
McLoughlin Blvd	Harrison St	3	20	1120	170	100	2290	20	20	20	20	190	20	10
42nd Avenue	Harrison St	4	20	20	20	10	20	50	240	10	20	10	20	10
McLoughlin Blvd	Washington St	5	10	1050	30	100	2200	10	0	10	10	20	10	140
Main Street	Harrison St	6	20	20	20	20	20	80	70	10	10	20	110	60
17th Avenue	Hwy 224	7	0	20	100	370	20	0	0	0	0	110	0	20
Hwy 224	Harrison St	8	60	1190	250	20	2250	180	90	200	20	310	210	20
Hwy 224	Monroe Street	9	60	1920	10	20	2770	10	20	20	160	20	30	20
Hwy 224	Oak Street	10	200	1470	20	260	2290	260	140	140	110	20	110	180
32nd Avenue	Harrison St	11	40	20	20	20	40	400	420	530	10	20	430	10
McLoughlin Blvd	22nd Ave	12	110	990	0	0	1400	780	0	0	10	0	0	0
McLoughlin Blvd	River Road	13	10	950	0	0	1680	0	310	0	130	0	0	0
Oatfield Rd	Lake Road	14	70	190	180	140	320	10	20	20	90	180	30	70
Hwy 224	37th Ave	15	70	1240	20	220	1870	50	50	90	440	290	270	380
Freeman Way	Hwy 224	16	20	30	10	510	30	140	30	2420	30	10	1450	240
Hwy 224 off/on ramp	Lake Road	17	170	0	160	110	820	10	100	240	100	0	70	120
21st Ave	Harrison St	18	20	10	30	20	10	10	10	140	20	20	150	20
32nd Avenue	Johnson Creek Blvd	19	20	130	30	540	250	0	0	70	90	40	20	360
Linwood Ave	Johnson Creek Blvd	20	140	220	50	180	310	120	140	860	230	10	820	230
Linwood Ave	King Road	21	50	420	150	20	520	20	20	100	50	230	20	20
Linwood Ave	Harmony Rd	22	50	450	1660	270	570	20	40	270	70	1460	310	280



Oregon Department of Transportation

2012 - All SPIS Sites - By Hwy, MP

Region

1

Rte.	Rdwy	BMP	EMP	ADT	Crsh	Fatal	A	B	C	PDO	City	County	Connection in Group	Percentile	SPIS
081 PACIFIC HIGHWAY EAST															
OR-99E	I	4.41	4.50	42,300	14			1	6	7		MULTNOMAH		70	29.50
OR-99E	I	4.42	4.51	42,300	13			1	6	6		MULTNOMAH		70	28.79
OR-99E	I	4.43	4.52	42,300	11			1	6	4		MULTNOMAH		65	27.27
OR-99E	I	4.44	4.53	42,300	11			1	6	4		MULTNOMAH	081BP CONN. (TACOMA)	65	27.27
OR-99E	I	4.45	4.54	42,300	3				1	2		MULTNOMAH			9.66
OR-99E	I	4.66	4.75	42,300	3			1	2			CLACKAMAS		70	27.66
OR-99E	I	4.67	4.76	42,300	4			1	2	1		CLACKAMAS		70	29.19
OR-99E	I	4.68	4.77	42,300	6			1	3	2		CLACKAMAS		80	33.16
OR-99E	I	4.69	4.78	42,300	14			1	1	5	7	CLACKAMAS		90	44.50
OR-99E	I	4.70	4.79	42,300	14			1	1	4	8	CLACKAMAS		90	43.00
OR-99E	I	4.71	4.80	42,300	14			1	1	3	9	CLACKAMAS		85	41.50
OR-99E	I	4.72	4.81	42,300	14			1	1	3	9	CLACKAMAS		85	41.50
OR-99E	I	4.73	4.82	42,300	14			1	1	3	9	CLACKAMAS		85	41.50
OR-99E	I	4.74	4.83	42,300	15			1	1	3	10	CLACKAMAS		85	42.19
OR-99E	I	4.75	4.84	42,300	15			1	1	3	10	CLACKAMAS		85	42.19
OR-99E	I	4.76	4.85	42,300	14				1	3	10	CLACKAMAS		60	25.00
OR-99E	I	4.77	4.86	42,300	13				1	3	9	CLACKAMAS		60	24.29
OR-99E	I	4.78	4.87	42,300	11				1	2	8	CLACKAMAS	ACCESS (DECREASING R	50	21.27
OR-99E	I	4.78	4.87	42,300	11				1	2	8	CLACKAMAS	OCHOCO ST.	50	21.27
OR-99E	I	4.79	4.88	51,100	4						4	CLACKAMAS			9.52
OR-99E	I	4.80	4.89	51,100	3						3	CLACKAMAS			8.04
OR-99E	I	4.91	5.00	51,100	3				1	2		CLACKAMAS			9.54
OR-99E	I	4.92	5.01	51,100	3				1	2		CLACKAMAS			9.54
OR-99E	I	4.93	5.02	51,100	3				1	2		CLACKAMAS			9.54
OR-99E	I	4.94	5.03	51,100	3				1	2		CLACKAMAS			9.54
OR-99E	I	4.95	5.04	51,100	3				1	2		CLACKAMAS			9.54
OR-99E	I	4.96	5.05	51,100	3				1	2		CLACKAMAS			9.54
OR-99E	I	4.97	5.06	51,100	3				1	2		CLACKAMAS			9.54
OR-99E	I	4.98	5.07	51,100	3				1	2		CLACKAMAS			9.54
OR-99E	I	4.99	5.08	51,100	3				1	2		CLACKAMAS			9.54
OR-99E	I	5.08	5.17	51,100	3				1	2		CLACKAMAS		15	12.54
OR-99E	I	5.09	5.18	51,100	5				1	3	1	CLACKAMAS		35	16.79
OR-99E	I	5.10	5.19	51,100	7				1	5	1	CLACKAMAS		55	21.95
OR-99E	I	5.11	5.20	51,100	20	1		2	10	7		CLACKAMAS		95	56.67
OR-99E	I	5.12	5.21	51,100	20	1		2	10	7		CLACKAMAS		95	56.67
OR-99E	I	5.13	5.22	51,100	22	1		2	11	8		CLACKAMAS		95	59.28
OR-99E	I	5.14	5.23	51,100	23	1		2	12	8		CLACKAMAS		95	61.31
OR-99E	I	5.15	5.24	51,100	23	1		2	12	8		CLACKAMAS		95	61.31
OR-99E	I	5.16	5.25	51,100	23	1		2	12	8		CLACKAMAS		95	61.31
OR-99E	I	5.17	5.26	51,100	22	1		2	11	8		CLACKAMAS		95	59.28



