AMENDED AGENDA

WILSONVILLE CITY COUNCIL MEETING
SEPTEMBER 6, 2012
7:00 P.M.

CITY HALL
29799 SW TOWN CENTER LOOP
WILSONVILLE, OREGON

Mayor Tim Knapp

Council President Celia Núñez | Councilor Richard Goddard

Councilor Scott Starr

CITY COUNCIL MISSION STATEMENT

To protect and enhance Wilsonville's livability by providing quality service to ensure a safe, attractive, economically vital community while preserving our natural environment and heritage.

Executive Session is held in the Willamette River Room, City Hall, 2nd Floor

5:30pm
~~5:00~~ P.M. **EXECUTIVE SESSION** [20 min.]
A. Pursuant to ORS 192.660(2)(d) Labor Negotiation

5:15 P.M. **COUNCILORS' CONCERNS** [5 min.]

5:25 P.M. **PRE-COUNCIL WORK SESSION**

A. Basalt Creek Transportation (Neamtzu) [30 min]
B. Transit Fare Increase (Allen) [20 min]
C. Schedule joint meeting with Planning Commission/CCI [5 min.]
D. City Manager Recap [2 min.]

only for the reg. mtg.

6:55 P.M. **ADJOURN**

CITY COUNCIL MEETING

The following is a summary of the legislative and other matters to come before the Wilsonville City Council a special session to be held Thursday, September 6, 2012 at City Hall. Legislative matters must have been filed in the office of the City Recorder by 10 a.m. on, 2012. Remonstrances and other documents pertaining to any matters listed in said summary filed at or prior to the time of the meeting may be considered therewith except where a time limit for filing has been fixed.

7:00 P.M. CALL TO ORDER

A. Roll Call
B. Pledge of Allegiance
C. Motion to approve the following order of the agenda and to remove items from the consent agenda.

7:05 P.M. MAYOR'S BUSINESS

A. Upcoming Meetings

7:10 P.M. COMMUNICATIONS

A. OIT President (staff – Brown)

7:20 P.M. CITIZEN INPUT & COMMUNITY ANNOUNCEMENTS

This is an opportunity for visitors to address the City Council on items ***not*** on the agenda. It is also the time to address items that are on the agenda but not scheduled for a public hearing. Staff and the City Council will make every effort to respond to questions raised during citizens input before tonight's meeting ends or as quickly as possible thereafter. Please limit your comments to three minutes.

7:25 P.M. COUNCILOR COMMENTS, LIAISON REPORTS & MEETING ANNOUNCEMENTS

A. Council President Núñez – Chamber Leadership and Library Board liaison
B. Councilor Goddard – Library, Chamber Board, and Clackamas County Business Alliance liaison
C. Councilor Starr –Development Review Boards and Wilsonville Community Seniors Inc. liaison

7:30 P.M. CONSENT AGENDA

A. Minutes from the August 6, 2012 City Council meeting. (staff – King)

7:30 P.M. NEW BUSINESS

A. **Resolution No. 2379**
A Resolution Adopting Collective Bargaining Agreements Between The City Of Wilsonville And SEIU Local 503 And Between The City Of Wilsonville And Wilsonville Municipal Employee Association (WILMEA). (staff – Troha)

7:45 P.M. CONTINUING BUSINESS

A. **Ordinance No. 707** – Second reading
An Ordinance Of The City Of Wilsonville Adopting An Updated Water System Master Plan As A Sub-Element Of The City's Comprehensive Plan; Adopting A Capital Improvement Project List For Water Supply, Storage And Distribution; And Replacing All Prior Water System Master Plans. (staff – Mende)

Continue Resolution No. 2350 to the October 1, 2012 Council Meeting.

B. **Resolution 2350** (*continued from August 20, 2012 Public Hearing*)
A Resolution Of The City Of Wilsonville Authorizing Establishment Of A Reimbursement District To Refund To The City Of Wilsonville The Pro Rata Costs For The Segment 1 Extension Of The Coffee Lake Drive Sewer Line Infrastructure Improvements That Will Serve Properties Within The Reimbursement District (staff – Adams/Kohlhoff)

8:20 P.M. CITY MANAGER'S BUSINESS

A. Meeting Recap

8:25 P.M. LEGAL BUSINESS

8:30 P.M. ADJOURN

Time frames for agenda items are not time certain (i.e. Agenda items may be considered earlier than indicated. The Mayor will call for a majority vote of the Council before allotting more time than indicated for an agenda item.) Assistive Listening Devices (ALD) are available for persons with impaired hearing and can be scheduled for this meeting if required at least 48 hours prior to the meeting. The city will also endeavor to provide the following services, without cost, if requested at least 48 hours prior to the meeting:-Qualified sign language interpreters for persons with speech or hearing impairments. Qualified bilingual interpreters. To obtain services, please contact the City Recorder, (503)570-1506 or king@ci.wilsonville.or.us

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City of
WILSONVILLE
in OREGON

CITY COUNCIL WORKSESSION
STAFF REPORT

Meeting Date:	Subject: Basalt Creek Transportation Refinement Plan
September 6, 2012	Staff Member: Chris Neamtzu, Planning Director Department: Community Development
Action Required	**Advisory Board/Commission Recommendation**
☐ Motion ☐ Public Hearing Date: ☐ Ordinance 1st Reading Date: ☐ Ordinance 2nd Reading Date: ☐ Resolution ☒ Information or Direction ☐ Information Only ☐ Council Direction ☐ Consent Agenda	☐ Approval ☐ Denial ☐ None Forwarded ☒ Not Applicable **Comments: N/A**
Staff Recommendation: Staff and consultant team seek City Council direction on the draft Basalt Creek Transportation Refinement Plan executive summary in preparation for final action by the Policy Advisory Group (PAG).	
Recommended Language for Motion: N/A	
PROJECT / ISSUE RELATES TO:	
☐Council Goals/Priorities	☐Adopted Master Plan(s) ☒Not Applicable

ISSUE BEFORE COUNCIL: Washington County's consultant team on the Basalt Creek Transportation Refinement Plan, DKS Associates (traffic) and JLA Public Involvement will attend the September 6th work session to present the final draft of the executive summary and technical evaluation. The project team will provide the City Council with a detailed project overview and a summary of the concepts analyzed, with a detailed focus on the Technical Working Group (TWG) recommended East-West Alternative. Councilors should provide input to the Wilsonville representatives on the Policy Advisory Group (PAG) in preparation for the final PAG meeting, which is yet to be scheduled. The Wilsonville representatives are Mayor Knapp and Council President Nunez.

EXECUTIVE SUMMARY: Following more than a year of collaboration between Washington County, Metro, ODOT and the cities of Tualatin and Wilsonville, the project team is in the final stages of completing the Basalt Creek Transportation Refinement Plan Technical Report and accompanying technical recommendations. Completion of this important work will set the stage for the cities of Tualatin and Wilsonville to initiate concept planning for the Basalt Creek area, which is tentatively scheduled to begin in the first quarter of 2013.

In order to bring the project to a close, the PAG will have one more meeting with the purpose of arriving at a final recommendation. The September 13th PAG meeting has been cancelled due to scheduling conflicts. The new date has yet to be determined. At the final PAG meeting, the group will be asked to make a final recommendation on the major transportation investments for the area, most notably the alignment for the major transportation route between 124th Ave and Boones Ferry Road. Once the regional partners agree on the major transportation investments to support development of the Basalt Creek area, concept planning can commence. Following the final PAG recommendation, Staff will prepare an agreement to be approved by the elected bodies of each of the respective agencies. This step will help to ensure that the agreed upon concept will be included in the subsequent concept plan, which will ultimately become a part of the city's Transportation System Plan and Comprehensive Plan.

EXPECTED RESULTS: The project team is seeking consensus from the PAG on the final recommendations contained in the Basalt Creek Transportation Refinement Plan so that land use, jurisdictional and infrastructure planning can begin for the area.

TIMELINE: The project's TWG has been working together for over a year on the technical analysis and associated recommendations. The PAG is scheduled to wrap up its work before the end of the year. The project to prepare a concept plan for the area is scheduled to commence in the first quarter of 2013.

CURRENT YEAR BUDGET IMPACTS: Washington County has funded all of the public involvement, technical evaluation and report preparation. The City of Tualatin received approximately $350K from Metro's Construction Excise Tax (CET) to perform concept planning, which can commence once there is an agreed upon common set of transportation improvements for the Basalt Creek area. The City of Wilsonville has invested staff time into the process.

FINANCIAL REVIEW / COMMENTS:
Reviewed by: JEO Date: 8.24.12

Consensus requested through this process has no direct financial impact on the FY 2012-13 Budget.

Concept planning, scheduled to begin the third quarter of FY 2012-13, will be funded through the City of Tualatin from Metro's Construction Excise Tax (CET).

The outcomes from the technical report and concept planning will determine the extent of the funding required to complete the projects in future years, which will include a combination of funding sources such as federal, state, regional, local and private sources.

LEGAL REVIEW / COMMENT:
Reviewed by: _MEK_____ Date: _8/12/2012_____

No comment at this time as the outcomes from the current process will set the stage for what further legal documents and input may be involved.

COMMUNITY INVOLVEMENT PROCESS: The Transportation Refinement Plan project has used a wide variety of public outreach methods to reach out to stakeholders and the public. The project has provided information and sought feedback via a web site, public open houses conducted, numerous TWG/PAG meetings, City Council and Planning Commission work sessions, and in one-on-one meetings with property owners and neighborhood groups. The consultant team will be prepared to speak to the public involvement process at the meeting.

New documents have recently been posted to the project website:

http://www.basaltcreek.com/Transportation_Refinement_Plan.html

UPDATED MEETING TIMES:

Tualatin Council Work Session Briefing
August 27th, 5 p.m. Tualatin Council Chambers 18880 SW Martinazzi Avenue

Wilsonville Council Work Session Briefing
September 6th, 5 p.m. Wilsonville City Hall 29799 SW Town Center Loop E

Wilsonville Planning Commission Briefing
September 12th 6 p.m. Wilsonville City Hall 29799 SW Town Center Loop E

PAG Meeting #4 Date and Time TBD

POTENTIAL IMPACTS or BENEFIT TO THE COMMUNITY (businesses, neighborhoods, protected and other groups): The project team has worked diligently to provide sound recommendations that balance short- and long-term traffic operations, overall cost, ability to phase improvements, support for future development, minimization of environmental impacts, and Regional Transportation Plan (RTP) consistency. The Technical Report provides additional details on project alternative impacts and benefits to the community. Staff anticipates that the alternative proposed by the TWG (the East-West alignment) will allow increased traffic to businesses in the northern portion of Wilsonville, which is expected to benefit the community.

ALTERNATIVES: Through a series of collaborative technical workshops and various public outreach events, three concepts were created to improve the transportation network in the Basalt Creek area. These concepts include:

- Improve existing rights of way network concept
- Diagonal alignment network concept
- East-west alignment network concept

Following the last PAG meeting in April and public open house in May, neighbors near Boones Ferry Road impacted by the East-West Concept requested analysis of a hybrid concept that would move the regional traffic further south. In response, technical staff developed and evaluated a Diagonal Hybrid Concept that would incorporate elements of the diagonal alignment, but provides a separate road for east/west regional traffic. However, this concept adds cost, raises operations issues, fragments parcels and impacts residential properties on the southern end of Boones Ferry.

CITY MANAGER COMMENT:

ATTACHMENTS

A. Basalt Creek Transportation Refinement Plan PowerPoint
B. Diagonal Hybrid fact sheet
C. Basalt Creek Transportation Executive Summary
D. Open House Summary and Public Comments
E. April 26th PAG meeting #3 Summary

Basalt Creek Transportation Refinement Plan

Wilsonville City Council

September 6, 2012

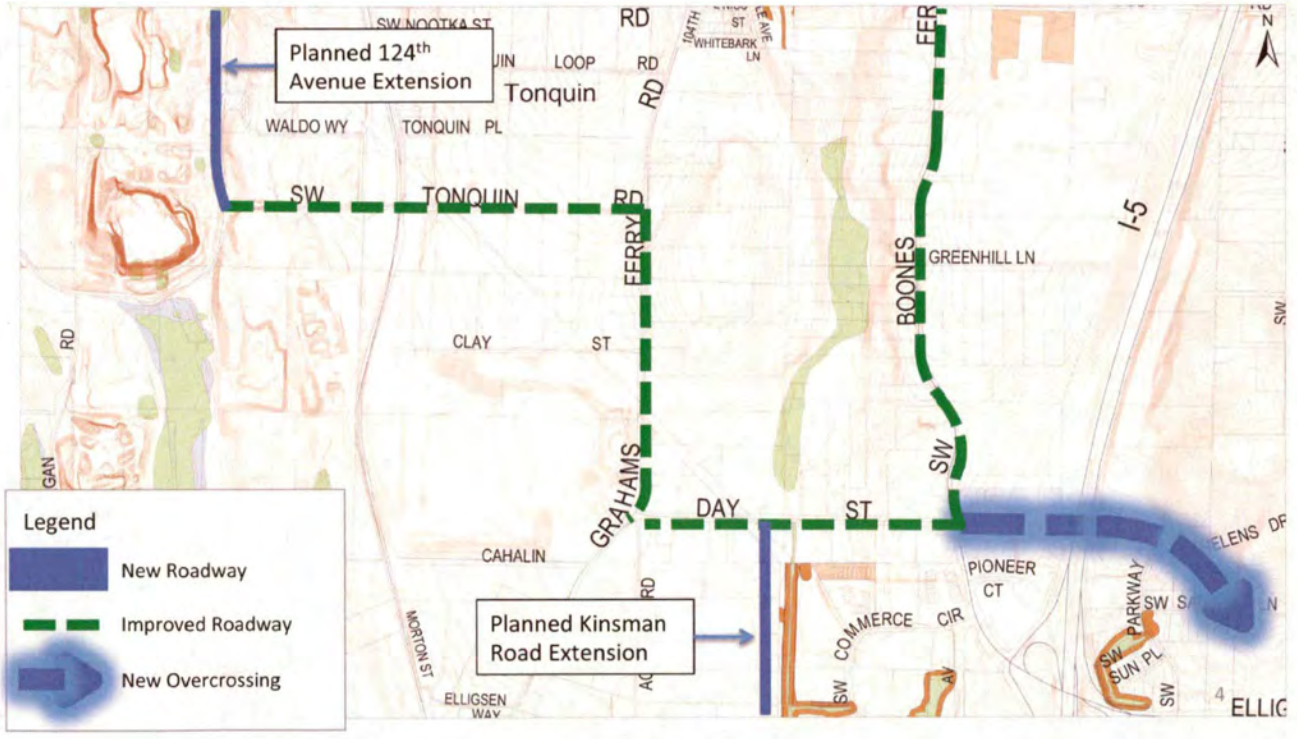
Why are we here tonight?

- What do we need from the Council?
- Presentation Outline
  - Project Overview
  - Evaluation of Concepts
  - The East-West Concept

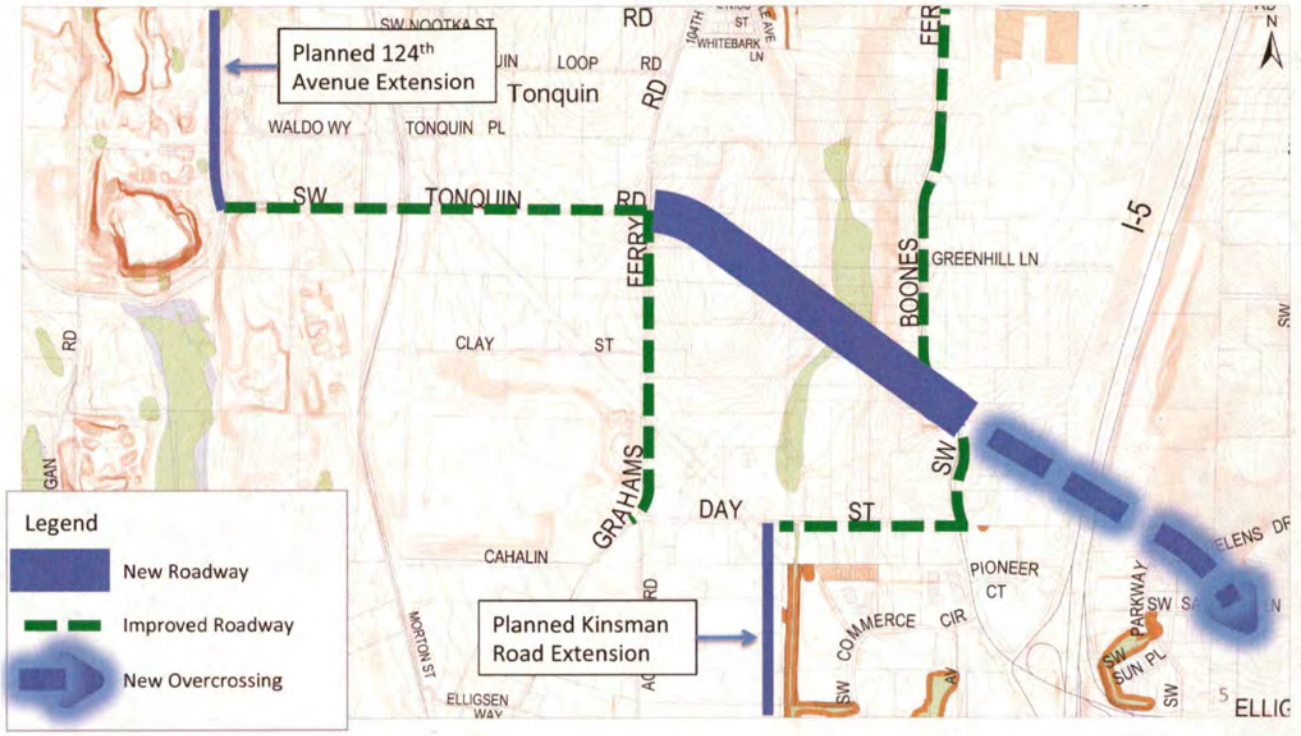
Public Outreach Summary

Meeting	Date
Boones Ferry Road Open House	September 2011
Project Newsletter Mailing Basalt/Boones Ferry/124th Extension Open House	December 2011
Tualatin CIO	January 2012
Tualatin TSP Open House Boones Ferry Road neighbors meeting	February 2012
Basalt Project Newsletter Mailing Wilsonville Chamber of Commerce	April 2012
Interchange area business outreach (extra letters and phone calls)	April–May 2012
Basalt Open House Wilsonville TSP Open House	May 2012
Boones Ferry Road neighbors meeting (neighbor-hosted)	June 2012
CIO-6 Open House	August 2012
Basalt Policy Advisory Group meetings	September 2011 November 2011 April 2012

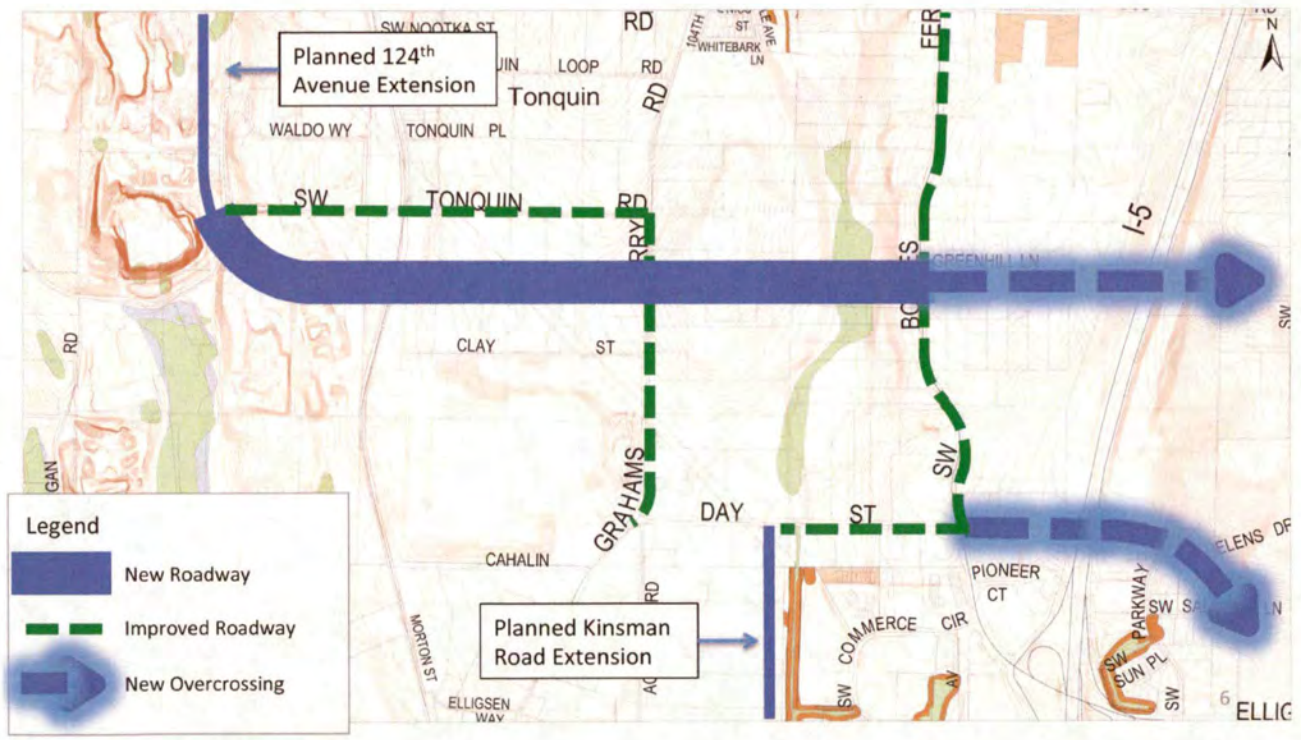
Overview: Improve Existing Concept



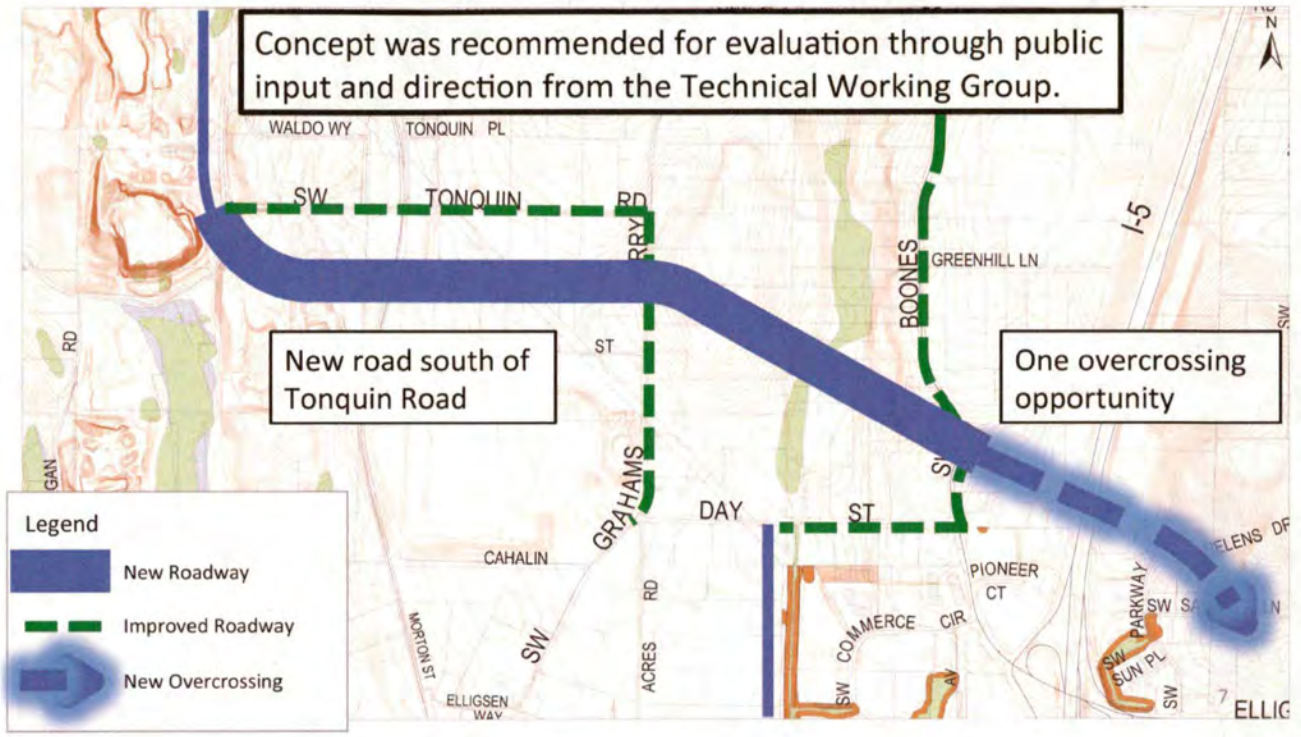
Overview: Diagonal Concept



Overview: East-West Concept



Additional Concept: Diagonal Hybrid



Evaluation Results

	Network Concepts			
Evaluation Measure	**East-West**	**Diagonal Hybrid**	**Diagonal**	**Improve Existing**
Network Cost	$139M	$149M	$130M	$82M
I-5 Connection Cost	$72-82M*	$34-44M	$34-44M	$34-44M
Ability to Phase	+	+	+	+
Supportive of Development	+	✓	✓	-
Environmental Impact	-	–	–	+
Consistency with RTP	+	+	+	✓
Traffic Operations	+	-**	-	–
Constructability	+	✓	✓	+

Sources: DKS Associates and Quincy Engineering, 2012

* East-West concept provides flexibility for a second overcrossing ($38M)

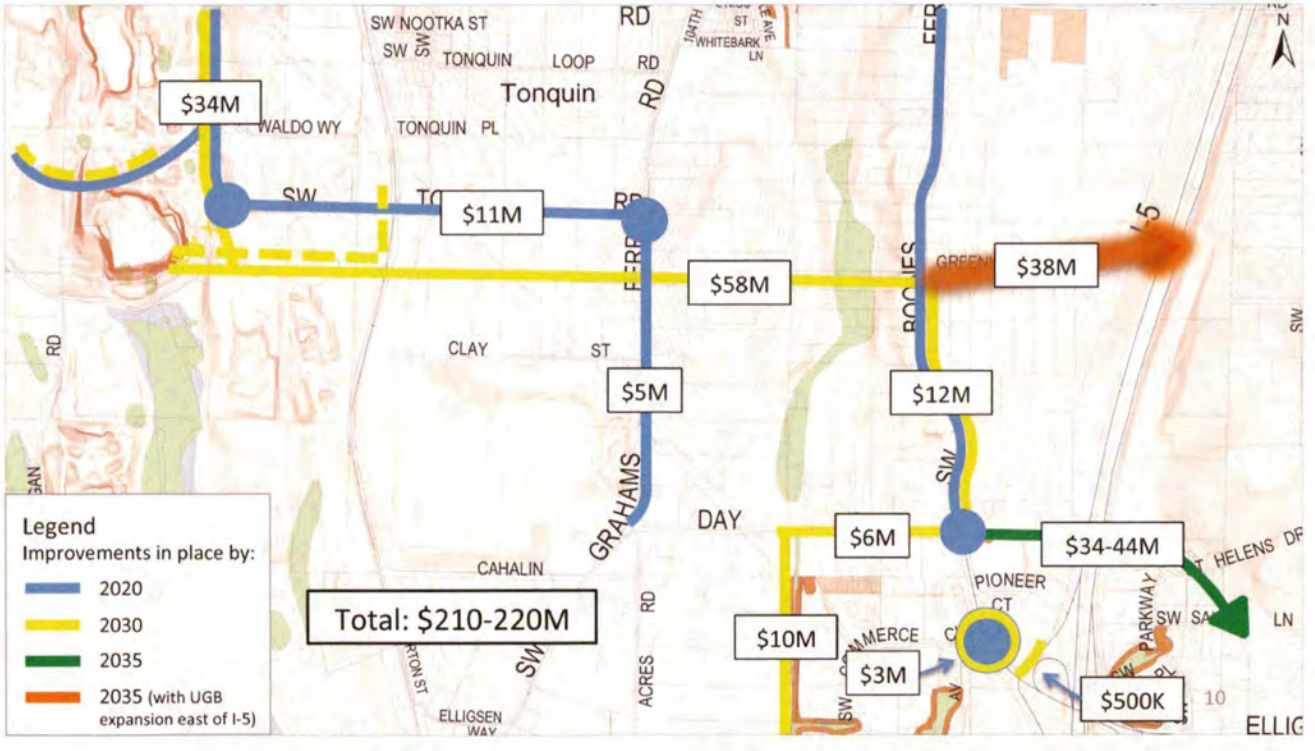
** Diagonal Hybrid performs better than Diagonal, but fails to serve forecast demand

\+ Performs well ✓ Performs adequately

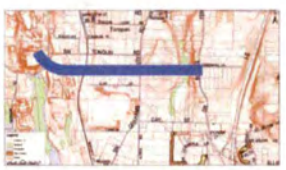
\- Does not perform well – Performs poorly

Traffic Impact of East-West Concept to North Wilsonville

Cost



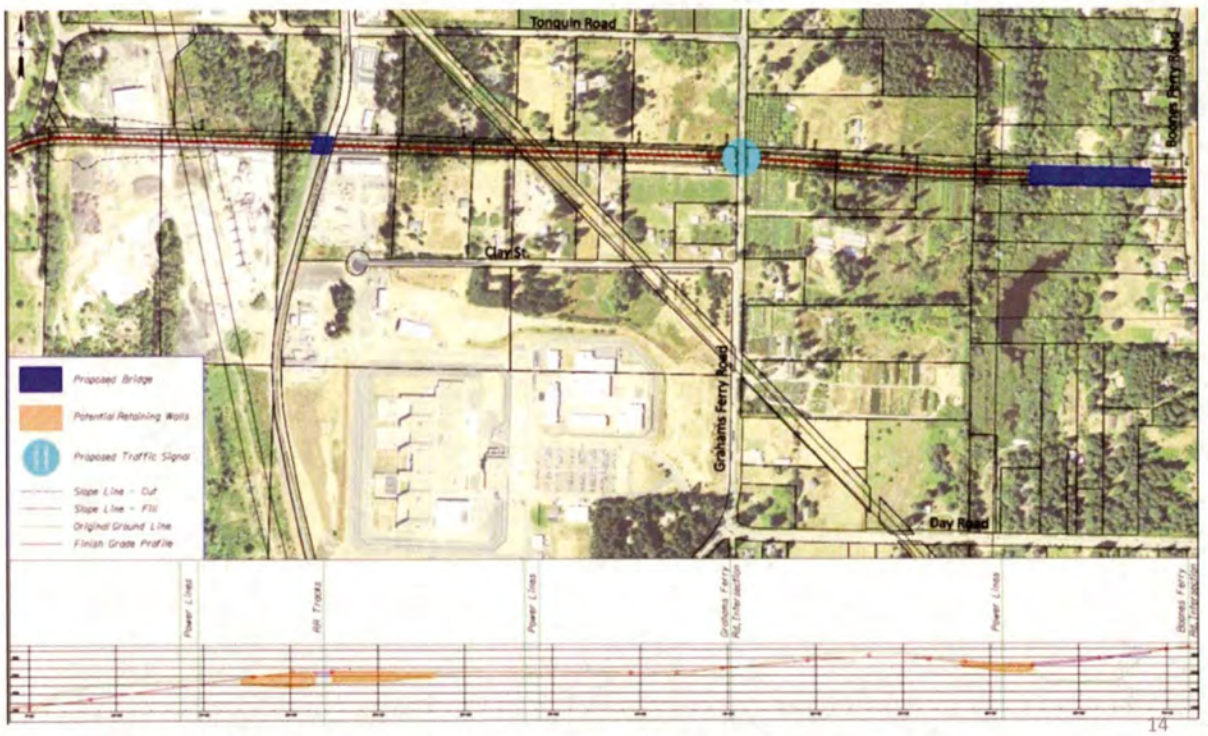
East-West System: 2020



East-West System: 2030

East-West System: 2035

East-West Alignment Detail



2035 Overcrossing Option A: Day to Parkway Center

2035 Overcrossing Option B: Day to Canyon Creek

Next Steps

Meeting	Date
City Council Briefings (Tualatin and Wilsonville)	August/September 2012
Policy Advisory Group Recommendation	September 13, 2012
Intergovernmental Agreement between Cities, County, and Metro	Fall 2012
Begin Land Use Concept Planning	Winter 2012/2013

Executive Summary

This report documents the background, purpose, development of alternatives, and findings for the Basalt Creek Transportation Refinement Plan. The refinement planning effort is intended to determine the major transportation system connecting Tualatin-Sherwood Road to I-5 in North Wilsonville through the Basalt Creek Planning Area, which is currently an unincorporated urban area of Washington County lying between the cities of Tualatin to the north, and Wilsonville to the south (see Figure 1 on next page). This refinement will better define recommendations from the I-5/99W Connector Study (see below) and the Regional Transportation Plan, setting the stage for concept planning and comprehensive plan development for the Basalt Creek area.

Project Background and Purpose

The need to plan for the future transportation system in the Basalt Creek area is driven not only by future growth in the Basalt Creek Planning area itself, but by future growth in adjacent areas such as the Southwest Tualatin Concept Planning Area and the Tonquin Employment Planning Area in Sherwood, and the Coffee Creek Planning Area in Wilsonville, also shown in Figure 1. Several related planning efforts provide direction and context for the Basalt Creek Transportation Refinement Plan:

- The **I-5/99W Connector Study** recommended an alternative that spreads east-west traffic across three smaller arterials rather than a single expressway. Although a specific alignment was not defined, the eastern end of the southern arterial was generally located within the Basalt Creek Planning Area, south of Tonquin Road. The present planning effort aims to further define the location of the connection from SW 124th Avenue to the I-5/Elligsen interchange in a manner that does not preclude the future Southern Arterial west of SW 124th.
- The **2035 Regional Transportation Plan** (RTP) calls for detailed project planning and near-term construction of an extension of SW 124th Avenue from Tualatin-Sherwood Road to the I-5/Elligsen Road interchange, supporting industrial access from the Tonquin, Southwest Tualatin, and Basalt Creek Planning Areas.
- The **Tonquin Employment Area, Southwest Tualatin Concept Planning Area, and Coffee Creek Planning Area** (all shown in Figure 1) together comprise about 1,000 acres surrounding the Basalt Creek area that are planned for primarily industrial use. These areas are expected to generate growing freight and work-related travel demands on the transportation network that runs through the Basalt Creek area.

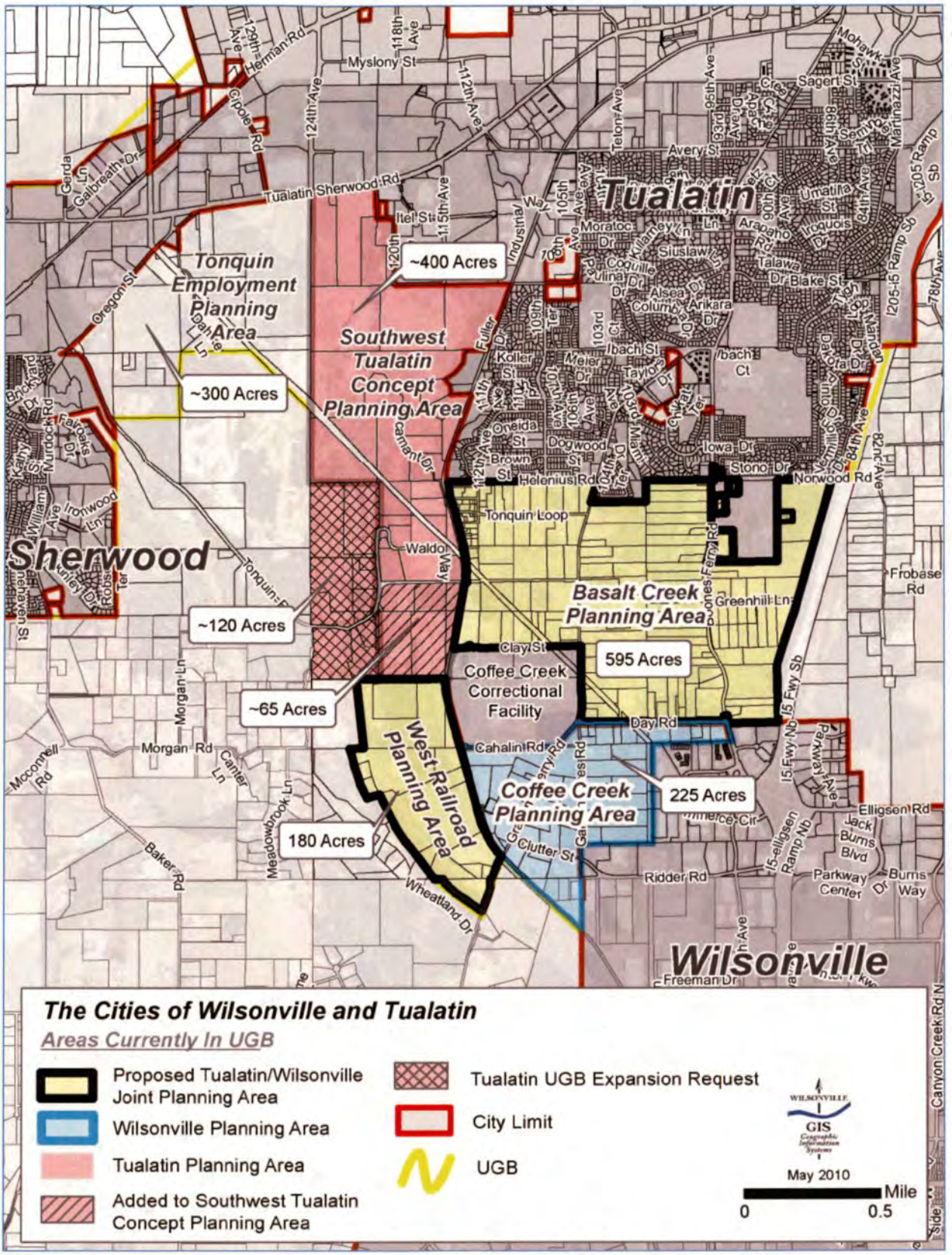


Figure 1: Basalt Creek and other planning areas

- The **SW 124th Avenue Extension** Project, currently underway, is planning and designing the corridor described in the RTP from Tualatin-Sherwood Road to Tonquin Road. The present planning effort aims to extend the corridor to I-5 as envisioned in the RTP and ensure consistency with current SW 124th Avenue project.
- The **Boones Ferry Road** improvement project, also currently underway, provides pedestrian and bicycle improvements and an intermittent center turn lane between Norwood Road and Day Road. It is an assumed improvement for the Basalt Creek area.
- The **Tonquin Trail** master plan identifies an alignment for new bicycle and pedestrian connections between Sherwood, Tualatin, and Wilsonville, with connections to the larger regional trail system. The Tonquin Trail will travel through the Tonquin Employment Concept Plan Area and the Southwest Tualatin Concept Plan Area, and is an assumed improvement within the Basalt Creek Transportation Refinement Plan.

Finally, completion of this transportation refinement plan sets the stage for the Cities of Tualatin and Wilsonville to begin joint land use concept planning for the Basalt Creek area, including further refinement of the local transportation system.

Guiding Considerations

Prior to developing alternatives, partner agencies articulated a set of considerations to guide selection, and preferred characteristics of the primary east-west facility through the area.

- **Guiding considerations** included: ability to fund and phase improvements, level of impacts (environmental, right-of-way, etc.), support for development, consistency with regional policy, and traffic operations performance.
- **Facility characteristics** included: for the primary arterial connection, a 45 mph prevailing speed and access spacing of one-half mile to one mile to improve capacity.

Alternatives Considered

Using the considerations and preferred characteristics described above, the multi-agency group developed alternatives for the major transportation system in the Basalt Creek area. Three roadway network concepts emerged, each featuring a main east-west arterial:

Improve Existing. This concept (Figure 2) proposed to widen Tonquin Road, Grahams Ferry Road, and Day Road to five lanes, providing a single corridor connecting the 124th Avenue Extension to the I-5/Elligsen Road interchange.

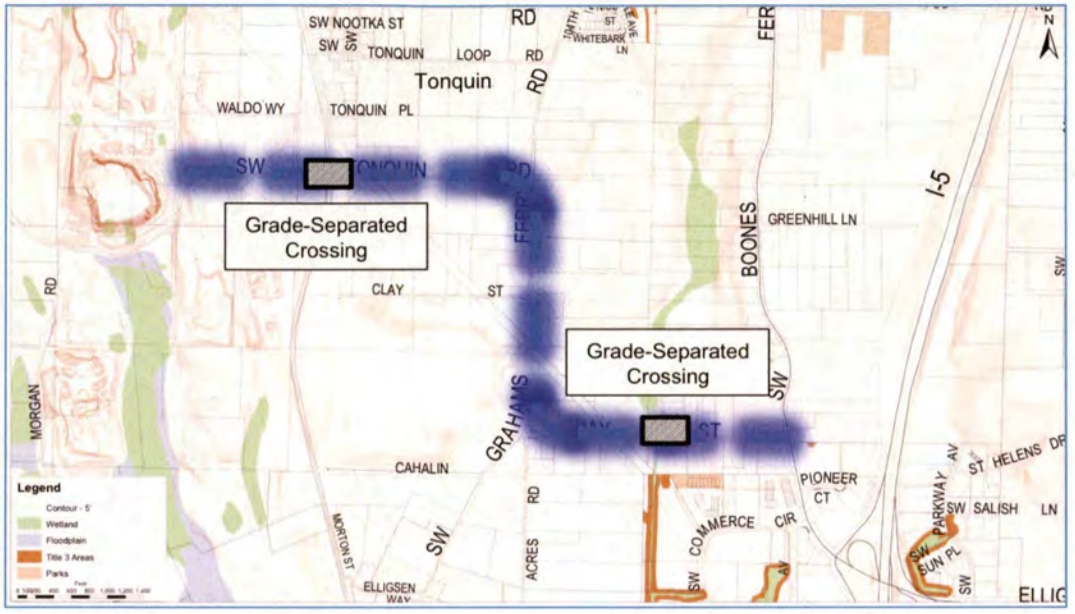


Figure 2: Improve Existing network concept

Diagonal Alignment. This concept (Figure 3) proposed to widen Tonquin Road to five lanes and construct a new, diagonally-aligned facility between the Tonquin/Grahams Ferry intersection and the I-5/Elligsen Road interchange area. Between Grahams Ferry and Boones Ferry, the alignment stays south of a major hill and canyon.[1]

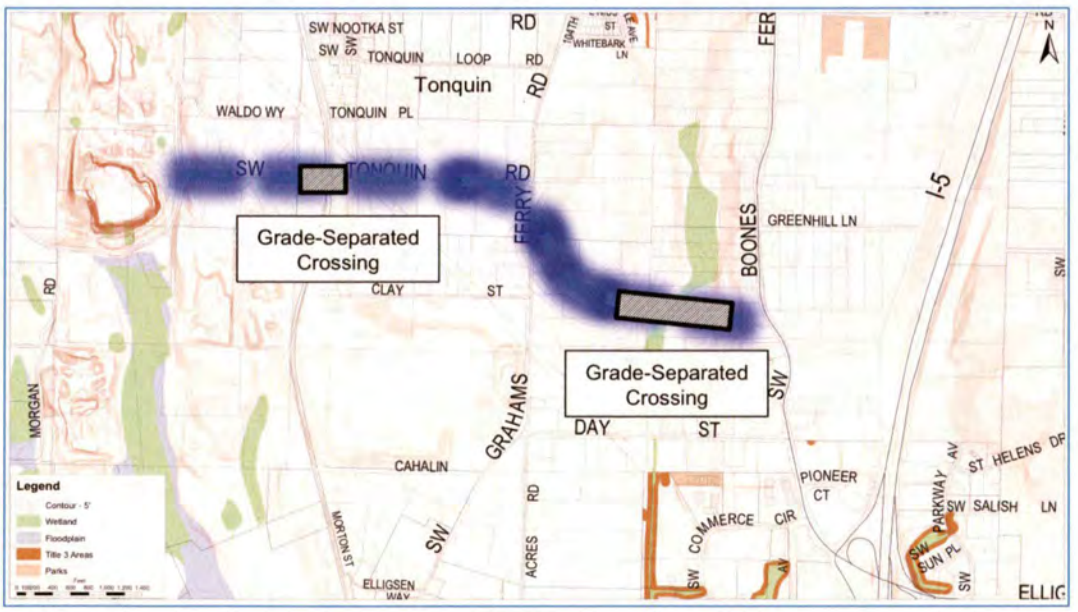


Figure 3: Diagonal Alignment network concept

[1] See Chapter 4 for more detail on topographical considerations.

East-West Alignment. This concept (Figure 4) proposed a new five-lane east-west facility from the 124th Avenue Extension towards I-5, leaving Tonquin Road to develop as a parallel three-lane road for property access. Between Grahams Ferry and Boones Ferry, the alignment crosses over the hill and canyon at a well-identified location that minimizes canyon crossing distance.

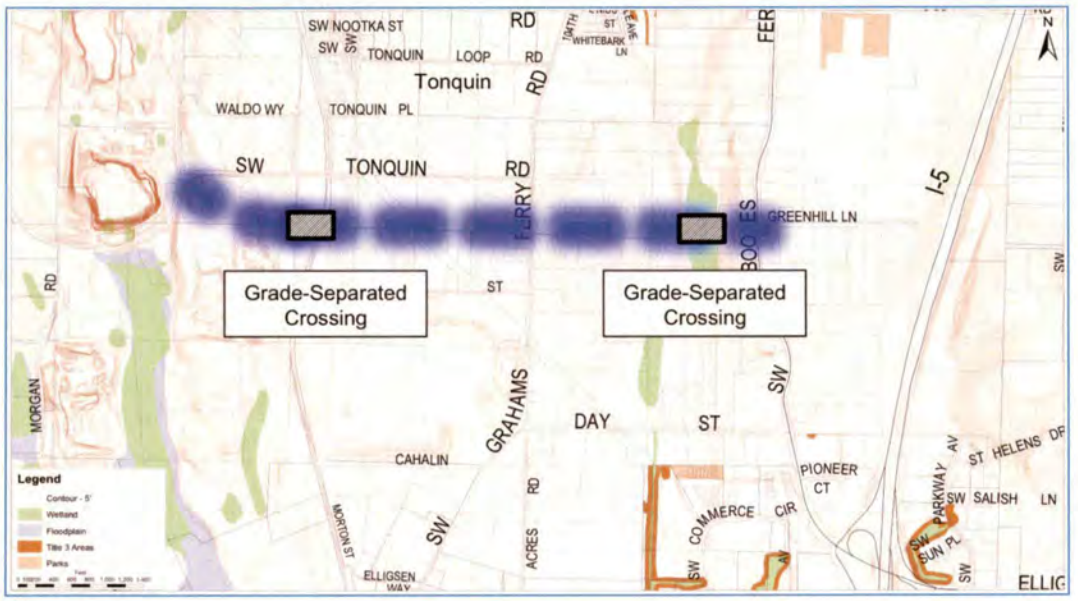


Figure 4: East-West Alignment network concept

Also, near the end of the evaluation process, a fourth network concept, the **Diagonal Hybrid**, was developed. This concept included elements similar to the Diagonal described above, with the following differences:

- 3-lane Tonquin Road
- New east-west facility between the 124th Avenue Extension and Grahams Ferry Road, similar to the facility included in the East-West concept
- Connection from the east-west facility to a diagonal crossing of the area between Grahams Ferry Road and Boones Ferry Road, similar to the crossing in the Diagonal concept

The Diagonal Hybrid was suggested through public input and forwarded for evaluation by the project's Technical Working Group (TWG) as a concept that would combine the diagonal footprint with some of the traffic benefits seen in the East-West concept. This concept is illustrated in Figure 5.

Figure 5: Diagonal Hybrid Alignment network concept

Additionally, four I-5 interface concepts were developed:

- **Improve Existing Interchange.** This concept would make incremental improvements to the existing I-5/Elligsen Road interchange configuration, such as widening off-ramps.
- **Overcrossing to Elligsen Road.** This concept would either extend Day Road east over I-5, looping down to Elligsen Road, or extend a new diagonally-aligned facility over I-5 to Elligsen Road.
- **Northern Overcrossing.** This concept would extend a new east-west facility over I-5 in the vicinity of Greenhill Road on the west and Frobase Road on the east, connecting into the Stafford urban reserve area.
- **Split Diamond.** This concept would modify the interchange, moving the I-5 southbound off and I-5 northbound on ramp terminals to a Day Road or Diagonal overcrossing, and provide collector-distributor roads. The Split Diamond concept was developed with the understanding that it should be considered a last resort for accommodating long-term needs, and all other viable concepts should be considered first.