Oregon Department of Transportation

2012 - All SPIS Sites - By Hwy, MP

Region

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Rte.	Rdwy	BMP	EMP	ADT	Crsh	Fatal	A	B	C	PDO	City	County	Connection in Group	Percentile	SPIS
081 PACIFIC HIGHWAY EAST															
OR-99E	I	5.18	5.27	51,100	21	1	2	10	8			CLACKAMAS		95	57.23
OR-99E	I	5.19	5.28	51,100	19	1	2	9	7			CLACKAMAS		95	54.61
OR-99E	I	5.20	5.29	51,100	17	1	2	7	7			CLACKAMAS	ACCESS (DECREASING R	90	50.42
OR-99E	I	5.20	5.29	51,100	17	1	2	7	7			CLACKAMAS	SE MILPORT RD.	90	50.42
OR-99E	I	5.21	5.30	39,200	3			2	1			CLACKAMAS		5	11.22
OR-99E	I	5.22	5.31	39,200	3			2	1			CLACKAMAS		5	11.22
OR-99E	I	5.62	5.71	25,100	4		1	2	1			CLACKAMAS		25	14.82
OR-99E	I	5.63	5.72	25,100	23			2	13	8		CLACKAMAS		90	49.48
OR-99E	I	5.64	5.73	25,100	25			3	13	9		CLACKAMAS		90	52.18
OR-99E	I	5.65	5.74	25,100	25			3	13	9		CLACKAMAS		90	52.18
OR-99E	I	5.66	5.75	25,100	25			3	13	9		CLACKAMAS		90	52.18
OR-99E	I	5.67	5.76	25,100	26			4	13	9		CLACKAMAS		95	54.25
OR-99E	I	5.68	5.77	25,100	27			4	13	10		CLACKAMAS		95	54.83
OR-99E	I	5.69	5.78	25,100	28			4	13	11		CLACKAMAS		95	55.40
OR-99E	I	5.70	5.79	25,100	28			4	13	11		CLACKAMAS		95	55.40
OR-99E	I	5.71	5.80	25,100	29			3	13	13		CLACKAMAS		95	54.44
OR-99E	I	5.72	5.81	32,500	27			3	11	13		CLACKAMAS	HWY. 081 M.P. (2)5.72	90	48.89
OR-99E	I	5.72	5.81	32,500	27			3	11	13		CLACKAMAS	17TH AVE.	90	48.89
OR-99E	I	5.73	5.82	32,500	8			2		6		CLACKAMAS		40	17.72
OR-99E	I	5.74	5.83	32,500	7			1		6		CLACKAMAS		30	15.19
OR-99E	I	5.75	5.84	32,500	7			1		6		CLACKAMAS		30	15.19
OR-99E	I	5.76	5.85	32,500	8			1		7		CLACKAMAS		35	16.22
OR-99E	I	5.77	5.86	32,500	7					7		CLACKAMAS	JACKSON ST.	20	13.69
OR-99E	I	5.78	5.87	32,500	5					5		CLACKAMAS		5	11.34
OR-99E	I	5.79	5.88	32,500	4					4		CLACKAMAS			9.97
OR-99E	I	5.80	5.89	32,500	4					4		CLACKAMAS			9.97
OR-99E	I	5.81	5.90	32,500	5				2	3		CLACKAMAS		25	14.34
OR-99E	I	5.82	5.91	32,500	6				2	4		CLACKAMAS		30	15.57
OR-99E	I	5.83	5.92	32,500	6				2	4		CLACKAMAS	SE MONROE ST.	30	15.57
OR-99E	I	5.84	5.93	32,500	9		1		4	4		CLACKAMAS		85	38.18
OR-99E	I	5.85	5.94	32,500	10		1	1	4	4		CLACKAMAS		85	40.60
OR-99E	I	5.86	5.95	32,500	9		1	1	4	3		CLACKAMAS		85	39.68
OR-99E	I	5.87	5.96	32,500	10		1	1	4	4		CLACKAMAS		85	40.60
OR-99E	I	5.88	5.97	32,500	11		1	1	4	5		CLACKAMAS	SE JEFFERSON ST.	85	41.45
OR-99E	I	5.88	5.97	32,500	11		1	1	4	5		CLACKAMAS	ROAD (BOAT LANDING)	85	41.45
OR-99E	I	5.89	5.98	32,500	11		1	1	4	5		CLACKAMAS		85	41.45
OR-99E	I	5.90	5.99	32,500	11		1	1	4	5		CLACKAMAS		85	41.45
OR-99E	I	5.91	6.00	32,500	9		1	1	3	4		CLACKAMAS		85	38.18
OR-99E	I	5.92	6.01	32,500	9		1	1	4	3		CLACKAMAS		85	39.68
OR-99E	I	5.93	6.02	32,500	9		1	1	4	3		CLACKAMAS	WASHINGTON ST.	85	39.68



Oregon Department of Transportation

2012 - All SPIS Sites - By Hwy, MP

Region

1

Rte.	Rdwy	BMP	EMP	ADT	Crsh	Fatal	A	B	C	PDO	City	County	Connection in Group	Percentile	SPIS
081 PACIFIC HIGHWAY EAST															
OR-99E	I	5.94	6.03	32,500	5			1	2	2		CLACKAMAS		30	15.84
OR-99E	I	5.95	6.04	32,500	4				2	2		CLACKAMAS		15	12.97
OR-99E	I	5.96	6.05	32,500	4				2	2		CLACKAMAS		15	12.97
OR-99E	I	5.97	6.06	32,500	3				2	1		CLACKAMAS		5	11.38
OR-99E	I	6.12	6.21	32,500	3				2	1		CLACKAMAS		5	11.38
OR-99E	I	6.13	6.22	32,500	3				2	1		CLACKAMAS		5	11.38
OR-99E	I	6.14	6.23	32,500	3				2	1		CLACKAMAS		5	11.38
OR-99E	I	6.15	6.24	32,500	3				2	1		CLACKAMAS		5	11.38
OR-99E	I	6.16	6.25	32,500	3				2	1		CLACKAMAS		5	11.38
OR-99E	I	6.17	6.26	32,500	3				2	1		CLACKAMAS		5	11.38
OR-99E	I	6.18	6.27	32,500	3				2	1		CLACKAMAS		5	11.38
OR-99E	I	6.21	6.30	32,500	4				3	1		CLACKAMAS	22ND AVE.	25	14.47
OR-99E	I	6.22	6.31	32,500	6				5	1		CLACKAMAS		45	20.07
OR-99E	I	6.23	6.32	32,500	7				6	1		CLACKAMAS		55	22.69
OR-99E	I	6.24	6.33	32,500	8				6	2		CLACKAMAS		60	23.72
OR-99E	I	6.25	6.34	32,500	8				6	2		CLACKAMAS		60	23.72
OR-99E	I	6.26	6.35	32,500	8				6	2		CLACKAMAS		60	23.72
OR-99E	I	6.27	6.36	32,500	8				6	2		CLACKAMAS		60	23.72
OR-99E	I	6.28	6.37	32,500	8				6	2		CLACKAMAS		60	23.72
OR-99E	I	6.29	6.38	32,500	8				6	2		CLACKAMAS		60	23.72
OR-99E	I	6.30	6.39	32,500	8				6	2		CLACKAMAS	BLUE BIRD ST.	60	23.72
OR-99E	I	6.30	6.39	32,500	8				6	2		CLACKAMAS	RIVER RD. (2ND RT.)	60	23.72
OR-99E	I	6.31	6.40	27,100	5				4	1		CLACKAMAS	LEG (FROM RIVER RD.)	40	17.63
OR-99E	I	6.45	6.54	27,100	3				2	1		CLACKAMAS		10	11.57
OR-99E	I	6.46	6.55	27,100	3				2	1		CLACKAMAS		10	11.57
OR-99E	I	6.66	6.75	27,100	3					3		CLACKAMAS			8.57
OR-99E	I	6.67	6.76	27,100	3					3		CLACKAMAS			8.57
OR-99E	I	6.68	6.77	27,100	3					3		CLACKAMAS			8.57
OR-99E	I	6.69	6.78	27,100	3					3		CLACKAMAS			8.57
OR-99E	I	6.70	6.79	27,100	3					3		CLACKAMAS			8.57
OR-99E	I	6.71	6.80	27,100	3					3		CLACKAMAS			8.57
OR-99E	I	6.72	6.81	27,100	5				2	3		CLACKAMAS		25	14.63
OR-99E	I	6.73	6.82	27,100	5				3	2		CLACKAMAS		35	16.13
OR-99E	I	6.74	6.83	27,100	5				3	2		CLACKAMAS		35	16.13
OR-99E	I	6.75	6.84	27,100	5				3	2		CLACKAMAS		35	16.13
OR-99E	I	6.76	6.85	27,100	5				4	1		CLACKAMAS		40	17.63
OR-99E	I	6.77	6.86	27,100	5				4	1		CLACKAMAS		40	17.63
OR-99E	I	6.78	6.87	27,100	10				7	3		CLACKAMAS		70	27.61
OR-99E	I	6.79	6.88	27,100	12				8	4		CLACKAMAS		75	30.86