Among the network concepts, only the East-West allows for the possibility of both I-5 overcrossing concepts in the long term if the urban reserves begin to develop and increase travel demand. The other three network concepts only accommodate the overcrossing to Elligsen Road.

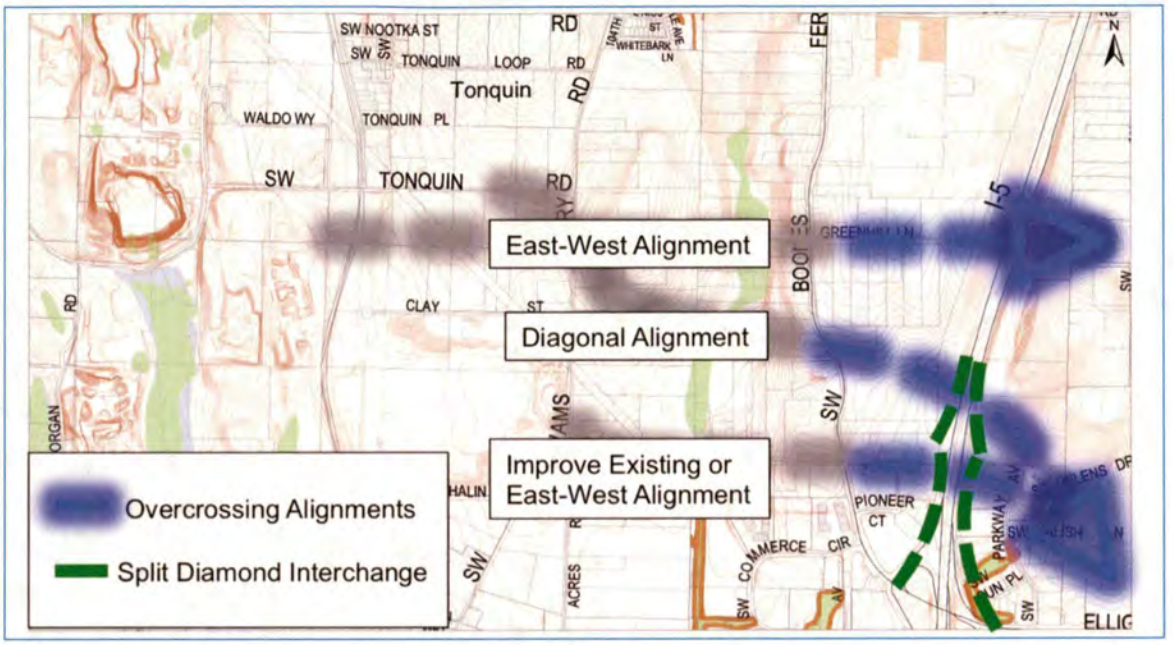


Figure 6: I-5 Interface concepts

Findings

The three original network concepts and four I-5 interface concepts were evaluated according to the guiding considerations developed at the beginning of the process. Table 1, below, summarizes how the concepts performed by each evaluation measure. A more detailed evaluation matrix is included at the end of Chapter 4. **Note that the Improve Existing network concept was not evaluated to the same level of detail as the other two concepts**, as initial traffic analysis screening showed that improving existing roads only would not provide acceptable performance in 2035. Also, the Diagonal Hybrid concept, introduced later in the evaluation process, was only analyzed for long-term (2035 with growth in urban reserves) traffic performance.

Table 1: Evaluation Summary

Evaluation Measure	Network Concepts			
	East-West	Diagonal Hybrid	Diagonal	Improve Existing
Network Cost	$139M	$149M	$130M	$82M
Future I-5 Connection Cost	$72-82M*	$34-44M	$34-44M	$34-44M
Ability to Phase	+	+	+	+
Supportive of Development	+	✓	✓	-
Environmental Impact	-	--	--	+
Consistency with RTP	+	+	+	✓
Traffic Operations	+	- **	-	--
Constructability	+	✓	✓	+

Sources: DKS Associates and Quincy Engineering, 2012

+ Performs well ✓ Performs adequately - Does not perform well — Performs poorly

* The East-West concept provides flexibility for a second overcrossing, at an additional cost of $38M.

** The Diagonal Hybrid concept performs better than the Diagonal, but fails to serve forecast traffic demand.

Key findings from the evaluation are:

- Of the network concepts, only the East-West Alignment provides acceptable traffic operations under 2035 conditions, assuming growth in the region's urban reserves areas consistent with Metro's RTP. **It provides the best operations because it has adequate east-west capacity west of Grahams Ferry Road, and it is the only concept that accommodates two I-5 overcrossings.** Note that the modeling for this effort includes travel demand for urban reserves areas as they may develop in the future. However, this plan does not advocate for or against urban reserves being brought into the urban growth boundary or when and where future development should occur.
- While the Diagonal Hybrid does have the traffic benefits of a new 5-lane arterial as in the East-West concept, the intersections of the new arterial with Grahams Ferry Road and with Boones Ferry Road exceed capacity. Traffic is also heavier on the Hybrid Diagonal crossing between Grahams Ferry and Boones Ferry than the comparable East-West crossing because it connects to the concept's only I-5 overcrossing, where traffic in the East-West concept may use another facility (Day Road) to access an I-5 crossing.
- The Improve Existing Interchange concept is a key part of potential improvement phasing, as it improves traffic conditions in north Wilsonville and helps to delay the need for a new I-5 overcrossing, but is insufficient in itself to address needs in 2035.
- All alternatives are compatible with the Tonquin Trail. Roadway cross-sections and right of way purchases for the future roadway network will consider needs for the Tonquin Trail and its connections to the larger regional trail system. This includes incorporating the trail into the design for the railroad overpass for a new east-west roadway, and to

provide a potential multi-use path on a future east-west roadway and east-west I-5 overcrossing. The Basalt Creek Transportation Refinement Plan will also meet the needs of bicycle and pedestrian facilities for planned roadways and for crossing of planned roadways.

- The East-West concept, with two overcrossings, creates different traffic patterns in the area in 2035 from the network currently assumed in the RTP (see Chapter 4 of this report for more detail):
    - Compared to the RTP projects, the East-West concept removes a significant number of vehicles from the street network around downtown Tualatin, including Tualatin-Sherwood Road and also off of local neighborhood streets in southwest Tualatin.
    - The East-West concept significantly increases vehicle volumes on SW 124th Avenue, and on Tualatin-Sherwood Road west of 124th.
    - In north Wilsonville, the East-West concept increases vehicle volumes on Parkway Center Drive, but generally reduces volumes on the west side of the I-5/Elligsen interchange, particularly on Grahams Ferry Road and Ridder Road.
- The Day Road overcrossing to Elligsen Road is effective in drawing traffic off of Boones Ferry Road and Elligsen Road, as well as improving conditions at the I-5/Elligsen Road ramp terminals. This improvement (or the northern overcrossing improvement) would be needed by 2035 regardless of growth in urban reserves areas to provide adequate operation at the I-5/Elligsen Road interchange.
- Assuming the inclusion of urban reserves east of I-5 into the urban growth boundary in 2035, a second overcrossing in the vicinity of Greenhill Road/Frobase Road will be needed to provide new east-west connectivity and to continue to relieve the interchange of through traffic.
- The split diamond interchange concept, as an addition to the two new overcrossings, appears to have no clear traffic operations benefit for the transportation system in the area due to constraints west of I-5. However, any I-5 overcrossing in the vicinity of Day Road should be designed so as not to preclude a future split diamond, with room under the overcrossing for collector-distributor roads.

Improving the existing facilities as mentioned above, adding a new arterial road, and adding new I-5 interface improvements would total up to $220 million. However, many of these are improvements that have been planned previously:

- Several of the network improvements are already included in the financially constrained (Federal) RTP.[2] The RTP cost estimates for these projects total about $120 million.
- Other improvements similar to those included in the network and I-5 interface concepts are included in the State RTP, which assumes additional revenue sources.[3] The RTP cost estimates for these projects represent an additional $130 million of planned improvements, including portions of the I-5 to 99W Southern Arterial (east of 124th Avenue).

This is a total of $250 million in RTP projects that can potentially be refined based on the outcome of this effort.

Table 2, on the following page, compares cost elements among the Diagonal, Diagonal Hybrid, and East-West alternatives, including the I-5 treatments. Phasing years shown reflect the year by which a project should be complete in order to maintain acceptable traffic operations in the Basalt Creek area. While a separate phasing analysis was not done for the Diagonal Hybrid, it was assumed that the general phasing would be the same as the other two concepts.

Full costs for each project are provided by potential phasing year (current dollars), although design and right of way costs could be incurred earlier. The Tonquin Trail is not included, as cost estimates are not yet available, but this project is included in the financially constrained RTP as well. Potential phasing for the Diagonal and East-West alternatives is illustrated in Figures 7 and 8.

[2] The Financially Constrained RTP assumes existing and proposed funding sources that can reasonably be expected to be available for transportation uses during the plan period. Financial constraint is required by federal transportation planning regulations and constitutes the federally recognized plan.

[3] The State RTP assumes additional funding sources beyond those included in the Federal RTP, including increases in the state vehicle registration fee, increased in local system development charges, and local street utility fees.

Table 2: Cost Estimates for Diagonal and East-West Alignment Alternatives with Potential improvement Phasing

Improvement	Diagonal Alt Cost ($M)	Diag. Hybrid Alt Cost ($M)	East-West Alt Cost ($M)	Previously Planned?*
2020				
3-lane 124th Avenue Extension [a]	$20.0	$20.0	$20.0	Federal RTP
Improve Tonquin Road to 3 lanes (124th Avenue Extension to Grahams Ferry Road) [b]	$10.5	$10.5	$10.5	Federal RTP
Improve Grahams Ferry Road to 3 lanes (Tonquin to Day) [b]	$5.4	$5.4	$5.4	Federal RTP
Improve Boones Ferry Road to 3 lanes (Norwood Road to Day Road) [a]	$10.8	$10.8	$10.8	In design
Boones Ferry Road/Commerce Circle/95th Avenue Intersection Improvements [c]	$2.5	$2.5	$2.5	Federal RTP
Construct Tonquin Trail **	-	-	-	Federal RTP
TOTAL 2020	**$49.2**	**$49.2**	**$49.2**	***$49.2***
2030				
Improve 124th Avenue Extension to 5 lanes [a]	$14.0	$14.0	$14.0	Federal RTP
5-lane East-West facility (124th Avenue Ext to Boones Ferry Rd) [b]	N/A	N/A	$57.9	State RTP
Improve Tonquin Road to 5 lanes (124th Avenue to Grahams Ferry) [b]	$6.7	N/A	N/A	State RTP
5-lane Diagonal facility (Grahams Ferry Road to Boones Ferry Road) [b]	$42.9	N/A	N/A	State RTP
5-lane Hybrid facility (124th Avenue Ext to Boones Ferry Road) [b]	N/A	$69.1	N/A	State RTP
5-lane Boones Ferry Road (new facility to Day Road) [b]	$0.8	$0.8	$1.1***	State RTP
5-lane Day Road (Kinsman Extension to Boones Ferry Road) [b]	$5.8	$5.8	$5.8	Similar to RTP project
3-lane Kinsman Road Extension [c]	$10.4	$10.4	$10.4	Federal RTP
Boones Ferry Road/Commerce Circle/95th Avenue Access Control	minimal	minimal	minimal	No
TOTAL 2030	**$80.6**	**$100.1**	**$89.2**	***$156.2***
2035 UGB				
5-lane Overcrossing of I-5 (Day Road/Boones Ferry Road intersection to Elligsen Road) [b]	$33.7-$44.1	$33.7-$44.1	$33.7-$44.1	State RTP
TOTAL 2035 UGB	**$33.7-$44.1**	**$33.7-$44.1**	**$33.7-$44.1**	***$50.0***
2035 RTP				
5-lane Overcrossing of I-5 (East-West facility/Boones Ferry Road intersection to Stafford Road) [b]	N/A	N/A	$38.0	State RTP
TOTAL 2035 RTP	**$0**	**$0**	**$38.0**	**$0**
GRAND TOTAL	**$165-$175**	**$185-195**	**$210-220**	***$250***

Source of cost estimates: [a] Washington County, [b] Quincy Engineering, [c] 2035 Regional Transportation Plan

* Totals for each interim year in this column, as well as grand total, represent total dollar amount either allocated in the RTP or committed for projects already in development. See Chapter 4 for more information on RTP comparison projects.

** Tonquin Trail costs are being estimated outside of this transportation refinement plan process.

*** Boones Ferry Road improvement costs are higher for the East-West because the segment south to Day Road is longest in this concept.

Figure 7: Summary of Potential Phasing (Diagonal Concept)

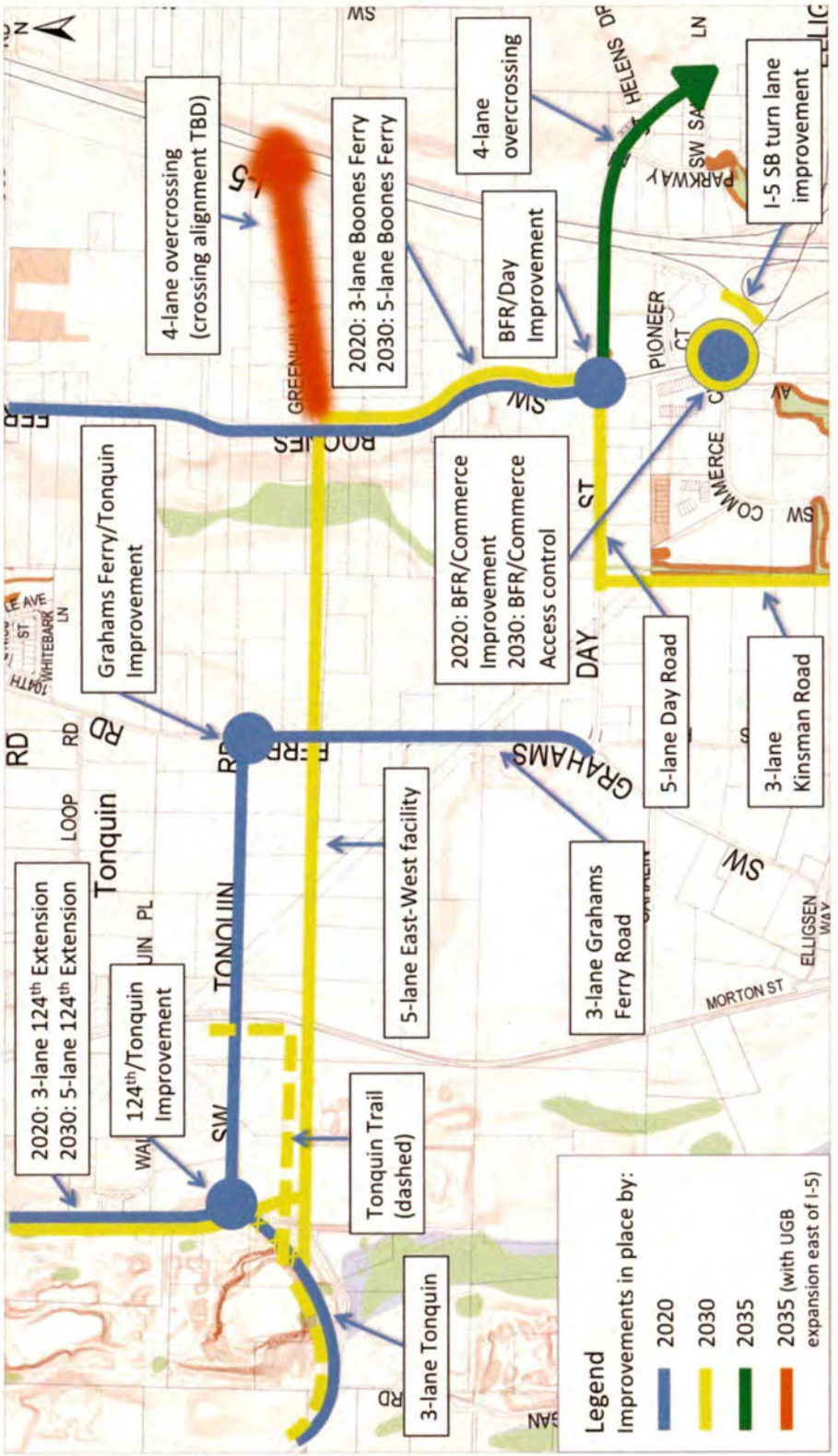


Figure 8: Summary of Potential Phasing (East-West Concept)

Basalt Creek Transportation Refinement Plan
Policy Advisory Group (PAG) Meeting# 3 Summary DRAFT

April 26, 2012 4:00 p.m. – 6:00 p.m.
Wilsonville City Hall, 29799 SW Town Center Loop E, 2nd Floor

Attendance

PAG Members:
Washington County
Commissioner Andy Duyck
Commissioner Roy Rogers

City of Wilsonville
Mayor Tim Knapp
Councilor Celia Nunez

City of Tualatin
Mayor Lou Ogden (by phone)
Councilor Monique Beikman

Metro
Andy Cotugno for Councilor Carl Hosticka

ODOT
Todd Juhasz

PAG Staff Resources (sit at table):
Bryan Cosgrove, WilsonvilleSherilyn Lombos, Tualatin
Andy Cotugno, Metro (sat in for Carl Hosticka)
Andrew Singelakis, Washington County

Staff:
Steve Adams, Wilsonville
Andy Back, Washington County
Ben Bryant, Tualatin
Colin Cortes, Tualatin
Russ Knoebel, Washington County
Stephan Lashbrook,Wilsonville
Mike McKillip, Tualatin
Chris Neamtzu, Wilsonville
Alice Rouyer, Tualatin

Consultants:
Ray Delahanty, DKS
Chris Maciejewski, DKS
Kristen Kibler, JLA
Jeanne Lawson, JLA

Public:
Wendie Kellington, TIG
Hank Stukey, TIG
Stephanie Eisert, Property owner
Mark Brown, TIG
John and Grace Lucini, Property Owner
Gordon Scott, Property owner
Joe Dills, OTAK
Joe Lipscomb
Scott and Lisa Shamburg

Welcome and Agenda Review

Jeanne Lawson reminded the Policy Advisory Group and the audience that this group of agency partners had been convened to give guidance and agree upon the major transportation framework in the Basalt Creek area. Their work would not implement the Southern Arterial that had been recommended in the I-5/99W Connector study, but it would ensure that the transportation framework would not preclude that past decision. In past meetings, the PAG had seen concepts for the major transportation framework. The purpose of this meeting was to confirm the evaluation of concepts before taking the findings for public review and comment. A decision would not be made at this meeting; the public open house will occur first. The group would make a recommendation on the transportation framework at their next meeting, which has not yet been scheduled. There would be ten minutes for public comment later in the meeting. Two people raised their hands indicating they intended to comments; others would be able to if they wished. The meeting summary from the previous PAG was approved.

The group reviewed the considerations that had been agreed to for the evaluation and level of detail of the evaluation: ability to fund and phase improvements, level of impacts (environmental, right-of-way, etc.), supports development, consistency with RTP, and traffic operations. The transportation framework concepts evaluated are very high level and not at a design level.

The Executive Summary of the Technical Report had been distributed to the PAG the previous week.

Basalt Transportation Concepts Evaluation

Chris Maciejewski, DKS, reviewed the guiding considerations again and shared the assumptions about the design characteristics of the new road concepts that had been evaluated. The new facility would be posted and designed for 45 mph. Access spacing would be ½ to 1 mile spacing for a new east-west facility of 5 lanes, which would provide about 2400 vehicles per hour in each direction. (This is similar to Hwy 224 in Milwaukie).

(See presentation for more detail.)

Chris reviewed the draft network concepts that staff had explored – Improve Existing, Diagonal Alignment, and East-West Alignment – to connect the new extension of SW 124th Avenue at Tonquin Road to SW Boones Ferry Road and then the future concepts for the network to interface with I-5. Chris explained that the concept to use existing roads was not carried forward for further analysis after last fall because it does not provide adequate capacity. It also could result in the overbuilding of Grahams Ferry Road and Tonquin Road. There was concern by Wilsonville Mayor Knapp about the characterization of the concept not being carried forward. Although it had not been analyzed further into the future, Mayor Knapp felt that the group had not dismissed the concept. In November, the multi-agency staff had believed the concept to use existing roads helped convey the bigger picture for how the new road concepts operate in the future. The two new road concepts had then received further evaluation.

Chris shared the findings and issues that had been further explored during concept development and the evaluation. Explanation of these issues can be found in the Technical Report. These issues include locating a topographically optimal crossing over Basalt Creek, right-of-way cost estimates (especially related to Wilsonville properties), traffic impacts to neighboring areas, phasing of overcrossings, compatibility with the Tonquin Trail, split diamond interchange operations, and phasing of a new arterial.

Chris reviewed two diagrams that showed possible phasing scenarios for both the diagonal alignment and the east-west alignment. They are similar, but the diagonal alignment is not able to handle traffic beyond 2035 when the urban reserves are included. The east-west provides an opportunity for a second overcrossing of I-5.

Mayor Knapp was concerned about how the right-of-way in the corridors for any new roads would be preserved. Chris said there could be a policy discussion on how land use may help preserve the right-of-way or that design could be done to show the right-of-way needs. Policies could be considered or put into place after the transportation framework was identified.

Chris presented a matrix summarizing the evaluation results. He said that the staff technical working group from the agencies believed that the data has been collected. (Later in the meeting, several said they felt the organization of the matrix was confusing since some elements were phases and others were different concepts. DKS will update the matrix.)

Key Findings

Chris reviewed the key findings learned through the evaluation (see presentation for graphics.)

Day overcrossing options

Some additional work had been done by Quincy Engineering to show that the Day overcrossings were feasible from a construction perspective; there had been concern that the topography precluded them. Russ Norton at Quincy developed two possible Day overcrossing options that are constructable. The two options - Day to Parkway Center and Day to Canyon Creek - provide Wilsonville with future viable connection options. The Parkway Center option impacts the RV park, while the Canyon Creek option avoids it.

East-West Lowest Cost Alignment

Since the PAG had last met, the team had been asked to find the location that would minimize cost and impact (by reducing the length of the structure required over Basalt Creek aka Seely Ditch, balancing cuts and fills, and avoiding difficult topography). At the last meeting in November and the open house in December, the east-west alignment had been shown north of Tonquin Road. The engineer had found a better east-west alignment south of Tonquin Road that crosses over the railroad tracks, generally follows property lines, and provides the shortest crossing of the Basalt Creek area (~600 foot crossing). Andy Cotugno asked Chris to describe more the thinking that went into the refinement. Chris explained that east-west alignment was conceived to go around the hill, rather than have to cross it with heavy construction work or structures. When the civil engineer got better topographic maps and went out in the field, he learned that there were really two gullies. The refined east-west alignment is in the narrowest part of an hourglass shaped wetland area and could make use of rocky outcroppings that would reduce the need to build and impact the more marshy areas. This minimizes both the length and cost of the wetland crossing.

Tonquin Trail Compatibility

Any of the options can be compatible with trail plans. The team has discussed this with Metro's Tonquin Trail staff. The east-west alignment concept might provide future opportunity to connect both sides of I-5.

Interchange Area Improvements

There are concerns about the operations at the interchange and whether or not a split diamond interchange could offer some additional improvement. The team met with ODOT and Wilsonville staff to discuss the issues. A new split diamond interchange (major modification of the existing) does not offer any improvement to operations. There are also major issues at the intersection of Boones Ferry/95th/Commerce Circle. Wilsonville relies on this intersection for many of its businesses. They

explored the options of changing to right in/right out access only or closing the east left of the intersection (Pioneer – Commerce Center South development). The access to the business park on the east side of Boones Ferry Road could be rerouted in the long-term. With this change, the intersection could still function in the long-term. The Wilsonville staff felt that the issue had been explored and that there are options to make it work in the long-term. Mayor Knapp later stated that he wanted the businesses in that area (and the Parkway Center area) to be aware of these discussions.