Oregon Department of Transportation

2012 - All SPIS Sites - By Hwy, MP

Region

1

Rte.	Rdwy	BMP	EMP	ADT	Crsh	Fatal	A	B	C	PDO	City	County	Connection in Group	Percentile	SPIS
161 WOODBURN-ESTACADA															
OR-211	I	33.35	33.44	6,300	3				I	2		CLACKAMAS	S CADONAU RD.	15	13.25
OR-211	I	33.36	33.45	6,300	3				I	2		CLACKAMAS		15	13.25
OR-211	I	33.37	33.46	6,300	3				I	2		CLACKAMAS		15	13.25
OR-211	I	33.39	33.48	6,300	3					3		CLACKAMAS		10	11.75
OR-211	I	33.40	33.49	6,300	9			2	3	4		CLACKAMAS		75	30.51
171 CLACKAMAS															
	I	0.02	0.11	7,800	3					3		CLACKAMAS	LEG (FROM 17TH AVE.)	5	11.03
	I	0.03	0.12	7,800	3					3		CLACKAMAS		5	11.03
	I	0.04	0.13	7,800	3					3		CLACKAMAS		5	11.03
	I	0.05	0.14	7,800	5				I	4		CLACKAMAS		35	16.80
	I	0.06	0.15	7,800	5				I	4		CLACKAMAS		35	16.80
	I	0.07	0.16	7,800	5				I	4		CLACKAMAS		35	16.80
	I	0.08	0.17	7,800	5				I	4		CLACKAMAS		35	16.80
OR-224	I	0.09	0.18	7,800	5				I	4		CLACKAMAS		35	16.80
OR-224	I	0.10	0.19	7,800	4				I	3		CLACKAMAS		25	14.81
OR-224	I	0.11	0.20	7,800	3				I	2		CLACKAMAS		15	12.53
OR-224	I	0.58	0.67	24,800	3				I	2		CLACKAMAS			10.17
OR-224	I	0.59	0.68	24,800	25			5	10	10		CLACKAMAS		90	50.75
OR-224	I	0.60	0.69	24,800	26			5	11	10		CLACKAMAS		90	52.82
OR-224	I	0.61	0.70	24,800	26			5	11	10		CLACKAMAS		90	52.82
OR-224	I	0.62	0.71	24,800	26			5	11	10		CLACKAMAS		90	52.82
OR-224	I	0.63	0.72	24,800	26			5	11	10		CLACKAMAS		90	52.82
OR-224	I	0.64	0.73	24,800	26			5	11	10		CLACKAMAS		90	52.82
OR-224	I	0.65	0.74	24,800	26			5	11	10		CLACKAMAS		90	52.82
OR-224	I	0.66	0.75	24,800	26			5	11	10		CLACKAMAS		90	52.82
OR-224	I	0.67	0.76	24,800	26			5	11	10		CLACKAMAS		90	52.82
OR-224	I	0.68	0.77	24,800	24			6	10	8		CLACKAMAS	171AB CONN. (SE HARRI	90	51.65
OR-224	I	0.69	0.78	24,500	10			2	6	2		CLACKAMAS		70	29.43
OR-224	I	0.70	0.79	24,500	9			2	5	2		CLACKAMAS		65	26.95
OR-224	I	0.71	0.80	24,500	9			2	5	2		CLACKAMAS		65	26.95
OR-224	I	0.72	0.81	24,500	9			2	5	2		CLACKAMAS		65	26.95
OR-224	I	0.73	0.82	24,500	9			2	5	2		CLACKAMAS		65	26.95
OR-224	I	0.74	0.83	24,500	10			3	5	2		CLACKAMAS		70	29.43
OR-224	I	0.75	0.84	24,500	10			3	5	2		CLACKAMAS		70	29.43
OR-224	I	0.76	0.85	24,500	10			3	5	2		CLACKAMAS		70	29.43
OR-224	I	0.77	0.86	24,500	10			3	5	2		CLACKAMAS		70	29.43
OR-224	I	0.78	0.87	24,500	9			2	5	2		CLACKAMAS	171AC CONN. (SE MONRI	65	26.95
OR-224	I	0.82	0.91	25,100	3			I	I	I		CLACKAMAS		10	11.66
OR-224	I	0.83	0.92	25,100	6			I	3	2		CLACKAMAS		45	19.07
OR-224	I	0.84	0.93	25,100	19			2	5	12		CLACKAMAS		80	34.92



Oregon Department of Transportation

2012 - All SPIS Sites - By Hwy, MP

Region

1

Rte.	Rdwy	BMP	EMP	ADT	Crsh	Fatal	A	B	C	PDO	City	County	Connection in Group	Percentile	SPIS
171 CLACKAMAS															
OR-224	I	0.85	0.94	25,100	20			2	5	13		CLACKAMAS		80	35.57
OR-224	I	0.86	0.95	25,100	21			2	5	14		CLACKAMAS		80	36.22
OR-224	I	0.87	0.96	25,100	21			2	5	14		CLACKAMAS		80	36.22
OR-224	I	0.88	0.97	25,100	21			2	5	14		CLACKAMAS		80	36.22
OR-224	I	0.89	0.98	25,100	21			2	4	15		CLACKAMAS		80	34.72
OR-224	I	0.90	0.99	25,100	21			2	4	15		CLACKAMAS		80	34.72
OR-224	I	0.91	1.00	25,100	21			2	4	15		CLACKAMAS		80	34.72
OR-224	I	0.92	1.01	25,100	21			2	4	15		CLACKAMAS		80	34.72
OR-224	I	0.93	1.02	25,100	18			2	2	14		CLACKAMAS	171AD CONN. (OAK ST.)	70	29.73
OR-224	I	0.94	1.03	25,700	4					4		CLACKAMAS			10.29
OR-224	I	0.95	1.04	25,700	3					3		CLACKAMAS			8.63
OR-224	I	1.23	1.32	25,700	8			2	2	4		CLACKAMAS		50	21.29
OR-224	I	1.24	1.33	25,700	8			2	2	4		CLACKAMAS		50	21.29
OR-224	I	1.25	1.34	25,700	8			2	2	4		CLACKAMAS		50	21.29
OR-224	I	1.26	1.35	25,700	8			2	2	4		CLACKAMAS		50	21.29
OR-224	I	1.27	1.36	25,700	8			2	2	4		CLACKAMAS		50	21.29
OR-224	I	1.28	1.37	25,700	8			2	2	4		CLACKAMAS	LEG (FROM 171AE CONN.	50	21.29
OR-224	I	1.29	1.38	25,700	8			2	2	4		CLACKAMAS		50	21.29
OR-224	I	1.30	1.39	25,700	8			2	2	4		CLACKAMAS		50	21.29
OR-224	I	1.31	1.40	25,700	7			2	2	3		CLACKAMAS		45	20.20
OR-224	I	1.32	1.41	25,700	7			2	2	3		CLACKAMAS	171AE CONN. (SE EDISON)	45	20.20
OR-224	I	1.80	1.89	25,700	8			2	3	3		CLACKAMAS		55	22.79
OR-224	I	1.81	1.90	25,700	8			2	3	3		CLACKAMAS		55	22.79
OR-224	I	1.82	1.91	25,700	8			2	3	3		CLACKAMAS		55	22.79
OR-224	I	1.83	1.92	25,700	8			2	3	3		CLACKAMAS		55	22.79
OR-224	I	1.84	1.93	25,700	8			2	3	3		CLACKAMAS		55	22.79
OR-224	I	1.85	1.94	25,700	8			2	3	3		CLACKAMAS		55	22.79
OR-224	I	1.86	1.95	25,700	8			2	3	3		CLACKAMAS		55	22.79
OR-224	I	1.87	1.96	25,700	8			2	3	3		CLACKAMAS		55	22.79
OR-224	I	1.88	1.97	25,700	8			2	3	3		CLACKAMAS		55	22.79
OR-224	I	1.89	1.98	25,700	7			2	3	2		CLACKAMAS	SE FREEMAN WAY	55	21.70
OR-224	I	2.63	2.72	27,300	6			4	2			CLACKAMAS		45	18.90
OR-224	I	2.64	2.73	27,300	7			4	3			CLACKAMAS		45	20.06
OR-224	I	2.65	2.74	27,300	7			4	3			CLACKAMAS		45	20.06
OR-224	I	2.66	2.75	27,300	8		1	4	3			CLACKAMAS		85	37.63
OR-224	I	2.67	2.76	27,300	8		1	4	3			CLACKAMAS		85	37.63
OR-224	I	2.68	2.77	27,300	9		1	4	4			CLACKAMAS		85	38.63
OR-224	I	2.69	2.78	27,300	10		1	4	5			CLACKAMAS	171AI CONN. M.P. 3C2.69	85	39.59
OR-224	I	2.70	2.79	26,900	9		1	4	4			CLACKAMAS		85	38.68
OR-224	I	2.71	2.80	26,900	9		1	4	4			CLACKAMAS		85	38.68