Traffic Impacts to Neighboring Areas

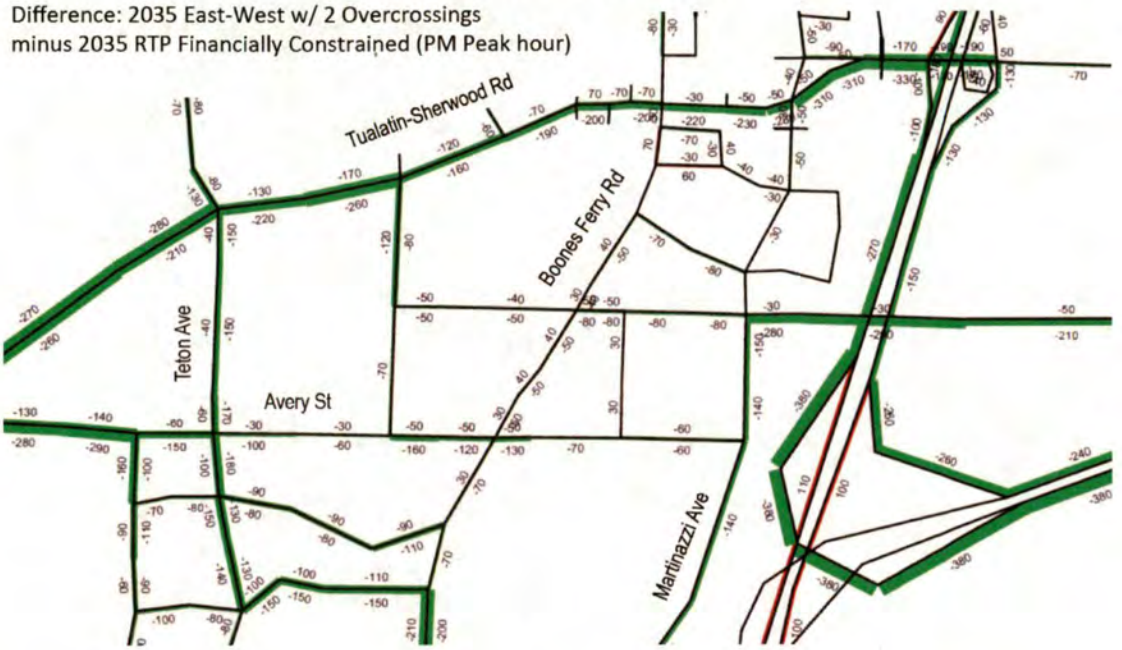
Chris reviewed three maps (provided below) showing traffic impacts (weekday PM peak hour) to South Tualatin, Southwest Tualatin, and North Wilsonville. The green lines show where there is future traffic reduction under the new east-west arterial and two overcrossings scenario, while red indicates increases in traffic. The following were key differences shown in the study area (traffic volumes represent both directions combined):

- Tualatin-Sherwood Road: 500 fewer vehicles east of 115th
- 124th Avenue: 1300 vehicles on new facility south of Tualatin-Sherwood Road
- Boones Ferry Road: 200 fewer vehicles north of the east-west arterial, 1200 more vehicles south of new east-west arterial
- Grahams Ferry Road: 700 fewer vehicles north of Day Road
- Parkway Center Drive: 470 more vehicles south of Elligsen Road
- Ridder Road: 380 fewer vehicles west of 95th Avenue

The large differences shown on "new" roadways (i.e., the thickest red lines) were discussed further as increases on those facilities do not represent a negative impact. For the new roads, attracting traffic is desirable because the existing traffic is pulled from local and neighborhood routes and is now on a new arterial road. The intent of the new road is to attract trips where there had been none. Both cities have areas where there are traffic reductions.

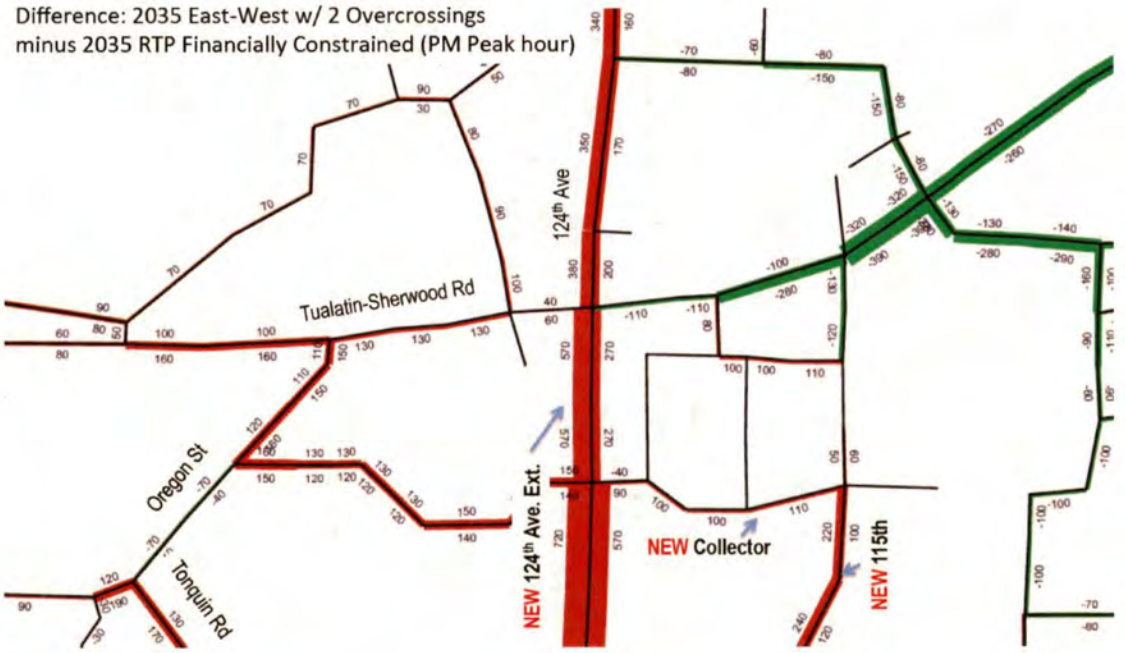
Traffic Impacts to Neighboring Areas: South Tualatin

Difference: 2035 East-West w/ 2 Overcrossings
minus 2035 RTP Financially Constrained (PM Peak hour)



Traffic Impacts to Neighboring Areas: Southwest Tualatin

Difference: 2035 East-West w/ 2 Overcrossings
minus 2035 RTP Financially Constrained (PM Peak hour)



Traffic Impacts to Neighboring Areas: North Wilsonville

Order of Overcrossings

The modeling shows that either overcrossing could occur first (2035) and provide benefit. However, the phasing order depends on the likely future development of the urban reserves area to the east. The Day Road overcrossing would remove trips from Elligsen/Boones Ferry, allowing improved interchange function. Less is known about the future land use patterns for the urban reserves area. The Day Road overcrossing would more likely occur sooner based on current land uses. The group asked some additional questions about the northern overcrossing for the east-west alignment. The overcrossing to the Frobase area (either on or parallel to Frobase) only works with the east-west alignment. The exact location of this future connection is unknown and would require additional planning. The area is only designated as urban reserves, not within the UGB, at this time.

Split Diamond Interchange

The earlier sense was that a major modification to a split diamond interchange would be a last phase – later than the overcrossings. However the findings show that the area west of Boones Ferry will already be at/beyond capacity for the network and a split diamond interchange provides no additional benefit as a next step. The team looked at the operations if the split diamond was phased before overcrossings of I-5. This did not provide benefit since it forced all the traffic into one location. There would need to be a grade-separated connection to Boones Ferry. The split diamond interchange on its own doesn't make sense as a solution. However, if the network is expanded even further in the future (well beyond

2035) then the I-5 overcrossings should be designed so as not to preclude a split diamond in the even longer term future.

Additional Discussion

Mayor Knapp expressed concern that the diagonal alignment did not work as well because it only includes one overcrossing. He didn't think it was a fair comparison since the east-west concept has the opportunity for two overcrossings. Both Chris and Andy Cotugno shared that the diagonal alignment had topographic issues that do not allow for a second overcrossing. Mayor Knapp responded that the difference between the networks should be described as a difference in the number of overcrossings, not an outcome of a specific corridor performance. Mayor Knapp was also concerned that the east-west alignment allowed for the parallel Tonquin Road to remain, allowing the concept to function better west of Grahams Ferry Road, while the diagonal alignment allowed for only Tonquin as an east-west facility west of Grahams Ferry Road. The group asked questions about the practicality of finding another east-west type alignment or crossing. Chris shared that there are numerous cost and environmental/topographical constraints. The factors that make the east-west alignment operate best is its ability to cross I-5 twice and separate the traffic from Tonquin Road – its location allows the ability to better disperse traffic. In addition, an engineering firm has done preliminary engineering work that determined the location of the east-west facility was the least cost location.

There was some continued discussion by all about the traffic impact maps. Mayor Knapp expressed concern that Tualatin roads benefit while Wilsonville roads have increased traffic. Most existing roads in Wilsonville, such as Ridder, Elligsen, and 95th, show reductions in traffic, while Parkway Center Drive shows an increase. Mayor Knapp said he is concerned by any red lines on I-5. Chris explained that the red line was representing only 100 extra cars per hour. In the future I-5 will have 6000 cars/hour, so the red line is not a significant increase. Bryan Cosgrove added that the maps do show some of the through-traffic coming off the Wilsonville streets and even some of the through-traffic leaving the interchange area (on Elligsen). Mayor Knapp asked that the team be sure to outreach to the businesses. Bryan said that the City would like to be able to be the contact for Wilsonville businesses. Chris Neamtzu and Kristen Kibler will work on that outreach to Wilsonville businesses prior to the open house.

Commissioner Roy Rogers asked if the cities had considered what they thought would be future boundaries and whether their thoughts for future land uses would be consistent with any new major arterial road locations. The group discussed that this would be part of the concept planning. He added that they all needed to commit to make a recommendation work. Mayor Knapp added that the Basalt Creek area was added to the UGB for regional needs and that the small cities should not have to carry the cost burden of this regional need. Jeanne said that the group could discuss at their next meeting how these types of projects are typically funded.

Councilor Monique Beikman asked a question that had been raised by Mayor Lou Ogden at a Tualatin Council meeting – why does the diagonal concept appear to function well through all phasing years, including 2035, and then fail so clearly in 2035 with development in urban reserves? Chris explained that the 2035 scenario with growth in the urban reserves adds a significant number of trips to the network

compared to the 2035 UGB-only scenario. The increase in volumes due to urban reserves is significantly higher than the difference in volumes between the 2030 and 2035 UGB-only scenarios, for example. Chris reminded the group that the 2035 scenario with urban reserves growth represents the planning horizon year model for this project, with development as assumed in the adopted RTP, and the scenarios with growth within the UGB only, including the 2035 UGB-only scenario, are considered interim years that assume a continued sluggish environment for development.

Roy Rogers asked how the project staff saw a $200M project like this being funded. Some of these projects (early phases of improving existing roads) are already factored into future regional plans. Andy Cotugno added that the MTIP looks at prioritizing money for specific regional projects every two years. This is likely one of those type of future regional projects, similar to Sunrise or the Helvetia or Troutdale interchanges. The region could look at this area for future regional funding now that these other regional projects are funded. In addition, projects that have a connection to industrial land usually are a higher priority. Andy added that future TIGER grants, local money, and the ability to pursue larger funds are all very likely for this type of project. Commissioner Rogers asked if this project was T'd up to seek that type of funding. Andy responded that it could be after the concept planning effort – once there is a plan for providing public infrastructure and annexing lands. He thought this project was probably about ten years behind the other large projects the region has recently seen funded. Chris called out the cost table in the Executive Summary – many of the phases of the project/costs are already planned in the RTP, although the actual funding is not available.

The PAG confirmed that the information should be taken out to the public.

Public Outreach

The group agreed the information was ready to take to the public. However, they asked that the matrix be made more understandable. There will be an open house on May 16th. Kristen Kibler will work with Chris Neamtzu in advance of the meeting for additional outreach to Wilsonville businesses. There will also be a meeting hosted by the Lucinis for Boones Ferry neighbors.

Public Comments

There was time allotted for public comments. Two people chose to make comments.

Linda Kellington represents the businesses of the Tonquin Industrial Group which provide many family wage jobs on Waldo just off of Tonquin Road. They object to anything that would harm regionally significant industrial lands, including the area that they successfully operate from now. They have heavy uses, freight movement, industrial services, etc. They are a healthy industry cluster now. They currently have good transportation access. They warn against incorporate uses that will be incompatible with their current industrial operations. They ask the decision-makers to keep their eye on the industrial ball.

Gordon Scott, neighbor on SW Boones Ferry Road, asked if Clackamas County has been consulted on the I-5 overcrossing toward Frobase. He is concerned that the Stafford area is already congested and may not help to provide a connection from SW 124th Ave. There was concern about how this would affect neighbors.

Continued PAG Discussion

Several on the PAG commented that the east-west alignment is near the Tualatin residential border. There would need to be future discussions on how to transition from residential to industrial uses and how to create a buffer to minimize future issues about compatibility of uses. The discussion of land uses is appropriate to raise during this effort, but no decision needs to be made at this time. This discussion will continue during the concept planning process.

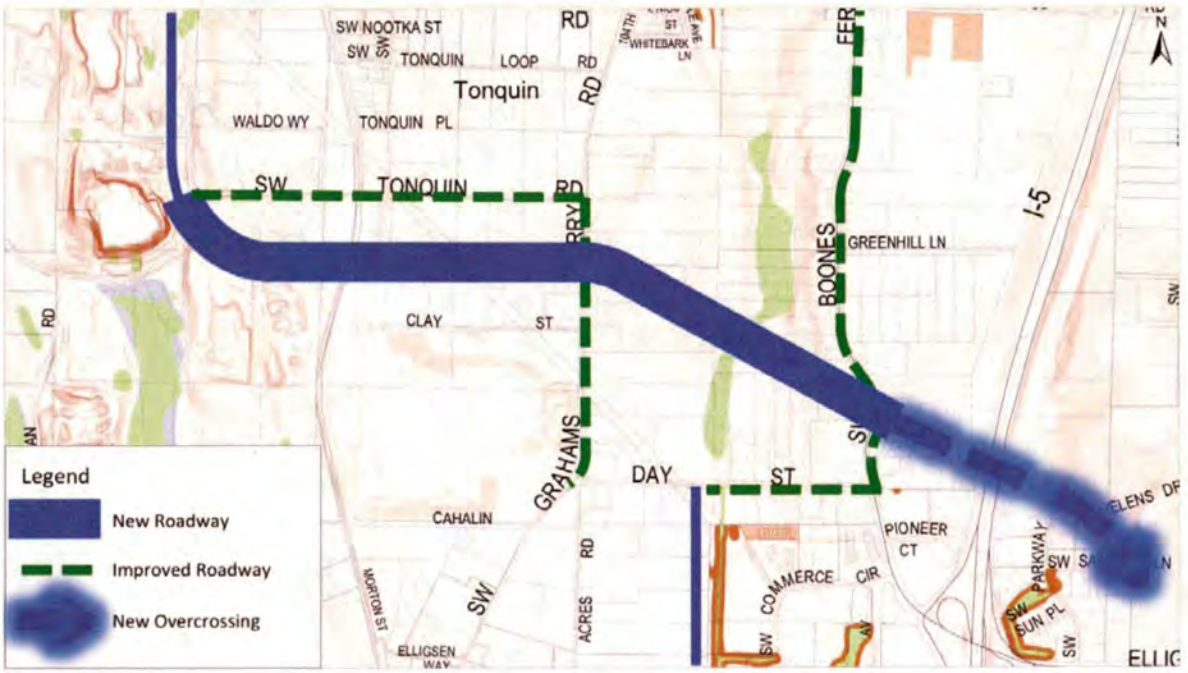
Next Steps

The open house and additional outreach will occur in May and then the PAG will meet to make recommendations on the transportation framework. That meeting has not yet been scheduled.

Diagonal Hybrid Concept

Why was this concept added?

This was developed to evaluate a diagonal concept that would be more comparable to the East-West Concept by providing a separate road for east/west regional traffic. Neighbors near Boones Ferry affected by the East-West Concept also requested a more viable diagonal concept that would move the regional traffic further south.



What does the Diagonal Hybrid include?

- A new east-west 5-lane road from the planned 124th Avenue Extension to Grahams Ferry Road.
- A new diagonal 5-lane road from Grahams Ferry Road toward I-5.
- Improvements to Tonquin Road, Grahams Ferry Road, and Day Road, bringing them up to urban standards, including curbs, sidewalks, and accommodation for bike use.

What does the concept do well?

+ It adds needed capacity west of Grahams Ferry Road, similar to the East-West Concept, by constructing a new 5-lane road and improving Tonquin to a 3-lane road.
+ Like the East-West Concept, by providing new roads for the regional traffic, it allows Tonquin Road, Grahams Ferry Road, and Day Road to serve the local access needs as the Basalt Creek area develops.
± It moves impacts of the new regional road further south along Boones Ferry; although it avoids impacts to some properties affected by the East-West Concept, it affects other properties further south.

What does the concept not do well?

– Due to topography, it only allows for one overcrossing of I-5. The East-West Concept is the only concept that allows for two overcrossings. As development occurs in the future, including in urban reserves areas, traffic volumes will be heavier on the new arterial if there is only one overcrossing of I-5. The traffic will be focused at the intersections of the new arterial with Grahams Ferry Road and with Boones Ferry Road, causing unacceptable performance at the intersections in the future.
– It costs more than the other concepts due to: (1) the added road west of Grahams Ferry Road and (2) the length of the structure needed to cross the Basalt Creek wetland diagonally.
– It has high environmental impacts due to the long crossing of the wetland area.

Basalt Creek Transportation Refinement Plan

DRAFT Open House Summary

May 16, 2012 5:30 – 7:30 p.m.
Tualatin High School

Washington County held an open house for the Basalt Creek Transportation Refinement Plan that will identify the major transportation framework in the Basalt Creek area prior to land use concept planning. The event was held on Wednesday, May 16th from 5:30 to 7:30 p.m. at Tualatin High School, which is just north of the Basalt Creek planning area. Eighty-two citizens signed into the event. Staff from Washington County, the cities of Tualatin and Wilsonville, Metro, DKS Associates (transportation consultants) and JLA Public Involvement attended the event to discuss the planning process with stakeholders, answer questions, and listen to community concerns. Attendees were also able to learn more about Washington County's Major Streets Transportation Improvement Program (MSTIP 3d), specifically projects being considered in south Washington County, and also the Tonquin Trail Project which is being planned in the area. In addition, attendees were able to pick up information about upcoming events for both the Tualatin and Wilsonville Transportation System Plan efforts.

The open house was advertised through a newsletter mailed to approximately 2,000 addresses, a press release, an additional letter mailed by the City of Wilsonville, e-mails to various interested parties, and the project website. The *Wilsonville Spokesman* reported on the open house.

The open house provided an opportunity for area residents, businesses, and property owners to learn more about the Basalt Creek Transportation Refinement Planning effort and give feedback on the concepts evaluated prior to any decisions on the major transportation framework being made by the effort's partners. The Policy Advisory Group will be making those recommendations this summer (meeting has not been scheduled at this time).

Meeting format and information presented

The open house was organized to share the following information:

- Basalt Creek Transportation Refinement Plan background, planning area, and process schedule
- The arterial framework and I-5 connection concepts evaluated
    - Three arterial concepts that would link the planned extension of SW 124th Avenue to Boones Ferry Road were evaluated. The concepts are to improve existing roadways, develop a new diagonal alignment, or develop a new east-west alignment.
    - Four concepts that could provide a future connection to I-5 via overcrossings or major modifications to the interchange were also evaluated.
- The evaluation findings; specifically how the concepts addressed the ability to phase, to support for development, environmental impact, consistency with the Regional Transportation Plan, traffic operations, and constructability
- Additional technical detail that had been requested by partner staff and elected officials during the process, including topographic detail and preliminary engineering in some areas that further refined or confirmed feasibility for conceptual alignments

A ten minute overview presentation was given three times during the event to familiarize attendees on the purpose of the meeting, the information available, and the process for the transportation refinement planning.

What was heard from attendees

Most people were familiar with the planning effort's need to identify and develop a major arterial road framework for this area. The Basalt Creek planning effort is identified in the Regional Transportation Plan, however, a few were unaware of this until the event. At least one community member shared that they did not know their property was located within the Urban Growth Boundary. Many expressed interest in timing of the planning effort process, how it might affect property values (both during the planning process and also once it is in place), how it might affect neighborhood livability and character, and how it might affect existing business operations or potential development opportunity.

As of 5/30/12, the project received 16 written comment forms, one letter, and a few general phone calls regarding the transportation refinement plan process. Verbatim comments from the comment forms have been documented in a separate spreadsheet (attached to pdf).

A summary of the common topics heard is below. This is not a summary of the comment forms, which can be viewed separately.

Impacts to existing residences – Many residential neighbors from SW Boones Ferry Road and the southern residential developments in Tualatin attended the open house. Several residents expressed concern about how the new roadway would affect livability (increased traffic and noise, environment, etc.) and property values for individual homes or neighborhoods. Several preferred a concept that used the existing roads or a desire to see any new arterial as far south from the existing neighborhoods as possible. Several neighbors wanted to learn more about specific right-of-way impacts.

Impacts to existing industrial lands or other businesses – Businesses, specifically in the Tonquin Industrial area, have concerns about their ability for continued access and successful operations in the future. This is related to both transportation access and compatibility of changing land uses in the area. A few business representatives that attended (County and Wilsonville properties) were interested in how any of the road alignments might specifically affect the current use of properties or ability to develop their properties in the future.

Traffic operations – Many people asked specific questions about how I-5 and the interchange affect the traffic in the area, how any new roadways affect operations on I-5, and where the traffic is coming from and going to. There was some general concern that this may shift areas of congestion and a result would be increased traffic in residential neighborhoods. Overall, attendees believed that the current infrastructure would not meet future travel demands.

Timing/Phasing – Many open house attendees had questions about the timing or phasing of any future projects. Some were related to right-of-way needs and when individual property owners may be affected. Others wanted to know when future land uses would be identified through the concept planning process; they felt the use of their property or ability to sell was being stalled or affected current property values. Others wanted to know when changes to the area may affect their current

use, such as rural residential areas or rural businesses (nurseries, etc). Others were interested in development potential in the area.

Evaluation – Many expressed a desire to select the concept that best met the long term transportation needs for the area. Several people did not agree with the findings on transportation or the need for the project. There was also some questioning of the traffic modeling information; several believed that the existing roads, if improved, should be able to handle the future increase in traffic.

Long-term focus –Many asked about the relationship to the I-5/99W Connector and questioned whether this road would link to Sherwood (99W). While this planning effort will need to allow for future development of the Southern Arterial that was identified through that study and included in regional plans, this effort is not intended to identify a specific future extension alignment to the west. There was also much interest in the future land uses in the area; this would be done during concept planning.

The maps and other displays from the open house can be found at www.basaltcreek.com - under the "Transportation Refinement" tab. The Policy Advisory Group will meet to make recommendations later this summer. That meeting has not yet been scheduled.