Oregon Department of Transportation

2012 - All SPIS Sites - By Hwy, MP

Region

1

Rte.	Rdwy	BMP	EMP	ADT	Crsh	Fatal	A	B	C	PDO	City	County	Connection in Group	Percentile	SPIS
171 CLACKAMAS															
OR-224	I	2.72	2.81	26,900	9		1	4	4			CLACKAMAS	RUSK RD.	85	38.68
OR-224	I	2.73	2.82	26,900	5		1		4			CLACKAMAS		70	28.14
OR-224	I	2.74	2.83	26,900	4		1		3			CLACKAMAS		65	26.72
OR-224	I	2.75	2.84	26,900	4		1		3			CLACKAMAS		65	26.72
OR-224	I	2.76	2.85	26,900	3					3		CLACKAMAS			8.58
OR-224	I	2.77	2.86	26,900	3					3		CLACKAMAS			8.58
OR-224	I	3.06	3.15	26,900	3				3			CLACKAMAS		15	13.08
OR-224	I	3.07	3.16	26,900	4				3	1		CLACKAMAS		25	14.72
OR-224	I	3.08	3.17	26,900	4				3	1		CLACKAMAS		25	14.72
OR-224	I	3.09	3.18	26,900	4				3	1		CLACKAMAS		25	14.72
OR-224	I	3.10	3.19	26,900	9				6	3		CLACKAMAS		65	25.18
OR-224	I	3.11	3.20	26,900	25		1	2	9	13		CLACKAMAS		95	60.79
OR-224	I	3.12	3.21	26,900	31		2	2	10	17		CLACKAMAS		95	75.91
OR-224	I	3.13	3.22	26,900	32		2	2	11	17		CLACKAMAS		95	76.26
OR-224	I	3.14	3.23	26,900	34		2	2	12	18		CLACKAMAS		95	76.95
OR-224	I	3.15	3.24	26,900	34		2	2	12	18		CLACKAMAS		95	76.95
OR-224	I	3.16	3.25	26,900	33		2	2	11	18		CLACKAMAS		95	76.61
OR-224	I	3.17	3.26	26,900	32		2	2	11	17		CLACKAMAS		95	76.26
OR-224	I	3.18	3.27	26,900	32		2	2	11	17		CLACKAMAS		95	76.26
OR-224	I	3.19	3.28	26,900	32		2	2	11	17		CLACKAMAS		95	76.26
OR-224	I	3.20	3.29	26,900	28		2	2	9	15		CLACKAMAS	LAKE RD.	95	74.81
OR-224	I	3.21	3.30	29,200	11		1		5	5		CLACKAMAS		85	41.76
OR-224	I	3.22	3.31	29,200	5				4	1		CLACKAMAS		40	17.51
OR-224	I	3.23	3.32	29,200	6				4	2		CLACKAMAS		45	18.77
OR-224	I	3.24	3.33	29,200	9				7	2		CLACKAMAS		65	26.45
OR-224	I	3.25	3.34	29,200	9				7	2		CLACKAMAS		65	26.45
OR-224	I	3.26	3.35	29,200	10				7	3		CLACKAMAS		70	27.39
OR-224	I	3.27	3.36	29,200	10				7	3		CLACKAMAS		70	27.39
OR-224	I	3.28	3.37	29,200	10				7	3		CLACKAMAS		70	27.39
OR-224	I	3.29	3.38	29,200	10				7	3		CLACKAMAS		70	27.39
OR-224	I	3.30	3.39	29,200	8				5	3		CLACKAMAS		55	22.46
OR-224	I	3.31	3.40	29,200	8				5	3		CLACKAMAS		55	22.46
OR-224	I	3.32	3.41	29,200	8				5	3		CLACKAMAS		55	22.46
OR-224	I	3.33	3.42	29,200	6				4	2		CLACKAMAS	PHEASANT CT.	45	18.77
OR-224	I	3.60	3.69	35,100	4		1		1	2		CLACKAMAS		70	27.88
OR-224	I	3.61	3.70	35,100	6		1		2	3		CLACKAMAS		75	31.94
OR-224	I	3.62	3.71	35,100	10		1	1	3	5		CLACKAMAS		85	38.90
OR-224	I	3.63	3.72	35,100	10		1	1	3	5		CLACKAMAS		85	38.90
OR-224	I	3.64	3.73	35,100	30		2	3	12	13		CLACKAMAS		95	74.05
OR-224	I	3.65	3.74	35,100	32		2	3	13	14		CLACKAMAS		95	74.70
OR-224	I	3.66	3.75	35,100	37		2	4	15	16		CLACKAMAS		95	76.24

Explanation of Proposed TSP Amendments

(for public review draft made available August 20, 2013)

GENERAL NOTES

- The current draft is presented in ~~strikeout~~/underline format. The starting point is text and figures/tables from the current (2007) TSP. Text to be deleted is struck out; text to be added is underlined.
- Project lists:
 - o Master Plan lists were reorganized to group projects according to priority (High, Medium, or Low).
 - o Action Plan lists were amended to include map reference numbers (where applicable) and project costs.
 - o Projects that have been completed or that are very near completion have been removed from project lists.
- Project costs:
 - o Project costs are order of magnitude estimates. More detailed cost estimates will be developed as projects move closer to implementation.
 - o Project costs have been adjusted for inflation from 2007 dollars to 2012 dollars, using info from the U.S. Bureau of Labor Statistics for the Consumer Price Index (CPI). New info on the CPI for the first half of 2013 should be available as of mid-August and may be used to further update project costs to 2013 dollars.
 - o Project costs were rounded using the following principles: (1) if under \$1 million, round to nearest \$10,000; (2) if over \$1 million, round to nearest \$100,000; (3) if over \$10 million, round to nearest \$1 million; (4) if a cost ends in 5 or higher, round up, if under 5, round down.
- Figures:
 - o Two copies were created for every full-page map or chart figure: (1) an **original 2007 figure** with notes that highlight revisions made to the figure, and (2) an **updated 2013 figure** that includes those revisions.
 - Refer to the notated 2007 figure for descriptions of all changes.
 - Refer for the updated 2013 figure for a clear and complete view of the new figure.
 - o Some figures received only minor modifications to data, like updated city boundaries or street alignments.
 - o The following figures are new to the 2013 version of the TSP:
 - Figure 5-1b Pedestrian Master Plan – Downtown Inset
 - Figures 6-1, 6-2, 6-3, 6-4, 6-6, and 6-7
New images showing different types of bike facilities and traffic calming measures
 - Figure 6-8b Bicycle Master Plan – Downtown Inset
 - Figure 8-2b PM Peak Corridor Capacity Assessment (Volume/Capacity)
 - Figures 13-1, 13-2, and 13-3
Pie charts showing projected revenue, costs, and spending distribution
 - o The Portland-Milwaukie Light Rail and the Trolley Trail are represented as existing conditions on all figures. Both will still be under construction when the 2013 TSP revision is published, but the final alignment has been determined.

CHAPTER 1 – EXECUTIVE SUMMARY

- Various sections updated to include the rationale and purpose for the 2013 update of the TSP.
- Most of the key recommendations for each mode remain the same, with a few minor edits.
- Most figures are duplicates of the master plan maps in other chapters and were updated accordingly.

CHAPTER 2 – GOALS AND POLICIES

- No substantial changes are proposed to the goals and policies—only one small addition to Goal 5, Policy a.

CHAPTER 3 – EXISTING CONDITIONS

- Includes adjustments to the text, figures, and tables as needed to accurately portray the current conditions.
- As a result of properties annexing into the city in areas that are poorly served by transit, the portion of Milwaukie land area that is greater than ¼ mile walking distance to the nearest bus stop has increased slightly (from 13% to 15%).
- Some categories of parking types have changed. The long-term on-street category was removed because long-term parking is considered 4 hours or greater, but no on-street parking currently exists that allows parking for more than 4 hours.

CHAPTER 4 – FUTURE FORECASTING PROCESS

- The forecasts in this chapter have been updated to shift the TSP’s forecast horizon from the year 2030 to 2035.

CHAPTER 5 – PEDESTRIAN ELEMENT

- Changes to proposed projects and priorities, influenced by public input and staff assessment, as well as Tacoma Station Area Plan and downtown light rail station area projects.
- Downtown inset map shows more detail.

CHAPTER 6 – BICYCLE ELEMENT

- Changes to proposed projects and priorities, influenced by public input and staff assessment, as well as Tacoma Station Area Plan and downtown light rail station area projects.
- “Bike Boulevard” concept has been renamed “Neighborhood Greenways” to acknowledge the multi-modal benefits of bike boulevard improvements, for traffic calming and pedestrian safety.
- “Cycle Tracks” have been added as a potential facility design for consideration.
- Images of each type of bicycle facility design have been included for clarification.
- Downtown inset map shows more detail.

CHAPTER 7 – PUBLIC TRANSIT ELEMENT

- New proposed bus services, including a Downtown Loop Bus and a Neighborhood Loop Bus.

CHAPTER 8 – STREET NETWORK ELEMENT

- Changed the name of this chapter from “Auto Street Network” to “Street Network” for readability.
- Forecasts in this chapter have been updated to shift the TSP’s forecast horizon from the year 2030 to 2035.
- Figure showing Functional Classifications (Figure 8-1) was moved forward from its former location to the place where it is first referenced in the text. Figure 8-1 was updated to show only existing classifications because there are no proposals to change the classification of any streets.
- Several figures were renumbered for clarification and simplicity.
- Two intersections were added for study since 2007: King/42nd and Monroe/Linwood.

CHAPTER 9 – FREIGHT ELEMENT

- Minor changes to reflect completed or newly proposed projects.

CHAPTER 10 – STREET DESIGN ELEMENT

- No proposed changes.

CHAPTER 11 – NEIGHBORHOOD TRAFFIC MANAGEMENT ELEMENT

- Very minor changes to update wording and more accurately portray traffic management process.
- Renamed the “Neighborhood Pedestrian and Traffic Safety Program” as “Walk Safely Milwaukie Program.”

CHAPTER 12 – DOWNTOWN PARKING

- Edited to document changes in downtown parking management practices since 2007:
 - Finance Department responsibility for parking permit program
 - Identification of need for Residential Parking Permit program and steps to implement
- Future projections of parking demand and supply were removed, as they only forecasted to 2013.
- Figure 12 -1 Preferred Parking Locations map was updated for clarity and accuracy.
- Policy recommendations were edited to reflect emphasis on Residential Permit Program and Downtown Parking Management system.
- Removed the following recommendations that have been executed since 2007:
 - Improve/streamline the process for purchasing permits (completed 2007)
 - Strengthen Move-to-Evade enforcement policy (completed 2009)

CHAPTER 13 – FUNDING AND IMPLEMENTATION PLAN

- A Consolidated Action Plan (Table 13-3) has been added to present all of the projects identified as top priorities from the Action Plan lists for the various modes.
- Within the Prioritized Master Plan Project List (Table 13-4), projects have been reorganized and updated by High-Medium-Low priority and the project costs have been updated to 2012 dollars.

CHAPTER 14 – TRANSPORTATION PLANNING RULE IMPLEMENTATION

- Removed recommended changes to Milwaukie Municipal Code that have been completed.
- No new code changes are proposed as part of the 2013 TSP Update.

APPENDICES

- No changes to Appendices A-E.
- Appendix F (Traffic Data):
 - o Metro Model Data Output removed where required by new confidentiality policy (pages F-1 to F-6).
 - o Added or replaced new study intersection data as applicable (pages F-61, F-77, F-78, F-121, F-123, F-124).
 - o Added 2035 PM Low-Build (Financially Committed) Future Volume Forecasts table (page F-125).
 - o Replaced SPIS (Safety Priority Index System) data for ODOT roadways Highway 224 and 99E (pages F-149 to F-154).
- New = Appendix G (NDA Information)
 - o In response to public suggestion for information relevant to each Neighborhood District Association (NDA), maps were created to show NDA boundaries on the following master plan figures:
 - Pedestrian Master Plan
 - Bicycle Master Plan
 - Public Transit Master Plan
 - Street Network Master Plan
 - Freight Master Plan

Maps with NDA boundaries can be used to identify all projects that affect a specific neighborhood and facilitate discussion about neighborhood transportation priorities.

ATTACHMENT 3

Proposed Changes to Project Priorities

2013 TSP Update

During the process of updating the various TSP project lists there were 5 types of possible actions to take on specific projects:

1. **Elevate Project Priority** = Some projects have risen in priority since 2007, based on public comment/suggestion as well as staff's evaluation of how the project fits into the larger transportation system.
2. **Reduce Project Priority** = Some projects have fallen in priority since 2007, based on public comment/suggestion as well as staff's evaluation of how the project fits into the larger transportation system.
3. **Maintain Project Priority (Despite Suggestion)** = For some projects, a change in priority was suggested but, after evaluation by staff, the current priority is proposed to remain unchanged (rationale provided below). These proposals would not normally show up in the strikeout/underline version of the proposed document, so they are outlined in Table 3 for full disclosure.
4. **Add New Project** = New projects were assigned a priority based on any public comment/suggestion as well as staff's evaluation of how the project fits into the larger transportation system.
5. **Remove Project** = Projects that have either been completed since 2007 (or are very close right now) or are no longer deemed necessary to improve the transportation system.