The individual written comments collected during the open house are also available (attached as pdf).

				distance between the buildings will not accommodate a 3 or 5 line roadway.	affected properties, adversely affecting our ability to sell, or receive fair compensation in the interim while these proposals loom.			
current businesses. Please ustrial Group access from Way to Tonquin Rd. the nembers own 50 acres and	Less stops and better flow to I-5 area.	Please, again, consider existing businesses, the Tonquin Industrial Group	Faster road	Less access		Newsletter, email, word of mouth	97062	Live, Own property/bu work
	2nd best choice			Worst alternative. This option keeps the major negative environmental impacts closest to established housing area.	Avoid or minimize phasing major highway new existing housing development and schools!		97062	Live, Own property/bu
		Still too close to schools and neighborhoods.	Nothing!	This alignment would impact schools and neighborhoods in a very negative manner. Too much pollution, noise, and additional traffic.	The area is growing much slower than prior estimates. Please avoid placement near neighborhoods and schools. Air pollution is a problem now in our area. The additional noise and pollution would render outside activities dangerous!	Email, website	97062	Live, Owner property/
cept will not address the)35. A five lane road or 3 is still a five lane road mount of traffic.	This is my second favorable option and appears to be adequate.		Nothing. It is disruptive to the Dairy Belle neighborhood. Besides, it is the most expensive and would lead to much larger costs to connect it to I-5.	This option crosses a wetland which is of great concern. The other options, #1 has no impact, and #2 has minimal wetland impacts.	Keep in mind that the connection should be the least disruptive and provide the best value for the citizens of the community.	Newsletter, email	97062	Live, Owner property/
o our property be . Knife River, Coffee Lake th rail connection.		Same as above.		Same and 1 and 2.		Newsletter	97389	Own property/busine
		It overlays existing residential areas at Boones Ferry. It is too expensive compared to Concept 1. It is too close to existing low density residential areas in South Tualatin.		It is too expensive. It negatively affects the quality of life and property values of thousands of south Tualatin residents. Neighborhood impacts should be a criteria for building 224-size roads, and this process is completely ignoring them.	Why did everyone give up on improving traffic flow on 99@ and TSR? Remove 2/3 of the traffic lights, build service roads as Sherwood did, and build 2 more bridges over the Tualatin River - one at 65th and one at Hall. You don't need a 224 size road next to neighborhoods to move traffic.	Newsletter mailing, email, word of mouth, website .	97062	Live, Owner property/ commute through
long term and some money		Ok but we are not there yet, doesn't work long term.	I prefer this option, it is more long term and fits better into the future 99W-I5 connector planning. Handles traffic better and less impact on adjacent properties of Concept 2.				97062	Live, own property/bu
				Very expensive, dumps industrial traffic in close proximity to existing neighborhoods. What is vertical component of cement lines (on schematic), not clear to public.		Email	97062	None
. a really long time to raffic for the area.	The roads are easier to get places.	Well traffic accidents, and same as above.						Live
		It comes through my living room.				Email	97062	Live, Own property/bu commute through
	Cost	I still like concept #3	Makes the most sense	Needs to connect with I-5	Fix Hwy 217 and US 26 - They back up traffic to Hillsboro. I-5 is better but needs to be even wider, back up traffic goes through communities. Do not built a connector through Tualatin park, look at Tualatin Sherwood Rd.	From CIO	97062	Commute through
	See concept #3		The straight line aspect would facilitate residential development to the North which would be desirable - also park lands (a must!)	If industrial development is permitted to the south, it should contain angle space for park land and possible commercial development.	If it is true that an interchange with I-5 is not possible, it would certainly help to have a way to connect with I-205 with a bridge OVER I-5.	Newsletter mailing	97062	Commute through
	Don't like.		Fewer curves, but don't like the idea of major road near home.			Newsletter mailing	97062	Live, commute throug
			We want parks and residential areas built out from Tualatin. This road would most effective for moving trucks out of 124th and to the freeway. If we ever get a direct route to 99W this would be the best base road.			Newsletter mailing	97062	Live
e problem in the future.	The extension to Kinsman is very good idea for obvious traffic relief. Most preferred by the citizens of the community. Less intrusive on homes and businesses.	Its not an ideal route as planned. Needs to go a little further south from this proposal to alleviate the bridge problem using instead a landfill and culvert type breaching of the wetlands.	Absolutely nothing.	Very intrusive on breaching the wetlands, and if a bridge is built it would be on an up slope. Bridge surfaces freeze on the uphill grades, not a good idea. Also very intrusive to wildlife in this area. Our wells are just within feet of your proposed routes. What about sound barriers? Noise deflections? We need to know exact figures on placement of roadway and buffer zones for example as it relates to the 224 expressway in Milwaukie, according to the aerial photo shown here at this meeting tonight. Some of the 224 route shows several hundred feet of right of way. You've designated this route with no specifics. You've already put encumbrances on our property, and neighbor's properties to the point now that our valuations will be permanently affected and we won't be able to sell and when we refer this problem to your representatives, you pass it on to the cities of Tualatin and Wilsonville and they have nothing to say about it. So where does that leave us? More concerns, objections will be discussed at a meeting coming up in the neighborhood being planned now, as we understand it. Thank you for listening to our concerns.		Newsletter mailing	97062	Live, own property/bu work

City of
WILSONVILLE
in OREGON

CITY COUNCIL MEETING
STAFF REPORT

Meeting Date: **Work session -- September 6, 2012**	**Subject: Transit Fare Increase Proposal** **Staff Member: Allen/Lashbrook** **Department: Transit**
Action Required	**Advisory Board/Commission Recommendation**
☒ **Motion** ☐ **Public Hearing Date:** ☐ **Ordinance 1st Reading Date:** ☐ **Ordinance 2nd Reading Date:** ☐ **Resolution** ☐ **Information or Direction** ☐ **Information Only** ☐ **Council Direction** ☐ **Consent Agenda**	☐ **Approval** ☐ **Denial** ☐ **None Forwarded** ☒ **Not Applicable** **Comments:** **This item is scheduled for work session on September 6, with a public hearing and enactment scheduled for September 17.**
Staff Recommendation: **Work session item for discussion only.**	
Recommended Language for Motion: **N/A – work session item for discussion only.**	
PROJECT / ISSUE RELATES TO: *[Identify which goal(s), master plans(s) issue relates to.]*	
☐ Council Goals/Priorities	☐ Adopted Master Plan(s) ☒ Not Applicable

ISSUE BEFORE COUNCIL: Fares on Routes 2X (Barbur; $1.25), Route 3 (Canby; $1.25), and the out-of-town Dial-a-Ride service for Elderly and Disabled ($2.00), have not increased since 2006 when fares were first introduced on these routes. Route 1X (Salem) had an increase from $2.00 to $2.50 in 2008.

EXECUTIVE SUMMARY: Staff is recommending an across-the-board fare increase for out-of-town trips. The increase is being recommended for two reasons: 1. Costs, both in personnel and fuel have continued to rise annually. The proposed increase will seek to recover some of these expenses. 2. The increase in fares will ensure that riders will pay their fair share of the additional expenses and that these increases will not be borne by Wilsonville businesses alone.

Staff does not project a significant loss of ridership with these fare increases. Most riders recognize the value of the service and realize that taking public transit is less expensive than driving their personal vehicles. Even with any decrease in fuel prices that may occur in the Northwest, such decreases are not expected to be significant enough to tilt the commute cost in

favor of the private automobile. Over the long run, we expect the costs of both gasoline and diesel fuel to continue to increase.

Salem-Keizer Transit, also known as Cherriots, has proposed that the 1X cash fare be increased to $3.00 and the cost of a monthly pass increased from $55.00 per month to $65.00. This is approximately a 20 percent increase and SMART staff believes that this is an acceptable proposal for service that has not had an increase in four years. This route is shared by Cherriots and SMART. Any fare or service change must be mutually agreed upon so that expenses, revenues, and service can be shared equitably between the two agencies.

In line with the 1X increase, staff recommends similar increases to Routes 2X and 3. This would increase the cash fare from $1.25 to $1.50, with the cost of a monthly pass going from $30.00 to $35.00. Staff also proposes the elimination of the extra $5.00 discount if one buys both the 1X pass and the Zone 2 pass. Buying these passes separately, the cost would be $85.00, but with the extra discount, the cost has been $80.00. Since both passes are already discounted, staff feels that further discounts are unwarranted. The proposed two-pass costs would therefore rise from $80.00 to $100.00 a month. Since the startup of WES, this pass combination has dropped to 3 or 4 buyers a month.

Regarding the Elderly and Disabled out-of-town Dial-a-Ride, staff proposes a cash fare increase from $2.00 to $3.00, with an increase in the monthly pass from $40.00 to $50.00. Sales of monthly passes for this service are low, as this service is exclusively for medical trips. The passenger would have to ride 20 times a month to break even. Except for dialysis patients, most do not have a need for that much service during the month. This service is a grant-based service with federal funds paying for most of the expenses incurred.

The chart below highlights the proposed changes. The city limits of Wilsonville itself will still be considered a fare-free zone.

Route	**Current** monthly pass	**Current** cash fare	**Proposed** monthly pass	**Proposed** cash fare
1X	$55.00 ($27.50)	$2.50 ($1.25)	$65.00 ($32.50)	$3.00 ($1.50)
2X, 3	$30.00 ($15.00)	$1.25 ($.60)	$35.00 ($17.50)	$1.50 ($.75)
Dial-a-Ride	$40.00	$2.00	$50.00	$3.00

Fares in parenthesis are senior/disabled/youth, as required by law.

In addition to the above, SMART currently offers a Zone 2, 18-ride punch-pass for $18. Staff proposes an increase to $22.50.

RECOMMENDATION:
This item is scheduled for work session discussion on September 6, 2012 with Council action scheduled for September 17, 2012. No action is needed at the work session unless the City Council wants to direct the staff to prepare other changes for Council consideration.

EXPECTED RESULTS:
Effects on ridership/Equity Issues:

Staff does not project a significant loss of ridership with the proposed fare increases. Even with the anticipated increases in fuel costs, a steeper fare increase could be expected to have an adverse effect on ridership. Anecdotal evidence suggests that significant fare increases can cause a ridership reduction to be in the 15-25 percent range, or up to 35,000 annual rides, representing about 9 percent of our total ridership. The proposed fare increase, although perhaps seeming initially high to some, compensates for the last 4-6 year period of no fare increases. With the proposed increase, staff estimates an initial ridership loss of up to 5 percent, with ridership returning within a year. This is due to the recognized value in the service. If fuel prices plummet for some reason, it may take a longer period to recover the initial passenger drop-off.

Federal Title VI requirements mandate consideration of the effects of any changes to transit fares on minority and low income populations. Unfortunately, SMART has no definite demographic information about our riders, other than those who receive reduced fares because they are elderly or disabled. The lack of more detailed information necessitates a certain amount of extrapolation and reliance on anecdotal information in order for SMART to comply with the federal requirement. On one hand, SMART offers in-town rides (on both fixed routes and dial-a-ride) without charging any fare and that is not proposed to change. Therefore, low income and minority riders will not be affected by the fare increases insofar as travel within the city limits is concerned. Anecdotal information would indicate that SMART's highest minority ridership for fixed route out-of-town travel comes on Route 3 (Canby). While the cash fare on that route is proposed to be increased by 20 percent (just as with the 1X and 2X routes), the proposed monthly pass rate for Route 3 is proposed to be increased by less than 17 percent (2 percent less than the monthly pass rate for the 1X route). In other words, the fare increase on the fixed route that is believed to carry the highest percentage of minority riders is slightly lower than the increase for the busiest out-of-town route.

Given that a relatively high percentage of elderly and disabled riders may be on fixed incomes, any increase in fares for Dial-a-Ride service must be carefully considered. It is important to note that dial-a-ride customers will continue to travel for free within the city limits. The proposed out-of-town dial-a-ride cash fare increase from $2.00 to $3.00 is a 50 percent increase, but it still represents only a small fraction of the actual cost of providing this service (averaging $26.97, after subtracting federal assistance, per trip in fiscal year 2010/11).

It should be noted that, even with the outreach effort and publicity about the proposed changes, the City has thus far received minimal public reaction to the proposed increases, including no reaction from lower income or minority members of the community.

TIMELINE:
Staff recommends that the City Council conduct a public hearing on September 17, 2012 and enact the proposed fare increases with an effective date of October 1, 2012. This will coordinate with the implementation date for fare increases set by Salem-Keizer Transit.

CURRENT YEAR BUDGET IMPACTS:
Revenue projections for fares in the 2012/13 budget are expected to be increased by about 12-15 percent.

FINANCIAL REVIEW / COMMENTS:
Reviewed by: JEO Date: 8-22-12
The proposed increase to transit fares appears reasonable based on the fact that there has not been any fare increases in the previous 4-6 years. The fare increase was not budgeted in 2012-13, but the additional revenue will be used to offset operating costs in the Transit Fund.

LEGAL REVIEW / COMMENT:
Reviewed by: MEK_____ Date: ____8/24/12_____
Legal has no comment to the proposed fare increases. Informational note: the report states that "SMART has no definitive demographic information about our riders, other than those that receive reduce fares because they are elderly or disabled." Federal Title VI requirement for keeping demographic statistics for low income and minorities apply to transit service areas over 200,000; and therefore, such statistics are not required of SMART.

COMMUNITY INVOLVEMENT PROCESS:
Notice of the opportunity for the public to comment on the fare increase was published in The Oregonian and The Wilsonville Spokesman. Additionally, this notice was posted in buses, in transit shelters, at bus stops, and on our website. A meeting for public comments was conducted on July 30, 2012, in the Council Chambers from 7:00pm to 8:00pm. This meeting was convened to allow the public to comment in person on the proposed fare increase. Additionally, the public was invited to comment via email and standard mail. No one attended the public meeting. As of August 10, 2012, we have received a total of only three comments, none expressing an argument against the fare increase. Prior to action on September 17, 2012 the City Council will need to conduct a public hearing on the proposed fare increases. The staff has made arrangements to have a Spanish language translator available at the hearing.

POTENTIAL IMPACTS or BENEFIT TO THE COMMUNITY: Implementation of this fare increase will only impact out-of-town riders. If implemented, it will benefit local businesses which support SMART through payroll taxes.

ALTERNATIVES: Smaller and larger fare increases were considered. Staff believes that a 20 percent increase for fixed route and a 50 percent increase for out of town Dial-a-Ride are both reasonable increases. The City Council may want to consider future fare increases on an annual basis, perhaps as part of the budget process.

CITY MANAGER COMMENT:

ATTACHMENTS
A. Summary of proposed fare increases.

ROUTES & FARES

August, 2012

Proposed changes effective October 1, 2012

1X	**Salem**	**$2.50/$1.25** ***$3.00/$1.50***	6 a.m. to 6:32 p.m.	**Pass: $55.00/Mo** ***Pass: $65.00/Mo***
2X	**Barbur**	**$1.25/$.60** ***$1.50/$.75***	5:05 a.m. to 8:05 p.m.	**Pass: $30.00/Mo** ***Pass: $35.00/Mo***
3	**Charb. – Canby**	**$1.25/$.60** ***$1.50/$.75***	6:25 a.m. to 6:37 p.m.	**$30.00/Mo** ***$35.00/Mo***
4	**Wilsonville Rd.**	**$.00** ***$.00***	5:20 a.m. to 7:36 p.m.	
5	**95th Ave.**	**$.00** ***$.00***	5:25 a.m. to 7:06 p.m.	
6	**Canyon Creek**	**$.00** ***$.00***	6:29 a.m. to 7:33 p.m.	
V	**Villebois**	**$.00** ***$.00***	6:32 a.m. to 5:37 p.m.	
Out-of-town dial-a-ride		**$2.00** ***$3.00***	7:30 a.m. to 5 p.m.	**Pass $40.00/Mo** ***Pass $50.00/Mo***
Zone 2 Punch Pass		**$18.00 for 18 rides** ***$22.50 for 18 rides***		

- **All fixed route departure times shown from SMART Central.**

CITY COUNCIL ROLLING SCHEDULE
Board and Commission Meetings 2012

SEPTEMBER

Date	Day	Time	Event	Place
9/3	Monday		Labor Day City offices closed	
9/6	Thursday	7 p.m.	City Council Meeting	Council Chambers
9/10	Monday	6:30	DRB Panel A	Council Chambers
9/12	Wednesday	6:00 p.m.	Planning Commission	Council Chambers
9/17	Monday	7 p.m.	City Council Meeting	Council Chambers
9/24	Monday	6:30 p.m.	DRB Panel B	Council Chambers

COMMUNITY EVENTS

Neighborhood BBQs
Landover/Meadows Park – Thursday September 13 – 5 p.m.

Water Features Close September 15

Wilsonville Farmers Marker
Sofia Park 28836 SW Costa Circle Villebois
Every Thursday beginning June 28 – 4 p.m.
Farmers Market will close September 27

Beauty & the Bridge Dedication Event
Sunday, September 23 – Noon – 1:30 p.m. (times tentative)

The Conversation Project Unplugged
September 22 --1:00 PM - 2:30 PM
Graham Oaks Nature Park
Don't miss out on berry pie and a lively conversation about using and preserving Oregon's natural resources at Graham Oaks Nature Park. For more information about Metro parks call 503-797-1850 or visit www.oregonmetro.gov/parks This event is free.

CITY OF WILSONVILLE
CITY COUNCIL MEETING MINUTES

A regular meeting of the Wilsonville City Council was held at the Wilsonville City Hall beginning at 7:00 p.m. on Monday August 6, 2012. Mayor Knapp called the meeting to order at 7:14 p.m., followed by roll call and the Pledge of Allegiance.

The following City Council members were present:
- Mayor Knapp
- Council President Núñez - excused
- Councilor Goddard
- Councilor Starr

Staff present included:
- Bryan Cosgrove, City Manager
- Jeanna Troha, Assistant City Manager
- Mike Kohlhoff, City Attorney
- Sandra King, City Recorder
- Kristen Retherford, Urban Renewal Manager
- Barbara Jacobsen, Assistant City Attorney
- Chris Neamtzu, Planning Director
- Stephan Lashbrook, SMART Director
- Dan Knoll, Public Affairs Coordinator
- Nancy Kraushaar, Community Development Director
- Joanne Ossanna, Finance Director
- Katie Mangle, Long Range Planner

Motion: Councilor Starr moved to approve the order of the agenda. Councilor Goddard seconded the motion.

Vote: Motion carried 3-0.

MAYOR'S BUSINESS

A. Approval of City Manager Contract

Mayor Knapp said this is the first year of Mr. Cosgrove's contract and the Mayor talked about the challenges faced and met during the past year.

Motion: Councilor Starr moved to approve the extension of Mr. Cosgrove's contract as the City Manager from July 1, 2012 to June 20, 2013 at a base salary of $128,125 and total compensation package of $148,201 as outlined in the employment agreement. Councilor Goddard seconded the motion.

Councilor Starr commented the entire Council was pleased with Mr. Cosgrove's job performance this past year, including the recent department director hires, proposing the bond for the Waste Water Treatment Plant, and improving the City's credit rating. Overall he appreciated Mr. Cosgrove's professionalism, good judgment, and desire to be financially prudent but fair. The Councilor explained the merit increase is 2.5 percent base salary increase, with several other increases that accumulate to the final salary amount, including an increase in the retirement contribution and the ability to cash in vacation days.

Councilor Goddard added he was impressed with how Mr. Cosgrove focused on meeting the challenges directed by the Council, in particular the reduction of the budget by $1 million and increasing the bond rating. He looked forward to continuing the partnership.

Mayor Knapp agreed stating the City has made progress during the past year. The Mayor acknowledged the successes in Wilsonville have been built over decades, and future success builds on the shoulders of the past. He felt it was important to maintain the direction and quality of the community as was documented in the recent city-wide survey.

Mr. Cosgrove stated it was a pleasure coming to Wilsonville and he looked forward to working with the Council in the next year. He acknowledged the work of the employees of the City of Wilsonville.

Vote: Motion carried 3-0.

B. Upcoming Meetings

The Mayor reported on the meetings he attended on behalf of the City of Wilsonville including the Oregon Mayor's Conference in Florence. He thanked the many businesses and volunteers who make the annual Fun in the Park celebration such a successful event and provided a brief update on the work of the Planning Commission. The Mayor noted he had received a letter from Penske Corporation that expressed appreciation of Officer Wildhaber's work regarding a fraud situation which was quickly resolved.

COMMUNICATIONS

Mr. Cosgrove introduced the new department directors and provided a brief background for each of them. They are Nancy Kraushaar – Community Development Director; Katherine (Katie) Mangle – Long Range Planning Manager; and Joanne Ossanna – Finance Director. All three represent competence, are customer driven, and well respected in their field and profession.

CITIZEN INPUT & COMMUNITY ANNOUNCEMENTS

This is an opportunity for visitors to address the City Council on items ***not*** on the agenda. It is also the time to address items that are on the agenda but not scheduled for a public hearing. Staff and the City Council will make every effort to respond to questions raised during citizens input before tonight's meeting ends or as quickly as possible thereafter. Please limit your comments to three minutes.

Doug Neeley, Mayor of Oregon City, Oregon, advised the Council the decision to hire Nancy Kraushaar, former Oregon City employee, as Wilsonville's Community Development Director was a great decision.

Doris Wehler thought the flaggers who are employed in the project to fix the Boeckman Road dip were doing an excellent job of handling the traffic and asked that her sentiment be shared with them.

COUNCILOR COMMENTS, LIAISON REPORTS & MEETING ANNOUNCEMENTS

Councilor Goddard – Library, Chamber Board, and Clackamas County Business Alliance (CCBA) liaison reported at the CCBA meeting a Tri-Met representative discussed their budget challenges. The Councilor spoke about the community events he had recently attended and thanked the many volunteers who help to

make these events successful. He announced the following upcoming activities, Scenic Trolley Tours, Wilsonville Sunday Streets, and the neighborhood BBQs.

Councilor Starr –Development Review Boards and Wilsonville Community Seniors Inc. liaison, reported on the DRB application approvals. He announced the next Movies in the Park as well as Rotary Summer Concert, and the Wilsonville Farmers Market in Sophia Park in Villebois.

Councilor Starr wanted to recognize four community volunteers in particular and recommended sending letters of commendation to those volunteers and their sponsoring organizations. The four are: Pat Duke, Kiwanis President for the Fun Run, and the Dolly Parton Imagination Library program; Jenna Holbrook of Grace Chapel for organizing the city-wide rummage sale which aids the less fortunate; Wendy Buck, Chamber of Commerce President for work on economic development, updating the sign code, mentoring high school students, and Chamber sponsorship of local events; and Dan Knoll, Rotary President for organizing the summer concerts and the work Rotary does towards eradicating polio, as well as their work with TACE.

Motion: Councilor Starr moved to recognize Pat Duke, Jeanna Holbrook, Dan Knoll and Wendy Buck for their outstanding work with the community and their volunteer efforts. The motion was seconded by Councilor Goddard.

Vote: Motion carried 3-0.

Mayor Knapp will sign the letters on behalf of the City Council.

CONSENT AGENDA

Mr. Kohlhoff read the titles of the Consent Agenda items into the record.

A. **Resolution No.2374**
A Resolution Of The Wilsonville City Council, Acting As The Local Contract Review Board, Authorizing South Metro Area Regional Transit (SMART) To Purchase One, 40-Foot, Low Floor, Heavy Duty Clean Burning Diesel Bus Through The 2010 Lane Transit District RFP Option.

B. Minutes of the July 2, 2012 City Council Meeting

Motion: Councilor Goddard moved to approve the Consent Agenda. Councilor Starr seconded the motion.

Vote: Motion carried 3-0.

CITY MANAGER'S BUSINESS

Mr. Cosgrove announced the National Night Out event that was taking place in a variety of neighborhoods throughout town.

LEGAL BUSINESS – There was no report.

ADJOURN

Motion: Councilor Goddard moved to adjourn. Councilor Starr seconded the motion.

Vote: Motion carried 3-0.

The Council meeting adjourned at 8:23 p.m.

Respectfully submitted,

Sandra C. King, MMC, City Recorder

ATTEST:

TIM KNAPP, MAYOR

City of
WILSONVILLE
in OREGON

CITY COUNCIL MEETING
STAFF REPORT

Meeting Date: September 6, 2012	Subject: Collective Bargaining Agreements; SEIU Local 503 and Wilsonville Municipal Employee Association (WilMEA) Resolution No. 2379 Staff Member: Jeanna Troha Department Admin/HR
Action Required	**Advisory Board/Commission Recommendation**
☐ Motion ☐ Public Hearing Date: ☐ Ordinance 1st Reading Date: ☐ Ordinance 2nd Reading Date: ☒ Resolution ☐ Information or Direction ☐ Information Only ☐ Council Direction ☐ Consent Agenda	☐ Approval ☐ Denial ☐ None Forwarded ☒ Not Applicable **Comments:**
Staff Recommendation: Approve the FY 2012-2015 SEIU Local 503 and WilMEA Collective Bargaining Agreements (CBA) as negotiated and ratified by represented employees; and authorize the city manager to execute these agreements.	
Recommended Language for Motion: Move the approval of FY 2012-2015 Collective Bargaining Agreement with SEIU Local 503 and FY 2012-2015 Collective Bargaining Agreement with Wilsonville Municipal Employee Association and authorize the city manager to execute such agreements	
PROJECT / ISSUE RELATES TO: *[Identify which goal(s), master plans(s) issue relates to.]*	
☐Council Goals/Priorities	☐Adopted Master Plan(s) ☒Not Applicable

ISSUE BEFORE COUNCIL:

Oregon State Statute requires city councils to approve all Collective Bargaining Agreements between the City of Wilsonville and union and/or local association.

EXECUTIVE SUMMARY:
The Collective Bargaining Agreement with SEIU Local 503 expired June 31, 2012. The City began bargaining with the union in January. During the bargaining process, a petition was filed with the Employee Relations Board (ERB) for a change in representation and consequently bargaining was put on hold until ERB rendered a decision. Once the change in representation was approved, the City began bargaining two separate contracts. The City now has two collective bargaining agreements; one with SEIU, which now represents transit employees, and one with Wilsonville Municipal Employee Association (WilMEA), which now represents the general unit. The bargaining process was successful and resulted in two new collective bargaining agreements. The collective bargaining agreements are for a three year term; FY 2012-2015. Both contracts are within the City's 5 year financial forecast and market comparisons with other comparable cities. Below is a summary of the compensation provisions for both contracts.