Summary

- Total number of projects listed in 2007 TSP (not including items in Regional Projects list) = 128
- Number of projects with public suggestion to change priority = 47
 - o Number of projects recommended to be elevated in priority = 19
 - o Number of projects recommended to be reduced in priority = 9
 - o Number of projects to maintain same priority despite suggestion = 19
- Number of new projects = 28 (*including 17 TSAP projects*)
- Number of deleted projects = 20

The following 5 tables list the various types of projects described above and provide some rationale for the staff recommendation.

Table 1 – Elevate Project Priority

Ref. #	Project	TSP Chapter(s)	2007 Priority	Public Proposed Priority	Staff Proposal	Rationale for Staff Recommendation
1-1	Harmony Rd Sidewalks (Linwood Ave to City Limits)	Pedestrian	Low	Med or High	High	Elevate to High = While there are still many questions to be answered regarding vehicular improvements in this area, the need for sidewalks should be made a priority.
1-2	Hwy 224 Intersection Improvements at Oak St	Pedestrian	Low	High	High	Elevate to High = Improvement of crossings of Hwy 224 is critical to improving safety/usability of pedestrian routes.
1-3	Hwy 224 Intersection Improvements at Monroe St	Pedestrian	Low	High	High	Elevate to High = Improvement of crossings of Hwy 224 is critical to improving safety/usability of pedestrian routes.
1-4	Hwy 224 Intersection Improvements at Harrison St (<i>includes suggestion for pedestrian over-crossing of Hwy 224 at Harrison St</i>)	Pedestrian	Low	High	High	Elevate to High = Improvement of crossings of Hwy 224 is critical to improving safety/usability of pedestrian routes. Change is consistent with High ranking of Freight project to grade-separate Harrison St from railroad tracks, which would require grade separating at Hwy 224 as well, providing an improved pedestrian facility.
1-5	Intersection Improvements of all Hwy 224 crossings (x5)	Pedestrian	Low	High	High	Elevate to High = Improvement of crossings of Hwy 224 is critical to improving safety/usability of pedestrian routes.

Table 1 – Elevate Project Priority

Ref. #	Project	TSP Chapter(s)	2007 Priority	Public Proposed Priority	Staff Proposal	Rationale for Staff Recommendation
1-6	River Rd Sidewalks	Pedestrian	Low	High	High	Elevate to High = With the Trolley Trail and light rail coming online, this project has increased in importance for making safe connections.
1-7	43 rd Ave Sidewalks	Pedestrian	Low	Med or High	High	Elevate to High = Important connection of residential area (including multi-family units) to commercial area (King Rd Shopping Center); would add to new sidewalk section constructed in 2010.
1-8	Intersection Curb Ramp Improvements	Pedestrian	Low	Med	High	Elevate to High = Enhancing curb ramps is critical to improving the existing sidewalk network and complying with ADA
1-9	International Way Sidewalks	Pedestrian	Low	High	High	Elevate to High = Sidewalks on at least one side of the street are a priority for improving the network in this area.
1-10	Kronberg Park Trail	Pedestrian & Bicycle	Low	High	High	Elevate to High = Construction of ped-bike bridge w/ light rail makes this connection more timely and critical, and modifies the original project concept.
1-11	Stanley Ave Neighborhood Greenway	Bicycle	Med	High	High	Elevate to High = Route is an important north-south connector; multi-modal focus; connection to Springwater Trail and bike lanes on King Rd.
1-12	Intersection Improvements at Linwood Ave & Monroe St	Bicycle	Low	Med	High	Elevate to High = In conjunction with Neighborhood Greenway project, improving this intersection is critical for making the link into Clackamas County.
1-13	Lake Rd Bike Lanes	Bicycle	Low	High	High	Elevate to High = Filling in gaps improves the connection to the new light rail station downtown.
1-14	Bicycle-friendly Street Grates	Bicycle	Low	High	High	Elevate to High = Should be a normal part of City Street crew's standard operations until there are no longer safety concerns with that aspect.
1-15	Stanley Ave Connectivity at King Rd	Street	Low	High	High	Elevate to High = The crossing of King Rd is a key element of making the Stanley Ave Neighborhood Greenway work for multiple modes.
1-16	Stanley Ave Connectivity at Monroe St	Street	Low	High	High	Elevate to High = Enhancing this intersection is key to the Neighborhood Greenways on Monroe and Stanley.
1-17	Milwaukie Transportation Management Association Program	Transit	Low	n/a	High	Elevate to High = This program would address some downtown parking issues. (Staff suggestion)

Table 1 – Elevate Project Priority

Ref. #	Project	TSP Chapter(s)	2007 Priority	Public Proposed Priority	Staff Proposal	Rationale for Staff Recommendation
1-18	Bike-Ped Overpass at Railroad Ave to International Way	Pedestrian & Bicycle	Low	Med or High	Med	Elevate to Medium = Especially if ped/bike/transit improvements happen on Railroad Ave, it will be important to provide better connectivity to International Way employment area.
1-19	Oatfield Rd Bike Lanes	Bicycle	Low	High	Med	Elevate to Medium = Filling in gaps improves the connection to new Lake Rd facilities and downtown.

Table 2 – Reduce Project Priority

Ref. #	Project	TSP Chapter(s)	2007 Priority	Public Proposed Priority	Staff Proposal	Rationale for Staff Recommendation
2-1	King Rd Boulevard Treatments (42 nd Ave to Linwood Ave)	Pedestrian	High	Low	Med	Reduce to Medium = Much of King Rd already has sidewalks and there are other important streets that don't have sidewalks and need them. However, King Rd is a major transit route and many of the existing sidewalks do not meet ADA standards, which limits the usefulness of King Rd as a connector to transit.
2-2	Logus Rd Sidewalks (43 rd Ave to 49 th Ave)	Pedestrian	High	Low	Med	Reduce to Medium = Sidewalks were constructed on Logus Rd between 49 th Ave and Stanley Ave in 2009. It is still important to fill in more sidewalk gaps along this school route, but perhaps not before building sidewalks at other key locations.
2-3	Downtown Streetscape Improvements	Pedestrian	High	Low	Med	Reduce to Medium = Perhaps not as pressing a need as some other pedestrian projects, but still important as part of the overall effort to improve downtown.
2-4	Springwater Trail Completion ("Sellwood Gap")	Pedestrian and Bike	High	Med	Med	Reduce to Medium = Continue to support Portland's efforts to close the gap, but not a top priority for the bike system since the Springwater connection through Sellwood neighborhood works.
2-5	Franklin St Sidewalks (42 nd Ave to 45 th Ave)	Pedestrian	Med	Low	Low	Reduce to Low = With the closure of Campbell Elementary, this project is not as critical for making a safer school connection.
2-6	Pedestrian Walkway Signage	Pedestrian	Med	Low	Low	Reduce to Low = Providing signage is not as critical as actually building sidewalks in various key locations.
2-7	Intersection Improvements at 42 nd Ave & Harrison St	Street	Medium	Low	Low	Reduce to Low = Updated data shows an improved forecast for intersection's Level of Service in 2035.
2-8	Railroad Ave Capacity Improvements	Street	High	Low	Low	Reduce to Low = Other improvements to Railroad Ave remain high (resurfacing, ped/bike facilities, bus line) but capacity improvements (i.e., widening to 3 or more lanes) are not a high priority due to relatively low congestion on this road.
2-9	Downtown Parking Signage	Parking	Medium	Low	Low	Reduce to Low = Project is not as important as making physical improvements to existing parking areas and the downtown streetscape.

Table 3 – Maintain Project Priority (Despite Suggestion)

Ref. #	Project	TSP Chapter(s)	2007 Priority	Public Proposed Priority	Staff Proposal	Rationale for Staff Recommendation
3-1	McLoughlin Blvd Sidewalks (especially Kronberg Park to Washington St)	Pedestrian	Med	High	Med	Keep as Medium = Not critical, since Trolley Trail on west side of McLoughlin provides an alternative. Project potential becomes much higher with reconstruction of the Kellogg Bridge on McLoughlin Blvd.
3-2	29 th Ave/Harvey St/40 th Ave Neighborhood Greenway	Bike	High	High	High	No change = Participants in the June 3 public meeting suggested promoting this project to "High" status because it was a significant vote-getter in the earlier part of the meeting. After the meeting, staff verified that this project is already a "High" priority project in the current TSP.
3-3	Lake Rd Sidewalks (fill gaps to Oatfield Rd, to Freeman Way)	Pedestrian	Med	High	Med	Keep as Medium = Adding to the network of recent improvements on Lake Rd is important but not as critical as other projects.
3-4	Intersection Improvements at Harrison St & Hwy 224	Street	Med	High	Med	Keep as Medium = No significant change in intersection function since 2007.
3-5	Public Parking Structure (downtown)	Parking	Med	High	Med	Keep as Medium = There is an ongoing discussion about downtown parking and impacts from light rail. More information and study of the issue (including coordination with South Downtown planning) is needed before moving forward on this project. Other Parking projects could be implemented first (for less money) to improve usage of existing parking.
3-6	Linwood/Flavel Bus Service	Transit	Low	Med	Low	Keep as Low = As long as Linwood Ave sidewalks remain a Low priority, it does not seem critical to increase bus service in an area that is not identified as "transportation disadvantaged").
3-7	Monroe St Neighborhood Greenway	Bike	High	Med	High	Keep as High = Critical east-west connector through Milwaukie; multi-modal focus; opportunity to partner w/ Clackamas County on east end; connection to light rail downtown.
3-8	Downtown Public Parking Lot Improvements	Parking	Med	Low	Med	Keep as Medium = Proposed improvements would enable greater use of existing facilities prior to building new facilities.
3-9	Pedestrian Walkway Amenities	Pedestrian	Med	Low	Med	Keep as Medium = Amenities along key walking routes enhance their usability.
3-10	Most Bicycle & Transit projects	Bicycle & Transit	Varies by Project	Low	Varies by Project	No changes in response = It is important to set priorities within each mode, to identify the most important components to improve first. How much or whether bicycle and transit projects are funded compared to projects for other modes is to be determined by City Council.

Table 3 – Maintain Project Priority (Despite Suggestion)

Ref. #	Project	TSP Chapter(s)	2007 Priority	Public Proposed Priority	Staff Proposal	Rationale for Staff Recommendation
3-11	McLoughlin Blvd Intersection Improvements at 17 th Ave	Street	Med	(Remove)	Med	Keep as Medium = No significant change in intersection function since 2007.
3-12	Harrison St Capacity Improvements (32 nd Ave to 42 nd Ave)	Street	Med	(Remove)	Med	Keep as Medium = Harrison St is classified as an Arterial and should be improved to a higher standard. The City's Street Design standards provide some flexibility for how Harrison St could be improved.
3-13	Johnson Creek Blvd and 42 nd Ave Signalization	Street	Low	(Remove)	Low	Keep as Low = The neighborhood does not want a signal, but a signal is warranted and this project should remain on the list, at least until we see how traffic is affected by light rail.
3-14	Traffic Calming on King Rd* (36 th Ave to 42 nd Ave)	--	--	(need)	Do not add	Do not add to TSP = Should be a project considered by Walk Safely Milwaukie program.
3-15	Traffic Calming improvements on River Rd at Lark St (e.g., permanent speed-warning sign and/or roundabout)	--	--	(need)	Do not add	Do not add to TSP = Should be a project considered by Walk Safely Milwaukie program.
3-16	Signage Redirecting Traffic to Downtown via Hwy 224 & 17 th Ave	--	--	(need)	Do not add	Do not add to TSP = ODOT has control over signage along Hwy 224.
3-17	Seismic upgrades to City bridges	--	--	(need)	Do not add	Do not add to TSP = ODOT conducts regular inspections of the various bridges and will identify issues or concerns that can be added as specific projects as needed.
3-18	Bike-Ped connection to Lake Oswego (using existing trestle bridge)	--	--	(need)	Do not add	Project is already listed in TSP as Regional Project (as Tillamook Branch Trestle Trail Study)
3-19	TSAP = Connection from 29 th Ave bike route to Springwater Corridor	--	--	(need)	Do not add	No new project = The need is already represented by Neighborhood Greenway project for 29 th Ave, a High priority.

Table 4 – Add Project

Ref. #	Project	TSP Chapter	Public Proposed Priority	Staff Proposed Priority	Rationale for Addition
4-1	TSAP = Stairs/improved connection from Springwater Corridor to PMLR station	Pedestrian & Bicycle	High	High	Add as High = Important connection to make to new Tacoma Station for light rail.
4-2	TSAP = Improvements to access at Springwater Corridor to connect to west end of Sherrett St (paving)	Pedestrian & Bicycle	High	High	Add as High = Improving the existing neighborhood connection to Springwater Corridor is critical.
4-3	TSAP = Improved connection from Springwater Corridor to Pendleton site (long ramps from each side)	Pedestrian & Bicycle	High	High	Add as High = Preferred alternative (of 3 options) in Tacoma Station Area Plan.
4-4	TSAP = Improved connection from Springwater Corridor to Pendleton site (widened trail undercrossing)	Pedestrian & Bicycle	--	High	Add as High = Another alternative for connecting to Pendleton site (with 2 other options).
4-5	Intersection Improvements at McLoughlin Blvd & 22 nd Ave	Pedestrian & Bicycle	High	High	Add as High = New project to address safety concerns that will be aggravated when light rail bridge and Trolley Trail are completed.
4-6	Kellogg Creek Bike-Ped Bridge	Pedestrian & Bicycle	--	High	Add as High = Critical to provide a connection to the downtown light rail station from south side of Kellogg creek (Kronberg Park).
4-7	Downtown Loop Bus (to Park Ave & Tacoma St PMLR stations) <i>(includes connecting Southgate Park & Ride with Tacoma Station)</i>	Transit	High	High	Add as High = Public meetings showed strong support for the idea of establishing this kind of local transit service.
4-8	Neighborhood Loop Bus (eastern neighborhoods to downtown)	Transit	High	High	Add as High = Public meetings showed strong support for the idea of establishing this kind of local transit service.
4-9	Railroad Avenue bus service to Clackamas Town Center and points further east	Transit	--	High	Add as High = Separate this project from street-widening project on Railroad Ave and add to list of transit projects. ¹
4-10	TSAP = Truck signage and intersection improvements at Ochoco St	Freight	High	High	Add as High = Ochoco St provides a key connection to McLoughlin Blvd within the Tacoma Station.
4-11	TSAP = Improvements to Main St	Pedestrian & Bicycle	High	Med	Add as Medium= Important to make safe connections from downtown to new Tacoma Station, but existing facilities make it not critical.

¹ Railroad Ave Improvements – The Street project to widen Railroad Ave to 3 lanes has been removed because it is not clear that a center turn lane is warranted. However, projects to provide pedestrian and bicycle facilities remain on the list. The SSMP-funded resurfacing/rebuilding of Railroad Ave is still scheduled to happen by summer 2015.