Summary of Economic Results: 3 year agreement - 2012-2015

Wage Adjustments	**SEIU**	**WilMEA**	2011 CPI-W Portland/Salem annual
Oct. 2012	0.5%	0.5%	3.0%
July 2013	1.5%	1.75%	
Jan. 2014	0%	0%	Insurance Cost Share WilMEA 90%/10% (*was 92/8*)
July 2014	2.5%	2.5%	
Jan. 2015	0.5%	0%	Insurance Cost share SEIU 90%/10% (*was 92/8*)

EXPECTED RESULTS:

TIMELINE:

CURRENT YEAR BUDGET IMPACTS:
The 5 year financial forecast was used to ensure both contracts were within those projections.

FINANCIAL REVIEW / COMMENTS:
Reviewed by: JEO_____ Date: 8/24/12_____

The collective bargaining agreements presented in the resolution are within the 5-year financial forecast, and the 2012-13 adopted budget is sufficient to meet the financial requirements.

LEGAL REVIEW / COMMENT:
Reviewed by: _MEK_____ Date: Aug 23, 2006_____

LGPI provided the legal assistance in negotiating and drafting the contracts. A legal representative from LGPI will be present to advise the Council at the September 6, 2012 Council meeting should there be any questions.

COMMUNITY INVOLVEMENT PROCESS: N/A

POTENTIAL IMPACTS or BENEFIT TO THE COMMUNITY (businesses, neighborhoods, protected and other groups): N/A

ALTERNATIVES: N/A

CITY MANAGER COMMENT:
The city's two bargaining units have ratified new, three-year agreements. The process for coming to terms took several months longer than originally anticipated due to the bifurcation of non-transit employees into a new, local association hence forth known as WilMEA. The agreements before Council fall within the City's expected revenue forecast as set forth in the Wilsonville 5-Year Financial Forecast, and therefore are sustainable into the foreseeable future.

ATTACHMENTS
A. Resolution No. 2379

RESOLUTION NO. 2379

A RESOLUTION ADOPTING COLLECTIVE BARGAINING AGREEMENTS BETWEEN THE CITY OF WILSONVILLE AND SEIU LOCAL 503 AND BETWEEN THE CITY OF WILSONVILLE AND WILSONVILLE MUNICIPAL EMPLOYEE ASSOCIATION (WILMEA)

WHEREAS, the City of Wilsonville and SEIU Local 503 have negotiated a three -year collective bargaining agreement for FY 2012-2015;

WHEREAS, the City of Wilsonville and Wilsonville Municipal Employee Association have negotiated a three-year collective bargaining agreement for FY 2012-2015.

NOW, THEREFORE, THE CITY OF WILSONVILLE RESOLVES AS FOLLOWS:

1. The City Manager is authorized on behalf of the City to execute the negotiated and ratified collective bargaining agreement with SEIU Local 503 for FY 2012-2015, attached here as Exhibit-A as if fully set forth herein.
2. The City Manager is authorized on behalf of the City to execute the negotiated and ratified collective bargaining agreement with Wilsonville Municipal Employee Association for FY 2012-2015, attached here as Exhibit-B as if fully set forth herein.

ADOPTED by the City Council of the City of Wilsonville at a regular meeting thereof this 6rd day of September, 2012, and filed with the Wilsonville City Recorder this date.

_____
TIM KNAPP, MAYOR

ATTEST:

_____
Sandra C. King, MMC, City Recorder

SUMMARY OF VOTES:
Mayor Knapp

Councilor Nunez

Councilor Goddard

Councilor Starr

Attachments:

- Exhibit A - Collective Bargaining Agreement with SEIU Local 503 For FY 2012-2015
- Exhibit B - Collective Bargaining Agreement with Wilsonville Municipal Employee Association For FY 2012-2015

Welcome to Wilsonville...

Collective Bargaining Agreement

Between
City of Wilsonville
and
SEIU Local 503, OPEU
Transit

Effective July 1, 2012 through June 30, 2015

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PREAMBLE

This Agreement is entered into between the City of Wilsonville, hereinafter referred to as the "City", and the Service Employees International Union Local 503, Oregon Public Employees Union, hereinafter referred to as the "Union".

ARTICLE 1
RECOGNITION

1.1 Union Recognition. The City recognizes the Union as the sole and exclusive collective bargaining representative of all employees covered by this collective bargaining agreement.

1.2 Covered Employees.

Transit Unit. Transit employees as defined in ORS 243.738, Transit Drivers, Mechanics, Transit Dispatchers, and Fleet Hostlers of the City of Wilsonville, excluding supervisory and confidential employees as defined by ORS 243.650(6) and (23), interns and/or students. This unit shall be subject to the collective bargaining dispute resolution process accorded to non-strikeable units according to Oregon law.

Grant-funded positions will generally be included in this bargaining unit except as mutually agreed by the City and the Union to exclude. The City and the Union will discuss the status of a grant position prior to filling the position. In the event a bargaining unit employee moves to fill a grant-funded position, the employee will be entitled to return to their former position. Fleet is considered a division of the Transit Department.

1.3 Employee Descriptions.

Regular Full-Time employees shall be defined as employees who are regularly scheduled to work forty (40) hours a week, and are part of the bargaining unit.

Regular Part-Time employees shall be defined as employees who are regularly scheduled to work twenty (20) or more hours per week. These employees shall receive benefits provided under this contract on a prorated basis as determined by their actual hours worked including paid leaves approved and taken, not to exceed a maximum equivalent of a full time employee (173.33 hours/month), per pay period. Benefits under this section include sick leave, holiday leave, vacation leave, and insurance premiums (health, life, disability).

Employees working less than 20 hours per week are not part of the bargaining unit.

The City may schedule a less than twenty (20) hour employee to work more than twenty (20) hours in a given week without paying pro-rata benefits to allow for vacation relief, sick leave relief or emergency situations, but in no case shall employees be worked in excess of twenty (20) hours per week for more than four (4) consecutive weeks, or if not consecutive, for an average of more than twenty (20) hours per week in three (3) consecutive pay periods without receiving pro-rata benefits. The pro-ration of benefits will begin upon the conclusion of the applicable

four (4) week or three (3) month period so long as additional hours above twenty (20) hours per week continue to be assigned.

Extra Board transit drivers on the extra board will be guaranteed twenty-five (25) hours pay per week. To receive the guarantee, employees must be available for assignment and accept said assignment unless they call in sick in the morning and have available sick leave time in their accrual bank. In this event, the employee will receive compensation for all hours worked plus the requested sick leave hours for a total of at least twenty-five (25) hours for the week. Hours worked beyond the twenty-five (25) hours are paid at the applicable straight time rate. These employees are considered regular part-time employees, and are part of the bargaining unit.

On Call Transit Driver: Transit drivers who work intermittently and are considered less than half time employees and are not part of the bargaining unit.

Seasonal or Temporary employees shall be defined as employees who are hired to work for 1040 hours or less during a calendar year and are part of the bargaining unit. Seasonal or temporary employees are not eligible for any employee benefits or accrual of employee benefits, including but not limited to holidays, insurance, retirement, or paid leaves. Notwithstanding the above, a seasonal or temporary employee who is required to work on a recognized holiday will be compensated time and one-half for all hours worked on the holiday.

The calculation of the allowable 1040 hours shall begin when the employee is first hired. For example, if an employee is hired March 1, 2010 and works 1040 hours by September 1, 2010, he/she will not be eligible for rehire as a seasonal or temporary until January 1, 2011.

The parties understand that if a seasonal or temporary employee works in excess of 1040 hours, the employee shall then be considered a regular status employee but would still be subject to the regular probationary period.

1.4 New Classifications. Whenever the City develops a new classification, they shall develop a job description for the position and assign a wage rate. Once this procedure is completed, the City shall notify the Union in writing. In the event the Union does not agree with the assigned wage rate, the Union shall notify the City within fourteen (14) days and the parties shall negotiate over the wage rate under ORS 243.698. The City shall not be precluded from filling the position during negotiations.

ARTICLE 2
NON-DISCRIMINATION

There shall be no discrimination by the City against any employee because of age, race, marital status, mental or physical disability, national origin, sex, religion, or any other protected class, in accordance with applicable law. Neither will the Employer discriminate based on gender identity or sexual orientation. The provisions of this Agreement shall be applied without discrimination to all employees.

ARTICLE 3
MANAGEMENT RIGHTS

Except as expressly modified or restricted by a specific provision of this Agreement, all charter, statutory and other managerial rights, prerogatives, and functions are retained and vested exclusively in the City, including, by way of description and not limitation, the rights, in accordance with its sole and exclusive judgment and discretion: to direct and supervise all operations and functions; to manage and direct the work force, including, by way of description and not limitation, the right to determine the methods, processes, locations and manner of performing work; to hire, promote, and retain employees; to determine schedules of work; to purchase, dispose of and assign equipment and supplies; to determine the need for a reduction or an increase in the work force; to establish, revise and implement standards for hiring, classification, promotion, quality of work, safety, materials and equipment; to implement new and to revise or discard, wholly or in part, methods, procedures, materials, equipment, facilities and standards, and to sub-contract or contract projects or works it deems appropriate. Utilization of any management rights not specifically limited by this Agreement shall be at the City's discretion, provided any bargaining obligation arising from ORS 243.650-672 and the Status of Agreement article (Article 23) contained herein is satisfied. The City's failure to exercise any right, prerogative, or function hereby reserved to it, or the City's exercise of any such right, prerogative, or function in a particular way, shall not be considered a waiver of the City's right to exercise such right, prerogative, or function or preclude it from exercising the same in some other way not in conflict with the express provisions of this Agreement.

ARTICLE 4
UNION SECURITY

4.1 Check-off. The City agrees to deduct the uniformly required Union membership dues and other authorized fees, contributions or assessments once each month from the pay of those employees who have authorized such deductions in writing.

4.2 Fair Share. Fair share shall be deducted from the wages of non-member employees in accordance with ORS 243.666(1) and 243.672(1)(c). Fair share deductions shall be made for the month in which the employee was hired. The aggregate deductions of all fair share payers shall be remitted together with an "itemized reconciliation" to the Union no later than the fifth (5^{th}) working day of the month following the month for which the fair share deductions were made.

4.3 Religious Objection. Bargaining unit members who exercise their right of non-association only when based on a bona fide religious tenet or teaching of a church or religious body of which such employee is a member shall pay an amount of money equivalent to regular monthly Union dues to a non-religious charity or to another charitable organization mutually agreed upon by the employee and the Union. Such payment shall be remitted to that charity by the employee and this fact certified by the employee to the City within fifteen (15) calendar days of the time dues or fair share payment would have been taken out of the employee's paycheck. The City shall, within fifteen (15) calendar days of its receipt, send a copy of such certification to the Union. If an employee fails to provide certification to the City by the fifteenth (15^{th}) day, the City shall resume dues or fair share deductions until such notice is provided.

4.4 Electronic Membership Data. The City will furnish the Union, on a monthly basis, using an electronic medium, the following information for each bargaining unit employee: name; employee identification number; fair share/member status; amount of dues withheld; classification; base pay rate; hire date; and full-time/part-time status.

ARTICLE 5
UNION BUSINESS

5.1 Representatives. The Union will notify the City, in writing, of the names of its representatives within thirty (30) days of any changes.

5.2 Access. Representatives of the Union shall have reasonable access to the City's facilities to visit employees when necessary during working hours. Notice of such visits to non-public areas shall be given to the department head and the visits shall be conducted in a way that minimizes any work disruption.

A Union steward shall be granted reasonable time off and access to employee work locations during working hours to process grievances through the arbitration step.

5.3 Union Leave. Subject to reasonable operational requirements of the City, official Union delegates and members of the Union Board of Directors shall be allowed to use accumulated leave time (other than sick leave) or leave of absence without pay at their request to attend the Union's semi-annual General Council.

5.4 Bulletin Board. Bulletin board space in each building of the City shall be provided the Union for the posting of meeting notices and other information directly related to the union affairs of the employees covered by this contract.

5.5 Collective Bargaining Activities. The City will allow up to three (3) employees off, without loss of pay, for the purpose of collective bargaining. Two employees from operations and one employee from Fleet.

5.6 Use of the City Email.

(a) The parties recognize that the City email system, and all portions thereof, is at all times the sole property of the City. This resource is provided or assigned to employees to facilitate the orderly and efficient conduct of the public's business. In general, all such communications are subject to disclosure. The City will not assert any exceptions or exemptions from disclosure as to public records that happen to contain messages relating to Union activity by City employees. The parties recognize that the City may review all City emails in the City system at any time.

(b) Employees elected/appointed to official positions and/or representatives may use the City's email system to conduct Union business for the limited purposes of:

1. Notifying Union members of meetings and scheduling meetings (date, time, place, and agenda);
2. Scheduling meetings among Union officers and/or representatives (date, time, place, and agenda); and
3. Filing official correspondence with the City (e.g., grievance documents).

Such email communications may only be prepared and sent during non-work time, which is limited to before and after work, and during meal and rest periods.

(c) Misuse of the City email system will be subject to the disciplinary process.

ARTICLE 6
HOURS OF WORK

6.1 Workweek. Except as provided in Section 6.3, the workweek shall begin on Sunday at 12:01 A.M. and end at midnight on the following Saturday.

6.2 Regular Work Schedule. The regular schedule for regular full-time employees shall consist of five (5) consecutive eight (8) hour days in a workweek with two (2) consecutive days off between regular work weeks.

Based on specific bona fide operational needs, the City may assign a work schedule that has a break in consecutive hours or days. If an assignment to a non-consecutive work schedule becomes necessary, the affected employee(s) shall meet with their supervisor and may suggest alternatives. Once the work schedule change is made, employees will be given an opportunity to bid for the schedule based on their seniority. The parties have adopted this provision for the purpose of encouraging full-time employment while accommodating the operational needs of the City. However, this Section is not intended to create any obligation of the City to guarantee any level of work hours or days.

6.3 Flexible Work Schedule. A flexible work schedule is a schedule which varies from an eight (8) hour work day and/or varies in consecutive days worked. An employee may apply in writing for authorization to work a flexible work schedule, for example, four/ten (4/10) hour days.

As long as the schedule meets the operational and service needs of the City, no employee will be denied a flexible work schedule. Flexible work schedules may be modified, revised, and/or eliminated consistent with Section 6.4 below.

In the event the City grants a flexible work schedule, the City reserves the right to modify the workweek.

6.4 Work Schedules. Regular employees shall be notified of their work schedule, including the employee's workdays and hours. Work schedule changes shall be provided to the employee ten (10) work days in advance. If a ten (10) day notice is not given, the employee shall be compensated at the overtime rate for all hours worked outside the regular schedule until the notice requirement is met.

Notwithstanding the above, the ten (10) day notice is not required in the following circumstances:

A. In the case of an emergency and for the duration thereof;
B. Mutual agreement between the City and the employee; or
C. Additional or substituted hours assigned to part-time employees.

An emergency shall be defined as a situation beyond the City's control that requires a schedule change to meet operational needs, e.g., impact of inclement weather, natural disasters, illness or injury. Emergency work schedule changes will be discussed with the Union upon request, but such discussions are not a precondition to implementing the changes.

Employees may exchange days, shifts, or hours of work with supervisor approval provided such change does not result in the payment of overtime or presents a disruption to the normal routine of duties. Such exchanges shall not be considered as schedule changes necessitating the ten (10) day notice.

6.5 Rest and Meal Periods. All employees working more than five (5) consecutive hours in any workday shall receive at least a one-half (1/2) hour unpaid lunch break and a fifteen (15) minute paid break during each four (4) consecutive hour work period. Part-time employees working at least four (4) hours in a workday shall receive a ten (10) minute paid break period.

For the purpose of **part-time transit drivers**, when working more than six (6) consecutive hours in any workday they shall receive at least a one-half (1/2) hour unpaid lunch break.

All **full-time transit drivers** will be entitled to either one (1) fifteen (15) minute paid break or two (2) ten (10) minute paid breaks each half shift depending on operational necessity.

Modification of State Law. The provisions of this Section regarding appropriate meal periods and rest periods are intended to modify state law concerning meal periods and rest periods as allowed under OAR 839-020-0050.

6.6 Work Hours Generally. The purpose of this Article is to provide general guidelines for work hours and schedule changes.

ARTICLE 7
OVERTIME

7.1 Waiver. The City and the Union agree to waive application of ORS 653.268 and shall utilize the following provisions in determining compensation for overtime.

7.2 Definition. Except for those employees working a flexible schedule identified in Article 6, Hours of Work, above, overtime shall be compensated for time worked in excess of eight (8) hours in any one day or forty (40) hours per workweek at a rate of one and one-half (1-½) times

the employee's regular rate of pay. For the purposes of calculating overtime, paid leaves do not count as hours worked.

For those employees working a flexible schedule, overtime shall be compensated for time worked in excess of the daily scheduled shift or forty (40) hours per workweek (which may be modified pursuant to Section 6.3, Flexible Work Schedules, above).

Overtime shall be computed to the nearest fifteen (15) minutes, either way. Personal clean-up time shall count for purposes of overtime compensation.

7.3 Assignment. Overtime work must be authorized by management. An employee may be directed and assigned by the City to work in addition to the employee's regular work schedule. However, the City shall first assign overtime to qualified bargaining unit volunteers when available. The City shall equally offer overtime assignments among those bargaining unit employees in the department who volunteer for the time and are qualified to perform the necessary work. Overtime work normally performed by bargaining unit members shall not be assigned to non-bargaining unit employees when qualified bargaining unit members are available.

Extra Board drivers are hired for the purpose of minimizing overtime liability. The above paragraph will not apply when extra drivers are available or to holdover assignments.

7.4 Form of Compensation. The employee may receive payment as compensation for overtime or shall be compensated with time off at one and one-half (1-½) times the regular rate. Compensatory time shall not accrue beyond forty (40) hours. Compensatory time off shall be taken by mutual consent and as approved by the department head, consistent with the needs of the City. This section shall not preclude the parties from mutually agreeing to temporarily exceed the 40 hour cap for an employee due to special circumstances up to 240 hours.

7.5 Pyramiding. There shall be no pyramiding of overtime. Time for which overtime or premium compensation may be paid under any provision of this Agreement shall not be counted as time worked for the purpose of computing overtime or premium compensation under any other provision, or any applicable rule or regulation, it being intended and agreed that overtime or premium compensation shall not be duplicated or pyramided for the same time worked or credited.

7.6 Payment Upon Termination. Upon termination of employment, an employee shall be paid for unused compensatory time at the employee's final regular rate of pay.

7.7 Callback. Employees called back to work outside their work hours shall be compensated with a minimum three (3) hours of overtime. The calculation of overtime starts when the employee arrives at work and ends when the work is completed. This callback shall not apply if an employee is called back within three (3) hours of the beginning of his/her callback shift. Callback will apply on an employee's regular day off if overtime is not scheduled in a single block of time. As provided above in Section 7.5, Pyramiding, the City will not be required to compensate an employee twice for the same hours. Specifically, an employee called back more

than once in a three (3) hour period shall only receive compensation for one callback. For example, one callback shall apply if an employee is called back two (2) or more times between 8:00 pm and 11:00 pm. However, if the last callback takes the employee beyond 11:00 pm, the hours that go beyond shall be compensated at the normal overtime rate.

Scheduled overtime will be treated as callback if the City fails to schedule the time in a single block.

7.8 Standby. The City will maintain its voluntary system for standby. However, if there are no volunteers, management will be responsible to carry the pager if available. However, if management is unavailable, the City may require employees to be on standby on a rotational basis.

Employees who carry pager units for one week will be compensated at the rate of eight (8) hours straight time for each seven (7) day assignment. If a one (1) day holiday falls during the week on pager duty, the employee will be compensated at the rate of twelve (12) hours straight time for that week. If a two (2) day holiday falls during the week on the pager duty, the employee will be compensated at the rate of sixteen (16) hours straight time for that week. Employees may trade days within their week with other qualified employees. Immediate notice of the trade must be provided to the supervisor. Employees that are placed on standby for less than a week will be compensated on a prorated basis.

No overtime shall be paid unless the employee is required to return to work.

ARTICLE 8
SPECIAL ALLOWANCES

8.1 Use of Personal Vehicle. Whenever an employee is authorized to use a personal vehicle in the performance of official City duties, the employee shall be compensated at the rate established by the IRS as the maximum allowable rate for business travel. All mileage compensated shall be as a result of authorized personal vehicle use. "Authorized" means approved by the employee's Department Head or the City Manager/designee.

The City will verify and announce the allowable IRS rate as of January 1 of each year.

Employees who are required to use a personal vehicle for City use must provide proof of insurance as required by state statute when requested by the City.

8.2 Licenses. The City shall pay the fees associated with obtaining and maintaining a SMV/CDL license when required by the City to perform the duties of an employee's job, excluding the regular driver's license.

The City will continue to maintain required certificates, licenses and memberships at no cost to employees. In the case of a required CDL, the City will pay the associated administrative fees and the basic DOT examination for obtaining and maintaining the license for any cost above that of maintaining a regular driver's license. The City will offer opportunities for desired

certificates, licenses and memberships on an available funds basis. Whenever an employee can obtain or retain a higher certification that is pertinent to their job, the City will maintain that higher level of certification so long as there is no additional cost to the City and certification of the same nature at a lower level is a requirement of his/her job.

Funds permitting, employees who have current job-related certifications, licenses, or memberships will receive first priority for maintaining these and then employees interested in obtaining job-related certifications, licenses or memberships will be allowed to receive opportunity for licenses, memberships or certifications based on a rotational system beginning with the most senior of those who volunteer.

Employees who voluntarily transfer or are promoted to another classification that has a requirement for certifications or licenses may be required to cover the cost of obtaining those certifications or licenses.

8.3 Safety Equipment. The City shall provide required safety equipment as defined below and/or deemed necessary by OSHA and the City will replace this equipment as necessitated by wear and tear on the job.

Hard hats, ANSI-approved safety-toed boots (up to $150.00 for boots) (or an amount determined by the supervisor), gloves (rubber and regular), safety vests (safety and surveyor's), rubber boots, rain gear, safety glasses, hearing protection, masks and respirators.

8.4 Clothing. The City will provide clothing and reimbursements to regular full-time employees and regular part-time transit employees as provided below:

Insulated coveralls as needed.

Standard coveralls as needed.

Shirts - Transit (3), Fleet (5) annually.

Uniform Pants – Transit (3) annually.

Jeans - Fleet, not to exceed $180 per fiscal year. This benefit is taxable to the employee and will be dispersed in monthly payments.

Jackets - 1 jacket each for: Transit, as needed.
1 Spring and 1 Winter jacket for: Fleet, as needed.

Clothing and laundry service will be provided as follows:

Fleet - Standard coveralls

Where no monetary allowance is provided, employees will be required to turn in clothing and equipment in order to receive new clothes and equipment on an as needed basis.

8.5 Physical Examination. When an employee is required by the City to undergo a physical exam for licensing or certifications, such as DOT and/or FTA examinations, the City shall bear the expense for the basic examination. Employees shall be required to see the City's choice in physicians. The City shall provide three (3) different choices in physicians one of which will be female and one of which will be male. Employees receiving notice of loss of CDL or FTA, or medical card must report such to the supervisor.

The City shall not use these exams as fitness-for-duty exams.

8.6 Tool Allowance. The tool allowance for Mechanics has been incorporated into the salary schedule.

ARTICLE 9
PROBATIONARY PERIOD

9.1 Original Appointments. All original appointments, including temporary appointments[1], shall be tentative and subject to a probationary period of not more than six (6) consecutive months from the date of initial employment, except that employees hired as less than half time will remain on probation for 1040 hours or one (1) year, whichever comes first. Employees hired as less than half time will receive an increase in pay at the completion of their probation and at 2080 hours or two (2) years, whichever comes first, from their date of hire. In the event the probationary period for full time employees is interrupted, it may be extended by the period of the interruption, but not to exceed twelve (12) months from the date of hire.

In cases where the responsibilities of a position are such that a longer period is necessary to demonstrate an employee's qualifications, the probationary period may be extended in the sole discretion of the City; however, no probationary period shall be extended beyond twelve (12) months. The employee and the Union shall be notified in writing of any extension and the reasons therefor. Upon the employee's request, a meeting will be scheduled where the employee will be able to discuss the extension with their supervisor. If the employee is not notified of the intent to extend probation within the first six (6) months, probation will be considered completed thereafter.

If an employee's probationary period is being extended for the purposes of obtaining a certification or license, the probationary period will end upon the employee achieving the necessary certification or license.

During the initial probationary period (including any extension thereof, but not after a promotion), the employee shall not be eligible for vacation benefits, but shall earn vacation credit to be taken at a later date.

[1] A temporary employee who achieves regular status by working more than 1040 hours will still be subject to the normal probationary period as defined in Article 1 - Recognition.

During the initial probationary period, the employee shall accrue and be eligible to use sick leave.

Probationary employees may be terminated or disciplined for any reason, and such action shall not constitute a violation of this contract, nor be subject to the grievance procedure.

Upon completion of the probationary period, the employee shall be considered as having satisfactorily demonstrated qualifications for the position, shall gain regular status, and shall be so informed by the Personnel Action form.

9.2 Promotional. Current non-probationary employees who are successful in their bid for a promotion within the bargaining unit, will serve a six (6) month probationary period for the sole purpose of determining whether the employee can perform the duties of the higher level job. If the employee is unable to perform the higher level duties, he/she shall be entitled to return to his/her former job with all seniority and benefits.

In the event the promotional opportunity is outside of the bargaining unit, the employee will have a right to return to the bargaining unit if their failure to make probation within six (6) months is for anything other than disciplinary reasons. Time spent outside the bargaining unit will not accrue toward bargaining unit seniority.

ARTICLE 10
GENERAL PROVISIONS

10.1 Seniority. For the purpose of this Agreement, seniority shall be defined as an employee's length of service within the bargaining unit from the last date of hire with the City except as provided below. The City shall provide the Union with a seniority list annually.

In the event two (2) or more full-time employees are hired into the bargaining unit on the same date, seniority ranking shall be determined by the flip of a coin. Part-time employees shall accrue seniority on actual hours worked, less any overtime or comp time hours (2080 hours equals one year).

If an employee has a break in service for a voluntary reason and returns to employment within twelve (12) months of the break in service, all previous seniority and rates of vacation accrual shall be restored.

Seniority shall be terminated if an employee:

a) Resigns for voluntary reasons and does not return within twelve (12) months.
b) Is discharged or resigns in lieu of disciplinary action.
c) Is laid off and fails to respond to written notice provided in Article 11, Reduction in Force.
d) Is laid off work for a period of time greater than two (2) years.
e) Is retired.

Seniority shall not be affected by an employee's parental leave of absence without pay.

Seniority and anniversary dates will be changed depending on when employees change from part-time to full-time employment or vice versa.
Part-time hours will be converted to an equivalent amount of time to credit full-time service. When making this conversion, the City will utilize 2080 as annual hours to make one (1) year and 173.33 to equal one month. Any hours less than 173.33 will be rounded to the nearest whole day. One-half (1/2) day will be rounded up.

10.2 Outside Employment. Notice of outside employment while an employee of the City shall be given to the City Manager or his/her designee. The City reserves the right to require termination of that employment when it:

a) Proves incompatible with the employee's City work schedule;
b) Detracts from the efficiency of the employee in his/her City work; or
c) Results in a conflict of interest.

10.3 Contracting Out. If contracting work out results in the layoff or demotion of current bargaining unit employees, the City shall notify the Local Union President/designee no less than seventy days (70) prior to the issuance of any request for proposals or consideration of proposals to contract out work presently and regularly performed by bargaining unit employees. Such notification shall include a detailed analysis of the likely impact on the bargaining unit, and shall also outline the supporting reasons the City deemed pertinent to its decision. If there were financial reasons underlying the decision, the supporting reasons will include economic rationale. During the seventy (70) day period, the Union shall have the opportunity to submit an alternate proposal.

The Union shall have forty-five (45) days from the receipt of such notice to request bargaining over the impact on the employee of the proposed contracting out on bargaining unit employees. Upon such timely request, the City shall meet with the Union and enter into bargaining pursuant to ORS 243.698. Parties retain arbitration rights as under ORS 243.698(4) only over the impacts of the contracting out decision.

For the purpose of this Article, effects bargaining shall only be required if the decision to contract out work will create a layoff or demotion of current bargaining unit employees. In the event of a bona fide emergency, notice may be less than seventy (70) days.

10.4 Health and Safety. The City policy shall be applicable for all employees. The bargaining unit shall be allowed to select their own members for the committee and representatives shall come from different work areas. There will be an equal number of management and bargaining unit employees on the team.

Reference to discipline in the policy may only be applied in accordance with the standard set forth in this Agreement.

10.5 Job Vacancies. Except for reclassifications, the City agrees to post all newly-created positions or job openings within the bargaining unit on departmental bulletin boards for five (5) workdays prior to any other recruitment process occurring (unless otherwise mutually agreed by the City and Local President/designee), except that temporary positions may be filled without such notice if deemed necessary by the City. If the duties of the newly created job are currently being performed by a bargaining unit member, the job will be posted internally only. A copy of all postings will be delivered to the Local President/designee at time of posting.

Current employees will be given first opportunity to apply for promotional opportunities in the bargaining unit. In this instance, employees will be notified of the opportunity by a posting of the job announcement on departmental bulletin boards for at least five (5) workdays prior to the City's decision whether or not to open the recruitment to outside applicants. In the event the City decides to open the recruitment to outside applicants, the City will notify each internal applicant of the reason(s) for the decision. Regardless of whether or not the City requests outside applicants, all qualified employees will be given an opportunity to interview and full consideration for the position should they participate in an interview. Applicants that are not selected for promotion will be given an opportunity to discuss how they can become a stronger candidate and the reasons for the decision.

10.6 Labor/Management Meetings. The parties will meet regularly to discuss labor-management issues regarding the administration of this Agreement or other issues of concern.

10.7 New Contract Update. The City and Union will jointly develop and provide to all employees a new contract summary update of changes within 60 days of implementation of the contract.

10.8 New Transit Procedures. Whenever a new transit procedure or policy is developed or a change is made to an existing written procedure or policy, the City will provide a copy to the Union President, or designee, for review 14 calendar days prior to implementation. In the event the Union makes a demand to bargain within this time, the City shall enter into bargaining pursuant to ORS 243.698. In addition, all employees in the Transit Department will be provided a copy of the policy or procedure prior to implementation. In the event the change is based on urgent circumstances, the City may implement upon notice to the Union. The PECBA process otherwise applies.

Transit employees and the Local Union President, or designee, will be provided a copy of all current policies and procedures annually.

10.9 Position Description. Employees will be provided a copy of their position description upon employment. A copy of the position description, containing signatures of both the employee and supervisor, will be placed in the employee's personnel file. Each employee's position description will be reviewed annually during their annual review. If the review results in a modification of the position description, the employee will be given an updated copy containing signatures of both the employee and supervisor. A signed updated copy shall also be placed in the employee's personnel file. If a change is made to the position description between annual reviews, the employee will be contacted and the above process will be followed.

10.10 Transfer of Bargaining Unit Work. Nothing prohibits the City from assigning non-bargaining unit employees, including but not limited to employees, supervisors, and managers, work presently and regularly performed by bargaining unit employees in cases of emergencies as determined by the City, absences, relief, training employees, or other incidental amounts of bargaining unit work.

ARTICLE 11
REDUCTION IN FORCE

11.1 Layoff. If there are changes of duties in the organization, lack of work, or lack of funds, the City Manager may lay off employees.

All temporary and seasonal positions shall be laid off prior to the layoff of any regular status bargaining unit employees, so long as the temporary work falls within the usual and customary duties of the bargaining unit employee.

An employee shall be given notice of a layoff with as much notice as reasonably possible, but no less than fourteen (14) calendar days before the effective date. Notice of the layoff will be given to the Local Union President, or designee, and to the employee.

Employees shall be laid off in a department in the inverse order of their bargaining unit seniority within the job description affected by the layoff. The City Manager shall first make every reasonable effort to integrate those employees into another position by transfer or consider alternatives to layoff by the Union.

Within individual departments, a bargaining unit employee scheduled for layoff may bump the least senior employee at the same or lower salary range occupying a position the employee previously held in the employee's present department. An employee wishing to bump must exercise his or her right within five (5) calendar days from the date he or she receives his or her layoff notice. To bump to the position, the employee must have completed probation in the position they are bumping to. A bump will only be allowed if the employee is still able to perform the essential functions of the job and has all the qualifications presented in the job description. In the event an employee does not currently have the relevant certification/license, the employee is still eligible to exercise this bumping right provided the pertinent certification/license is and can be obtained within six (6) months.

An employee who bumps another employee must complete probation in the position. Failure to make probation within six (6) months will result in the employee's termination.

In an effort to minimize the disruption to the workforce, an employee that is bumped will not have a right to bump and will be laid off.

When layoffs occur in a part-time position, part-time seniority cannot be applied to the same full-time position in the department. This means a part-time employee cannot bump a full-time employee under any circumstances.

11.2 Recall. Employees who were laid off shall be recalled to the position they were laid off from, if it still exists, by inverse order of their layoff, and shall remain eligible for recall for two (2) years.

11.3 Notice. It shall be the responsibility of the employees laid off to keep the City informed of the address at which they may be reached and re-employment shall be offered in person or by certified mail addressed to the last address furnished by the employee. When an offer of re-employment has been made, the laid off employee shall advise the City of acceptance within five (5) calendar days and shall report for duty within ten (10) days of the receipt of the notification by the City. Any employee who fails to accept re-employment at his/her previous position when offered by the City in accordance with provisions of this Article, shall be deemed to have forfeited all rights hereunder.

ARTICLE 12
COMPENSATION

12.1 Wages.

Effective October 1, 2012, each employee base wage will be increased by .5 % (one-half percent).

Effective July 1, 2013, each employee base wage will be increased by 1.5% (one and one-half percent).

Effective July 1, 2014, each employee base wage will be increased by 2.5% (two and one-half percent).

Effective January 1, 2015, each employee base wage will be increased by .5% (one-half percent).

No seasonal/temporary employee that is not on the classification plan will be paid less than the minimum wage rate increases during the life of the Agreement. The City will notify the Union any time increases to the rate are anticipated.

Trainee Driver Pay - During their training period, drivers will be paid $10.00 an hour or $.50 above current minimum wage, whichever is higher.

12.2 Step Increases. Movement within the employee's salary range will be granted to regular full-time and regular part-time employees annually based on satisfactory performance and continuous service. Part-time employees will be granted step increases upon either reaching 2,080 hours or the employee's anniversary date (whichever comes first). If the part-time employee reaches 2,080 hours first, then that date will become his or her new anniversary date. Movement within the salary range shall be at least four percent (4%) and The City will retain the right to grant employees movement greater than four percent (4%) and grant employees at the top of their range bonuses if deemed appropriate. Discretionary increases above 4% and bonuses are not grievable. In the event movement within the City's salary range is denied, the employee

will be entitled to appeal the decision through the grievance procedure. The Employer will provide reasonable notice of deficiency prior to denial of an employee's movement within the salary range.

12.3 Workers' Compensation. Employees receiving Workers' Compensation benefits will be allowed to integrate their sick leave or other paid leave with the payments so they will receive their net salary amount each pay period. The "net" shall be defined as their salary less state and federal income taxes and FICA at the time of the injury or illness.

The City will provide employees with full benefits, at the contribution levels outlined in Section 12.4, Insurance, below, while on Workers' Compensation for up to one (1) full year after the date of covered illness or injury.

The City and the Union agree that light-duty opportunities will be assigned to employees if work is available and the employee is certified by a physician to perform the duties of the position.

12.4 Insurance.

Effective September 1, 2012, The City will contribute no more than ninety-two percent (92%) of the monthly premium per regular full-time employee toward either the Kaiser plans or Copay plans with accompanying dental options. The employee will be responsible for the difference and will pay the monthly amount through a payroll deduction.

Effective January 1, 2015, The City will contribute no more than ninety percent (90%) of the monthly premium per regular full-time employee toward either the Kaiser plans or Copay plans with accompanying dental options. The employee will be responsible for the difference and will pay the monthly amount through a payroll deduction.

Regular part-time employees will be responsible for paying a percentage of the selected health insurance plan premium based on a pro-rata basis as identified in Section 1.3.

The City will also continue to maintain CCIS Life Plan 5 ($25,000) and the matching accidental death and dismemberment benefit.

The City shall not be obligated to increase its contributions to the plans after June 30, 2015, unless otherwise mutually agreed or negotiated by the parties.

The City will provide employees with the opportunity to contribute to a Flexible Spending Account.

12.5 City's Right to Modify Plan and/or Benefits. The Employer retains the right to change the plan benefits, insurance carriers, and/or administrators as long as it provides benefits comparable to the City's current healthcare plan set forth in Section 12.4, Insurance.

12.6 Retirement. The City shall continue to participate in the Public Employees Retirement System/Oregon Public Service Retirement Plan Pension (OPSRPP) or any successor plan as

required by the governing statutes and administrative rules and will continue to pick-up the employee's contribution of six percent (6%). In the event it is determined by the Legislature, courts, or initiative that the City cannot pick up the employee's contribution, the six percent (6%) shall revert to salary.

The City will continue to participate in the program for use of unused accumulated sick leave as an "option" choice for employees as provided by statute and administrative rule.

12.7 Work Out of Classification. Assignments of personnel to a higher classification on an acting basis may be made by the City. When such assignments are made, they shall be specific and placed in writing to the employee. When so assigned for more than 4 hours in the workday, the employee shall be compensated at five percent (5%) above their current salary for each hour worked in the higher classification.

The City will not change assignments to avoid payment on work out of class, unless such change is an operational necessity.

12.8 Promotion. Employees that are promoted shall receive at least a five percent (5%) pay increase. Reclassifications are not subject to 12.8.

12.9 Reclassification. In order to provide easy access for employees, the City will place all classification descriptions for the bargaining unit on the City's intranet. Staff Directive #33 is appended to the contract, but is not subject to the grievance procedure and may be modified as necessary by the City. Whenever requests for reclassification are made under this appendix, the City will notify the Union President.

Employees that are reclassified to a higher pay range will be moved to the higher range based on the percentage difference between the two ranges. Thereafter, the employee will move on the range based upon the anniversary date that was established in their prior classification. For example, if the ranges are two and one-half percent (2½%) apart, the employee will receive a two and one-half percent (2½%) increase, so long as such increase does not exceed the range the employee is moving to. In other words, in establishing the salary for the reclassified employee, the relative position within the new pay range shall be the same as the relative position in the former range.

ARTICLE 13
HOLIDAYS

13.1 Holidays Observed. The City shall observe the following paid holidays:

New Year's Day - January 1st
M. L. King, Jr.'s Birthday - 3rd Mon. in Jan.
Presidents' Day - 3rd Monday in February
Memorial Day - Last Monday in May
Independence Day - July 4th
Labor Day - First Monday in September
Veterans' Day - November 11th
Thanksgiving Day–4th Thursday in Nov
Day after Thanksgiving
Christmas Day - December 25th

All regular full-time City employees shall be paid eight (8) hours at their regular straight-time hourly wage for all holidays referred to under this Section. An employee has the option of using vacation, compensatory time, leave without pay, or work extra hour(s) to offset this benefit when given a day off that exceeds eight (8) hours within the pay period. Regular part-time employees shall accrue holiday pay on a pro-rata basis.

13.2 Holidays Falling on Scheduled Days Off. For employees whose normal week is Monday through Friday, whenever a holiday falls on Saturday, the preceding Friday shall be given as a holiday. If it falls on Sunday, the following Monday shall be given as a holiday. The same pattern will be followed for employees whose workweek is other than Monday through Friday. Whenever a holiday falls on an employee's first day off, the preceding day shall be considered the holiday. When a holiday falls on an employee's second day off, the following day shall be considered the holiday.

When a holiday falls on a Monday or Friday giving the majority of City employees a three (3) day weekend, an employee whose days off are other than Saturday and Sunday may, with Supervisor approval, choose to take the day preceding or the day after their weekend off as a holiday in lieu of taking the actual holiday, thus giving them a three (3) day weekend like other City employees.

13.3 Holidays During Leave. Holidays that occur during paid leave time of any type shall not be charged against such leave.

13.4 Holiday Pay. If any employee works on a recognized holiday, that employee shall be paid for all hours worked at time and one-half the regular rate of pay plus regular holiday pay. The time and one-half pay specified above shall occur only on the actual holiday.

13.5 Holiday Work. In scheduling holiday work, the City shall first solicit volunteers from the qualifying work group and give all volunteering employees equal opportunities for holiday work by rotating assignments. When insufficient numbers of people volunteer for holiday work, employees (other than temporary and seasonal employees) shall be assigned on a rotational basis by inverse seniority.

ARTICLE 14
VACATION

14.1 Accrual.

Months of Service	Accrued Leave Hours (rate)
0-60	7.33 hours / 11 days
61-120	10.67 hours / 16 days
121-180	12.67 hours / 19 days
181+	15.34 hours / 23 days

Annual vacation leave shall accrue monthly and may be taken when earned. Part-time employees shall accrue vacation leave on a pro-rata basis.

14.2 Eligibility. New employees shall not be eligible for vacation leave during probation, although vacation leave shall accrue from the beginning of employment. Up to 40 hours of vacation may be taken after satisfactory completion of probation. Upon request, the City, may allow an employee to use earned vacation days during probationary periods.

14.3 Maximum Accrual. Employees shall be required to take one (1) week of vacation per year, but may only accrue up to 240 hours of vacation leave with pay.

14.4 Scheduling. Supervisors shall schedule vacation for their respective employees with due consideration for the desires of the employees and the City's work requirements. Vacation schedules may be amended to allow each supervisor to meet emergency situations. In the event that more than one (1) employee has requested the same vacation period off and the workload does not permit all employees to have that period off, the supervisor shall first ask for any volunteers who are willing to reschedule their request. In the event there are insufficient volunteers, preference shall be granted on the basis of seniority provided, however, that each employee may only exercise their seniority for vacation bidding once per calendar year.

Transit drivers and dispatchers will bid once annually by seniority for a single specified time period off. All other requests will be on a first-come first-serve basis depending on operational requirements. Bidding shall begin January 2nd and shall not extend beyond the last day in February. The bid will encompass the calendar year and the first week of January for the following year.

14.5 Pay Upon Separation. Upon termination of employment, unused vacation benefits earned will be paid out with the final paycheck.

14.6 Vacation Cancellation. In the event approved vacation leave is canceled by the City, the employee shall be notified of the cancellation in writing. Unrecoverable transportation, lodging deposits or other bona fide expenses such as hunting tags, event tickets, etc., will be paid by the City.

14.7 Vacation Transfer. Subject to the requirements above in maximum accrual, the City shall allow employees to transfer accumulated vacation to a coworker with a serious injury or illness, as defined by the FMLA, who has exhausted all accumulated leave. The FMLA definition does not limit the time frame the employee may need or request for transfer of leave. It is only used for defining "serious illness or injury." Donations for leave must be submitted in writing. Whenever an employee is receiving wages and benefits as a result of donated time, the donated time shall be used to offset any insurance contribution expense to the City.

ARTICLE 15
SICK LEAVE

15.1 Accrual. All regular full-time City employees shall earn sick leave with full pay at the rate of eight (8) hours for each calendar month of service. Sick leave shall accrue from the date of employment.

15.2 Utilization. Employees are eligible for sick leave for the following reasons:

a) Non-occupational personal illness or physical disability.

b) Quarantine of an employee by a physician for non-occupationally related disability.

c) Illness of an immediate family member requiring the employee to remain at home. For the purposes of this Section, immediate family member shall include spouse, domestic partner, parents (including step-parents), children (including step-children and foster children), current father-in-law and mother-in-law, grandparents, grandchildren, and other relatives living in the employee's household.

d) Necessity for medical or dental care.

Any time utilized under this Section will be utilized in increments of fifteen (15) minutes which will be rounded up to the next quarter (¼) hour on each occasion.

Written proof of the need for sick leave from the attending physician may be required at the City's discretion for absences in excess of three (3) consecutive work days, or if the City has reason to believe that the employee is abusing sick leave privileges. Misuse of sick leave benefits will be subject to disciplinary action.

15.3 Notification. An employee who is unable to report for work as scheduled shall report the reasons for absence to his/her supervisor, when possible, one (1) hour prior to the time the employee is expected to report for work. Sick leave with pay shall not be allowed unless such report has been made or unless special circumstances existed to justify the failure to report. Additionally, the employee must call in to report any continuing need to be absent to his immediate supervisor prior to the start of each subsequent shift to be eligible for sick leave benefits on these workdays. No daily notice will be required when the employee has submitted a doctor's slip which specifically states he will be unable to return to work until a certain date.

Transit employees must call in an absence at least one (1) hour ***prior to*** the start of their shift.

15.4 Use of Other Accrued Leave. Once sick leave is exhausted, an employee with a serious illness or injury can use other forms of accrued leave (e.g., vacation, compensatory time, etc.).

15.5 Family Medical Leave. Employees shall be granted twelve (12) weeks leave upon request pursuant to ORS 659.470-494. Employees must use accrued vacation, sick leave, compensatory time, and/or leave without pay while on Family Medical Leave. The employee shall submit his/her request for Family Medical Leave in writing.

15.6 Physician Evaluation. The City may require an employee to see a physician of the employee's choice whenever it objectively believes the employee may be unable to safely perform their job. The employee will bear the cost of the physician's visit. When it becomes necessary to seek a physician certification, the City will inform the employee and the local Union President/designee and place the employee on paid administrative leave until the employee can be examined. The City will be required to pay the employee for the time spent traveling to and from the doctor if outside of the administrative leave time and will pay mileage. If concerns regarding the employee's ability to safely perform his/her job continue, the City may require the employee to see a physician of the City's choosing. The City will bear the cost of the physician's visit. When it becomes necessary to seek a physician certification, the City will inform the employee and the local Union President/designee and place the employee on paid administrative leave until the employee can be examined. The City will be required to pay the employee for the time spent traveling to and from the doctor if outside of the administrative leave time and will pay mileage.

15.7 Transfer. The City shall allow employees to transfer accumulated sick leave to a co-worker with a serious injury or illness, as defined by the FMLA, who has exhausted all accumulated leave, provided the transferring employee maintains a sick leave balance for their own use of at least 480 hours. The FMLA definition does not limit the time frame the employee may need or request for transfer of leave. It is only used for defining "serious illness or injury." Donations for leave must be submitted in writing.

Whenever an employee is receiving wages and benefits as a result of donated time, the donated time shall be used to offset any and all benefit or roll-up expense to the City.

15.8 Required Leave. The City Manager/designee may require an employee to use sick leave and leave the work place if it is determined the employee is too ill to work or could transfer their illness to the public or other employees.

15.9 Return to Work. The City may require an employee to provide a note from their personal physician stating they are able to return to work when returning from sick leave. The note may only be required when the employee has been under the care of a physician.

15.10 Long Term Disability Insurance. The City will provide employees with long-term disability insurance as specified in the attachment to this contract.

ARTICLE 16
EDUCATIONAL OPPORTUNITIES

16.1 Tuition Reimbursement. The City may reimburse an employee for full tuition costs for one (1) class per term, not to exceed three (3) classes per year, provided that:

a) The class is directly related to the employee's work (or to a position to which an employee can reasonably expect to be promoted).

b) The employee has made prior arrangement with his/her supervisor and received approval from the City Manager/designee for reimbursement prior to registration for such course.

c) Prior to reimbursement by the City, the employee must submit evidence of satisfactory completion of the course. Satisfactory completion means the employee receives a grade of "C" or better, or a passing grade in a pass/fail class.

d) The employee is not receiving reimbursement for tuition from any other source.

e) The employee agrees to continue employment with the City at least six (6) months following satisfactory completion of the course or will reimburse the City for tuition costs paid during his/her last six (6) months of employment with the City.

16.2 Leave and Expenses. The City shall allow time off with pay and shall pay all expenses of attending classes, lectures, conferences, or conventions, when attendance is on an assignment basis and approved by the City Manager/designee. Studying or preparing for classes, lectures, conferences, or conventions shall not be allowed on work time.

Employees who are required to attend out-of-town training, either by the department supervisor or as required by the City to maintain required job-related certifications/licenses, will be paid for the travel time outside of their normal schedule. Travel time for required local training will also be paid if it exceeds the normal commute time the employee experiences traveling to and from work. If this time causes them to exceed forty (40) hours in a week, it will be paid at the applicable overtime rate or the employee may flex their schedule to compensate for the hours. However, if it is foreseeable the travel time will cause the employee to exceed forty (40) hours in a workweek, the employee must receive the City's approval of the overtime. Meals shall be re-reimbursed according to the City's Travel Policy. Employees who voluntarily attend training that is approved by the City during the employee's normal work schedule shall only be compensated for their normal work schedule.