Table 4 – Add Project

Ref. #	Project	TSP Chapter	Public Proposed Priority	Staff Proposed Priority	Rationale for Addition
4-12	TSAP ² = Improved connection from Springwater Corridor to McLoughlin	Pedestrian & Bicycle	High ³	Med	Add as Medium= Important to improve the connection to Springwater Corridor, but not as critical with existing path available.
4-13	TSAP = Ped/bike safety & crossing improvements at Ochoco St and Milport Rd with McLoughlin Blvd (full intersection improvements)	Pedestrian & Bicycle	High	Med	Add as Medium= Multi-modal crossing improvements are important but not as high a priority as other ped-bike projects.
4-14	TSAP = Improve bike/ped connections from and within neighborhood to the west along Ochoco St & Milport Rd	Pedestrian & Bicycle	High	Med	Add as Medium = These connections will become more important as the Tacoma Station Area redevelops.
4-15	TSAP = Bike/ped connection from eastern neighborhoods	Pedestrian & Bicycle	High	Med	Add as Medium = Will be important to make a better connection to Tacoma Station Area as the area redevelops, but initially, other project to improve the existing connection to Tacoma Station via Springwater Corridor are more important.
4-16	International Way Bike Facilities = Bikeways and signage connecting downtown core with International Way business park	Bicycle	--	Med	Add as Medium = Bike lanes could provide useful connection in area underserved with bike facilities that has many employers. Signage plan already includes signs on International Way.
4-17	TSAP = Pedestrian overcrossings of McLoughlin Blvd (Umatilla St)	Pedestrian & Bicycle	High	Low	Add as Low = Umatilla crossing is in Portland; not critical and can be offset by other projects to improve facilities.
4-18	TSAP = Additional local street connections	Street	--	Low	Add as Low = These connections will become more important as the Tacoma Station Area redevelops.
4-19	TSAP = Future Portland Bike Share station and car share spaces at PMLR station	Regional Projects	--	Low	Add as Low = Important to support these efforts, but the proposed Bike Share station is in Portland and other projects are more important.
4-20	TSAP = Construct bike-ped bridge over Johnson Creek along Clatsop Street at 23 rd Ave	Pedestrian & Bicycle	High	Low	Add as Low = This project would significantly improve connection to Tacoma Station Area for neighborhoods to the west and north, but making other new connections on higher volume travel routes are more important.
4-21	TSAP = Bike/ped connection between McLoughlin Blvd and west end of Stubb St	Pedestrian & Bicycle	--	Low	Add as Low = Useful connection to improve bike/ped facilities in station area, but other routes with higher volumes of riders and pedestrians are higher priorities.
4-22	TSAP = Local street improvements to Stubb, Beta, Ochoco, Hanna Harvester, and Mailwell	Street	--	Low	Add as Low = These improvements will become more important as the Tacoma Station Area redevelops.

² TSAP = Tacoma Station Area Plan, adopted by City Council in July 2013. The TSAP included a list of proposed transportation improvement projects.

³ For TSAP projects, the TSAP Advisory Committee recommended whether a project should be considered a high priority or just a need.

Table 4 – Add Project

Ref. #	Project	TSP Chapter	Public Proposed Priority	Staff Proposed Priority	Rationale for Addition
4-23	TSAP = Improved connection from Springwater Corridor to Pendleton site (tunnel under trail)	Pedestrian & Bicycle	--	Low	Add as Low = Third alternative (most costly) for connecting to Pendleton site.
4-24	Intersection improvements to all crossings of McLoughlin Boulevard	Pedestrian	--	Low	Add as Low = Existing crossings are adequate but could be improved; some of the need for improvement is addressed with proposed new undercrossing at Kellogg Creek.
4-25	Bike-Ped path on Sparrow St, connecting River Rd east to Trolley Trail	Pedestrian & Bicycle	Med	Low	Add as Low = Important to improve connectivity to Trolley Trail, but other projects in this area are more critical.
4-26	Intersection Improvements at McLoughlin Blvd & Washington St	Pedestrian	High	Low	Add as Low, as one project to improve all McLoughlin intersection crossings = Improve safety of existing crossing (time to cross, visibility). Important, but a new undercrossing (with replacement of Kellogg Creek bridge) makes it not as critical as other projects.
4-27	Bike-Ped Overpass over McLoughlin Blvd (connecting River Rd with downtown)	Pedestrian & Bicycle	High	Low	Add as Low = Existing crosswalk at River Rd will provide an at-grade connection to Kronberg Park.
4-28	Intersection Improvements at 42 nd Ave & King Rd	Street	Med	Low	Add as Low = Intersection was improved with small CIP project in 2007-08.

Table 5 – Delete Project

Ref. #	Project	TSP Chapter(s)	2007 Priority	Rationale for Deletion
5-1	Bike Route Signage	Bike	High	Project completed
5-2	Railroad Crossing Improvements at Harrison	Freight	High	Project completed
5-3	Railroad Crossing Safety and Quiet Zone Project	Pedestrian & Street	Med & High	Project completed
5-4	Railroad Crossing Improvements at 21 st and Adams	Freight	Med	Project completed
5-5	Railroad Crossing Improvements at Monroe	Freight	Med	Project completed
5-6	Railroad Crossing Improvements at Washington	Freight	Med	Project completed
5-7	Railroad Crossing Improvements at Oak	Freight	Med	Project completed
5-8	Main Street Bike Lanes	Bicycle	Med	Project proposal changed based on findings of Tacoma Station Area Plan. Bike lanes are not likely to be feasible, but a multi-use path that runs along Main St has been proposed as a replacement.
5-9	Railroad Crossing Pedestrian Improvements at Oak	Pedestrian	Med	Project completed
5-10	Springwater Trail Paving Project	Bicycle	Med	Project completed
5-11	Intersection Improvements at Harmony and Lake	Pedestrian	Low	The intersection is under Clackamas County jurisdiction; local community does not support rebuilding the intersection at this time; project for major intersection improvements is on Regional Projects list. ⁴
5-12	Intersection Improvements at Linwood and Harmony	Bicycle	Low	The intersection is under Clackamas County jurisdiction; local community does not support rebuilding the intersection at this time; project for major intersection improvements is on Regional Projects list. ⁴
5-13	Harmony Road Grade Separation and Realignment at Linwood	Street & Freight	Low	The intersection is under Clackamas County jurisdiction; local community does not support rebuilding the intersection at this time; project for major intersection improvements is on Regional Projects list. ⁴
5-14	Springwater Trail Ramp Improvement at McLoughlin	Pedestrian	Low	Project deleted and replaced by more specific package of proposed improvements from Tacoma Station Area Plan.
5-15	Trolley Trail Signage	Bicycle	Low	Project completed
5-16	Intersection Improvements at Adams and 21 st	Bicycle	Low	Light rail construction is scheduled to improve this intersection.
5-17	21 st Ave Bike Lanes	Bicycle	Low	With light rail construction, bike lanes are not feasible or safe on 21 st Ave; shared sidewalk facility on east side provides some alternative; westbound bike traffic will also be directed onto Main St from Lake Rd.

⁴ Projects for improvements on roads leading up to the intersection (on Harmony, Railroad, Linwood) remain on the list. Those projects will improve the intersection crossings where appropriate (e.g., for pedestrians, for bicycles).

Table 5 – Delete Project

Ref. #	Project	TSP Chapter(s)	2007 Priority	Rationale for Deletion
5-18	Milwaukie Light Rail Extension or High Capacity Transit Improvements	Transit	--	Project in progress and nearly complete
5-19	Portland Traction Company Multiuse Trail (Trolley Trail)	Regional Projects	--	Project nearly complete
5-20	Tualatin-Portland Commuter Rail Extension Study	Transit	Low	Move this project from Transit chapter to list of Regional Projects.