16.3 Work-Related Courses. When an employee wishes to take a work-related course(s) which is only offered during regular working hours, the City Manager/designee may either:

a) Pay for the cost of the course and related tests in advance, provided that the employee takes the necessary time off without pay or makes prior arrangements with his/her supervisor for alternative working hours. In the event the employee fails to pass or complete the course or tests, the employee will be required to reimburse the City for the advanced costs; or

b) Allow time off with pay provided the employee pays his/her own tuition costs and prior arrangements are made with his/her supervisor and approved by the City Manager/designee.

16.4 Cost of Textbooks. The cost of textbooks and technical publications required for courses for an employee's current position shall be the responsibility of the City. Upon completion of such courses, the textbooks and technical publications shall remain City property.

ARTICLE 17
OTHER LEAVES

17.1 Criteria and Procedure. All requests for an unpaid leave of absence shall be submitted in writing to the City Manager or a designee. The written application must describe the reason for the request and confirm a specified date at which the employee is expected to return to work.

17.2 Approval. Requests for leave will be evaluated on a case by case basis with the operational requirements of the City in mind. Subject to those requirements, approval will not be unreasonably withheld. Requests for leave to conduct union business will be evaluated in a non-discriminatory fashion.

17.3 Termination of Leave. Notice that the employee has accepted employment or entered into full-time business or occupation may be accepted by the City as a resignation when the employment or business is inconsistent with the reason leave was requested and granted. Any employee who is granted a leave of absence without pay under this Section and who inexcusably fails to return to work immediately upon the expiration of said leave of absence, shall be considered as having resigned his/her position with the City.

17.4 Employee Status. Employees on leave without pay remain employees covered by this Agreement, entitled to its non-economic benefits such as access to the grievance procedure. Unless required by law or otherwise specified in this Agreement, employees on leave without pay shall not accrue any economic benefits, including seniority.

17.5 Bereavement Leave. In the event of a death in the immediate family or household, up to forty (40) hours of compensated leave per occurrence may be used by full-time employees in order to arrange for and attend the funeral. Part-time employees shall accrue bereavement leave on a pro-rata basis, as identified by Section 1.3. Upon application and mutual agreement with the employee's supervisor, the employee may use accumulated leave (other than sick leave) after the forty (40) hours of compensated leave. Such request for additional leave shall not be unreasonably denied.

For the purpose of this Article, an employee's family shall mean: Spouse, parent or step-parent, children, step-children, brother, sister, mother-in-law, father-in-law, brother-in-law, sister-in-law, maternal grandparents, paternal grandparents, grandchildren, domestic partner as defined by law, or other family members living in the employee's household. For purposes of this section, a domestic partner's relationship will be considered to be the equivalent of a spouse's relationship.

Deviations from the definition of immediate family shall not be allowed; however, the City will consider other leave (other than sick leave) for employees that wish to take time off as a result of some other person that is significant to him/her.

17.6 Witness and/or Jury Duty. When a City employee is called for jury duty or is subpoenaed as a witness in a criminal matter, or in a civil matter arising from their City employment, he/she shall not suffer any loss of his/her regular City compensation he or she would have earned during such absence; however, he/she may be required to waive the jury/witness fee provided by the Court as required by law. Time not worked because of such duty shall not affect vacation or sick leave accruals.

17.7 Military. Military leave shall be granted to employees in accordance with Oregon Revised Statutes.

17.8 Inclement Weather.

In the event an employee is unable to make it to work because of inclement weather or the City offers to send employees home as a result of the same, the employee will have the option of using any accrued leave, except sick leave, or take leave without pay.

If an employee reports for work during inclement weather and the City decides to not have the employee work, the employee shall be compensated for a minimum of two (2) hours of work.

ARTICLE 18
DISCIPLINE

18.1 Discipline and Discharge. No covered employee shall be disciplined or discharged except for just cause. Oral warnings, even if reduced to writing, are not considered to be discipline and may not be protested through the grievance procedure. Disciplinary actions include, but are not limited to: written reprimands, suspensions, demotions and discharge. Whenever an employee is disciplined the employee shall sign the notice of disciplinary action as specified in Section 20.4, Signature Requirement.

Informal discipline or corrective actions, such as counseling, specific directives, work improvement plans, oral warnings (even if reduced to writing) and other similar actions are not considered discipline and will not be placed in the personnel file as such. Corrective actions are not subject to the grievance process. They may be used for notice of progressive disciplinary sanctions and are subject to review in yearly evaluations. Employees may provide written rebuttal within 10 days, to be placed with the corrective action.

18.2 Excluded Employee. Probationary employees (as defined in Section 9.1, Original Appointments), less-than-half-time, temporary, and seasonal employees may be terminated or disciplined for any reason, and such action shall not constitute a violation of this contract, nor be subject to the grievance procedure.

18.3 Imposition. If a supervisor has reason to discipline an employee, he/she shall make a reasonable effort to impose such discipline in a manner that will not unduly embarrass the employee before other employees or the public.

18.4 Representation Rights. Upon request, an employee will be entitled to have a Union/employee representative present whenever the employee is being interviewed regarding a matter that could lead to a disciplinary action against the employee. An employee's representation rights may only be invoked in accordance with the standard set forth by the Oregon Employment Relations Board. During any interview of this nature, either party may record the proceeding. If the meeting is recorded, the party making the recording will be obliged to provide a copy of the recording if requested by the other party. If a copy of the recording is requested, a reasonable fee may be imposed.

The supervisor is encouraged to advise an employee of his/her right to Union representation on a matter that might lead to discipline.

18.5 Due Process. Prior to imposition of an economic disciplinary sanction, the following procedural due process shall be followed:

a) The employee shall be given advance written notice of the charges or allegations that may subject them to discipline and of the disciplinary sanctions being considered.

b) The employee will be given an opportunity to refute the charges or allegations either in writing or orally in an informal hearing prior to the implementation of any discipline. If discharge is the disciplinary sanction being considered, the employee will be given at least seven (7) days' notice of the informal hearing, unless mutually agreed to schedule it earlier.

18.6 Just Cause Standards. For the purpose of this Agreement, just cause shall be determined based on the following questions:

a) Did the City give the employee forewarning or foreknowledge of the possible or probable disciplinary consequences of the employee's conduct?[2]

b) Was the City's rule or managerial order reasonably related to a) the orderly, efficient or safe operation of the City's business; and b) the performance the City might properly expect of the employee?

c) Did the City, before administering discipline to an employee, make an effort to discover whether the employee did in fact violate or disobey a rule or order of management?

d) Was the City's investigation conducted fairly and objectively?

e) At the investigation, did the City obtain substantial and compelling evidence or proof that the employee was guilty as charged?

[2]The parties agree that there are some offenses that are so egregious that forewarning of consequences is not necessary.

f) Has the City applied its rules, orders and penalties evenhandedly and without discrimination to all employees?

g) Was the degree of discipline administered by the City reasonably related to a) the seriousness of the employee's proven offense; and b) the record of the employee and his/her service with the City?

18.7 Notice of Discipline. When an employee is disciplined, the Local President/designee will be given notice of the action against the employee, unless the employee declines that such notice be given.

18.8 Discovery Materials. In the event the Union or employee requests a copy of the disciplinary investigation or related materials, the City may apply reasonable costs for copies or administrative time beyond the de minimis standard.

ARTICLE 19
SETTLEMENT OF DISPUTES

19.1 Procedure. Any dispute concerning the application, interpretation or enforcement of this Agreement shall be resolved in the following manner and sequence:

Step 1. The employee, with or without a Union representative,[3] shall first take up the grievance with his/her immediate supervisor within ten (10) calendar days immediately following the date the employee had or should have had knowledge of the grievance. The supervisor will then issue a response within ten (10) calendar days immediately following the date the employee discussed the dispute with his/her immediate supervisor. If this informal attempt to resolve the dispute is unsuccessful, the affected employee(s) shall present the grievance in writing to their supervisor with a copy to Human Resources within ten (10) calendar days immediately following the date the response was received or communicated to the affected employee from the immediate supervisor. If a question exists as to whether or not the employee attempted to resolve the dispute informally, the supervisor will be given an opportunity to resolve the dispute prior to a meeting of the "Management Team".[4] At this and each subsequent step of the grievance procedure, the written grievance submitted by the Union or employee(s) shall include:

a) A statement of the grievance and the factual allegations upon which it is based;

b) The section(s) of this contract alleged to have been violated;

c) The remedy sought; and

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[3]A union representative at the informal step is intended to provide support and clarification for the employee and normally will not present the grievance.

[4]The employee's "Management Team" may consist of all supervisors responsible for the employee's job performance, including the City Manager and/or his/her designee. The City's personnel officer will generally be present at this level also.

d) The name and signature of the individual(s) submitting the grievance, except in the case of a group grievance. In such case, an officer of the local union will sign.

Step 2. Within ten (10) calendar days of receipt of the grievance, the Management Team will meet with the grievant and a representative of the Union, if requested by the employee. In the event a meeting cannot be scheduled because of the unavailability of any necessary party, the parties shall then mutually agree to another date. In any event, the employee/Union will be given at least twenty-four (24) hours' notice of such meeting. Grievances filed by the City shall be initiated at this step and filed with the Union's President.

The Management Team shall render a written decision within ten (10) calendar days following the herein-referenced meeting.

Step 3: Mediation. In the event no agreement is reached in Step 2 and within ten (10) days of the Management Team response in Step 2, either party, the Union or the City, may request mediation. Mediation will be by mutual agreement. The parties will agree to a mutually acceptable mediator or agree to use a mediator appointed by the ERB or other agreed provider. Costs for the mediator shall be shared. Mediation will have a cap of 60 days from notice of election to mediate. The parties must meet at least twice in the mediation process, unless otherwise agreed, and the parties agree to act in good faith to resolve the dispute. If the grievance remains unsettled after the 60 days, either party may move to Step 4, Binding Arbitration. Request for Arbitration by the moving party must be within the next 30 days or the grievance ends. The parties may mutually agree to extend the 60 days, but such must occur before the expiration of the initial 60 days.

Step 4. If the grievance is not resolved at Step 2/3 above and if the Union or City wishes to pursue the grievance further, the party shall submit the grievance to arbitration by written notice to the City Manager or Union President within ten (10) calendar days following the date the Step 2 response due date or date received, whichever date is sooner.

The parties may, prior to selecting an arbitrator, mutually agree to have the dispute mediated by the State Conciliation Service.

Unless the parties mutually agree upon an arbitrator, the party requesting arbitration shall, within fourteen (14) calendar days of their notice to proceed to arbitration, submit a written request to the Oregon Employment Relations Board that it submit to the parties a list of the names of seven (7) Oregon arbitrators. Upon receipt of the list, the parties shall determine by the toss of a coin who will strike first, and the parties shall then continue to alternate strikes until only one (1) name remains and the remaining name shall be the arbitrator.

The arbitrator shall have no power to modify, add to or subtract from the terms of this Agreement and shall be confined to the interpretation and enforcement of this Agreement. The arbitrator's decision shall be in writing and shall be submitted to the parties within thirty (30) calendar days following the close of the hearing. The arbitrator's decision shall be final and binding on the affected employee(s), the Union and the City.

Either party may request the arbitrator to issue subpoenas but, if issued, the cost of serving a subpoena shall be borne by the party requesting the subpoena. Each party shall be responsible for compensating its own witnesses and representatives during the arbitration hearing, except that employees that are subpoenaed for the hearing shall not suffer any time loss during the time it is necessary for them to testify. The loser shall pay arbitrator's fees and expenses, and the arbitrator, as part of the award, shall designate the losing party for such purpose.

19.2 Time Limits. All parties subject to these procedures shall be bound by the time limits contained herein. If either party fails to follow such limits, the following shall result:

a) If the grievant or the Union fails to advance the grievance to the next step in a timely fashion, the right to binding arbitration of the grievance shall be waived. However, the grievance can be carried through the Management Team level.

b) If the City or the Union, at any step, fails to respond in a timely fashion, the grievance shall proceed to the next step.

Time limits may be extended by written mutual agreement of the parties.

19.3 Discovery Materials. In the event the Union requests materials for review, such as for processing a grievance, the City may apply reasonable costs for copies or administrative time beyond the de minimis standard.

ARTICLE 20
PERSONNEL RECORDS

20.1 Access. Each employee shall have the right to review and copy (at his/her own expense) the contents of their own personnel file. In addition to the Union's rights as the exclusive representative, at his/her option and upon presentation of a signed release, an employee may authorize a Union representative to review the contents of his/her file.

20.2 Disciplinary Records. Each employee shall be given a copy of all disciplinary materials placed in his/her file. An employee may include an explanatory statement for the personnel file in answer to any reprimand or other form of discipline if the employee chooses not to grieve such action.

20.3 File Purging. Written reprimands/warnings shall be removed from an employee's file, at his/her request, after three (3) years so long as no other disciplinary action has occurred within the three (3) year time period. Any material, other than performance evaluations, directly associated with the items being purged, will also be removed from the file. Documents removed from the personnel file shall be placed in a confidential file maintained by the Human Resources Department. Such purged document will not be used against an employee for the purpose of progressive discipline. Purged documents may be used in any civil or arbitration proceeding for the purpose of establishing consistency of disciplinary action, lack of discrimination, the

existence of mitigating or extenuating circumstances and compliance with legal obligations. The Union will have equal access, upon request, to these files for the same purposes.

20.4 Signature Requirement. Before any material reflecting negatively on the employee is placed in the employee's file, the employee shall sign a receipt containing the following disclaimer:

> *"Employee's signature only acknowledges receipt of material. The employee's signature does not necessarily indicate agreement or disagreement."*

This shall not apply to a termination notice if the employee refuses to sign the document.

ARTICLE 21
STRIKES

21.1 Prohibition. The Union and its members, as individuals or as a group, will not initiate, cause, participate or join in any strike, work stoppage, or slowdown, or any other restrictions of work, at any location in the City during the term of this contract. Employees in the bargaining unit, while acting in the course of their employment, shall not honor any picket line established in the City by the Union or by any other labor organization when called upon to cross picket lines in the line of duty. Disciplinary action, including discharge, may be taken by the City against any employee or employees engaged in a violation of this Article.

21.2 Union Obligation. Pursuant to PECBA, this unit is strike prohibited. In the event of a work stoppage, slowdown, picketing, observance of a picket line, or other restriction of work in any form, either on the basis of individual choice or collective employee conduct, the Union will immediately, upon notification, attempt to secure an immediate orderly return to work.

21.3 Lockout. There shall be no lockout of employees during the term of this Agreement.

ARTICLE 22
SAVINGS CLAUSE

Should any portion of this contract be contrary to law, such decision shall apply only to the specific portion thereof directly specified and all other provisions of this Agreement shall remain in full force and effect for the duration of this Agreement. Upon such declaration, the parties agree to negotiate regarding the invalidated portion thereof. Negotiations shall commence within thirty (30) days, unless the parties mutually agree to extend such time frame.

ARTICLE 23
STATUS OF AGREEMENT

23.1 Complete Agreement. This Agreement incorporates the sole and complete agreement between the City and the Union resulting from these negotiations.

23.2 Amendments. This Agreement may be amended at any time by mutual Agreement of the Union and the City. Such amendments shall be in writing and signed by both parties.

In the event the City wishes to implement or change any condition of employment that is a mandatory subject of bargaining which was not discussed in the negotiations that created the current Agreement, the City shall be obligated to inform the Union of the condition it wishes to implement or change and bargain at the Union's request. For the purpose of this Section, the Union will have 14 calendar days to make a demand to bargain. If the Union demands to bargain, the City shall enter into bargaining pursuant to ORS 243.698. If the Union does not demand to bargain, the City may implement or change the condition it has proposed. The Union waives any right to bargain matters it raised during negotiations but which were not embodied in the Agreement.

ARTICLE 24
TERM OF AGREEMENT

This Agreement shall be effective upon execution. The Agreement shall remain in full force and effect through June 30, 2015, and shall be automatically renewed from year to year thereafter, unless either party shall notify the other in writing no later than January 1 of the expiring year that it desires to either terminate or modify this Agreement. In the event notice to modify is given, negotiations shall begin not later than thirty (30) days from that notice.

This Agreement is hereby executed on this _____ day of _____, 2012, by:

The City of Wilsonville	SEIU Local 503, OPEU
_____	_____
Bryan Cosgrove City Manager	SEIU Local 503, OPEU

APPENDIX A

STAFF DIRECTIVE 33

(This directive is included for procedural purposes for employees. City actions as a result of this directive are not subject to the grievance procedure. Additionally, this directive may be modified as deemed necessary by the City. In the event the directive is modified, a new Appendix A will be published and distributed.)

City Manager Staff Directive #33

Approved: _____ **Date Revised:** 12/29/2004

Classification Policy and Procedures

The Classification Plan

The Human Resource Department shall prepare and maintain a classification plan based on an analysis of organizational structure and the duties and responsibilities of each position in the City. A classification is a group of positions sufficiently similar in duties, authority, and responsibility to permit grouping under a common title and which would call for similar qualifications and the same schedule of pay. Positions within the same occupational family are grouped together according to organizational structure and the responsibility and difficulty of tasks assigned to the positions.

The Position Descriptions

The Position Descriptions shall include:

1. **Date of preparation or most recent modification**.
2. **Position Title.**
3. **Department.**
4. **Supervisor** (position).
5. **Position Overview**. A short statement containing the main responsibilities and purpose the position.
6. **Resources Influenced**. Budget and number of employees supervised.
7. **Reporting Positions**. List of positions supervised.
8 **Working environment**. Description of work environment.
9. **Qualifications.** Knowledge, skills, and abilities.
10. **Essential Job Functions**. Physical and mental responsibilities that are fundamental to the job and cannot be reassigned.
11. **Job Duty Outline**. The position is categorically broken down into typical tasks and responsibilities. The outline progresses from general responsibilities to typical specific tasks.
12. **Percentage of work time**. Percentages are assigned to each component of each level in the job duty outline. The percentages correspond to the relative amount of time spent on each

task or responsibility. The sum of the percentages of each level, in each category must equal 100%.

Job descriptions shall be interpreted in their entirety and in relation to others in the classification system. Particular phrases or examples shall not be isolated and treated as a full description and explanation of the kind of work performed. The outline format is designed to provide ease of training and performance evaluation. Employees will be provided a copy of their job description. A copy of the job description, containing signatures of both the employee and supervisor, will be placed in the employee's personnel file.

The definitions in job descriptions are descriptive and not restrictive. They are intended to outline the general duties and are not intended to prescribe each specific duty of a given position. Nothing in the job description is be interpreted as limiting the ability of the City to modify or alter the detailed tasks involved in the duties of any position as long as they remain within the general definition of the classification. The Human Resource Department may modify qualification requirements or task statements for a given job announcement to include substitute equivalent requirements for selective recruitments, or to more clearly identify necessary qualifications.

Reclassification Policy

A reclassification may occur when job content changes substantially and permanently, requiring the position to be assigned to a different classification and/or pay range. A job can also be reclassified when there is clear evidence the employee is consistently performing all of the duties of a different classification. A position can be reclassified up or down in pay range.

Supervisors are responsible for ensuring that the duties assigned to employees are consistent with their job classification. If the duties of a position change substantially, the position may need to be reclassified. A written form that asks the following questions must accompany any request for reclassification:

- Is there a current classification that is more appropriate? If so explain why?
- What are the new and expanded duties?
- Who was performing these duties before?
- If the employee is currently performing these expanded duties when did they start?
- What higher level of knowledge, skill and responsibility are required by these new duties?
- What percentage of the employee's time will the new duties take?
- What duties will the employee no longer perform (or continue to perform) as a result of the new duties?
- Has the employee ever filed for or received out of class pay for performing these duties?
- Will the new duties require a higher level of supervisory responsibility and decision making authority?
- What specific duties is the employee performing that are not comparable to those included in the current job description?

Requests for Reclassification

An employee or supervisor may initiate a request for a reclassification review. Such a request must be made in writing using the appropriate form provided by the Human Resource Department. The form shall be submitted through the employee's immediate Supervisor to the Human Resource Department. The Human Resource Director shall consider information provided by the employee and supervisor and will determine if there is the need to conduct a classification review. Within 30 calendar days of receipt of the completed form, the Human Resource Director shall make a recommendation to the employee and supervisor.

Classification Review of New Positions

When a new position is proposed, the department head shall submit a written comprehensive outline describing the duties of the position in detail to the Human Resource Director. The Human Resource Director shall then generate a job description in collaboration with the department head and recommend the appropriate classification and salary range. The job description and classification placement will then be submitted to the City Manager for review, comment, and approval. In accordance with the OPEU contract (1.4) the City shall notify the union in writing of the intended wage rate. In the event the union does not agree with the assigned wage rate, the Union shall notify the City within 30 days and the parties shall negotiate over the wage rate. The City shall not be precluded from filling the position during negotiations.

Classification Upgrading as a result of Review

A change in the classification of a position accompanied by assignment of the position to a higher salary range constitutes upgrading. Whenever a position is upgraded as a result of the review process, the recruitment will be waived and the incumbent placed in the upgraded classification if: 1) the upgrading has resulted from an incremental change in duties, 2) the incumbent has been in the job six months or more; and 3) the supervisor and the Human Resource Director find that the incumbent possesses the minimum qualifications of the higher level position. Upgrading resulting from a reorganization of a department or unit must be filled by competitive recruitment and selection procedures.

Reclassification Request Denials

When a formal request for a reclassification is denied, the Human Resource Director will provide a brief one-page summary explaining the reasons for denial to the Employee and Supervisor. An employee or recognized bargaining unit shall have 14 calendar days from the date the results is received by the employee to file any objections. The objections shall be in writing and will include a brief explanation of why the employee feels the action taken is incorrect and the remedy desired. The City Manager will then review this material with the Human Resource Director and will make the final ruling.

APPENDIX B
Salary Schedule

Effective October 1, 2012
0.5% COLA

	Monthly		Hourly	
Position	Low	High	Low	High
Fleet Hostler	$ 2,345	$ 2,990	$ 13.53	$ 17.25
Equipment Mechanic I	$ 2,653	$ 3,383	$ 15.31	$ 19.52
Transit Driver	$ 2,653	$ 3,383	$ 15.31	$ 19.52
Transit Dispatcher	$ 2,857	$ 3,643	$ 16.48	$ 21.02
Equipment Mechanic II	$ 3,232	$ 4,122	$ 18.65	$ 23.78

Effective July 1, 2013
1.5% COLA

	Monthly		Hourly	
Position	Low	High	Low	High
Fleet Hostler	$ 2,380	$ 3,035	$ 13.73	$ 17.51
Equipment Mechanic I	$ 2,693	$ 3,434	$ 15.54	$ 19.81
Transit Driver	$ 2,693	$ 3,434	$ 15.54	$ 19.81
Transit Dispatcher	$ 2,900	$ 3,698	$ 16.73	$ 21.33
Equipment Mechanic II	$ 3,280	$ 4,184	$ 18.92	$ 24.14

Effective July 1, 2014
2.5% COLA

	Monthly		Hourly	
Position	Low	High	Low	High
Fleet Hostler	$ 2,440	$ 3,111	$ 14.08	$ 17.95
Equipment Mechanic I	$ 2,760	$ 3,520	$ 15.92	$ 20.31
Transit Driver	$ 2,760	$ 3,520	$ 15.92	$ 20.31
Transit Dispatcher	$ 2,973	$ 3,790	$ 17.15	$ 21.87
Equipment Mechanic II	$ 3,362	$ 4,289	$ 19.40	$ 24.74

Effective January 1, 2015
0.5% COLA

	Monthly		Hourly	
Position	Low	High	Low	High
Fleet Hostler	$ 2,452	$ 3,127	$ 14.15	$ 18.04
Equipment Mechanic I	$ 2,774	$ 3,538	$ 16.00	$ 20.41
Transit Driver	$ 2,774	$ 3,538	$ 16.00	$ 20.41
Transit Dispatcher	$ 2,988	$ 3,809	$ 17.24	$ 21.98
Equipment Mechanic II	$ 3,379	$ 4,310	$ 19.49	$ 24.87

APPENDIX C

City of Wilsonville
000010019297

SCHEDULE OF BENEFITS

ELIGIBLE CLASS means: Class 2 — All Other Full-Time and Part-Time Employees Working 20 or More Hours Per Week

LONG-TERM DISABILITY BENEFITS

MINIMUM HOURS PER WEEK: 20

BENEFIT PERCENTAGE: 60%

MAXIMUM MONTHLY BENEFIT: $5,000

MINIMUM MONTHLY BENEFIT: $50

Long-Term Disability Benefits for PRE-EXISTING CONDITIONS will be subject to the Pre-Existing Condition Exclusion on the Exclusion page.

ELIMINATION PERIOD: 90 days of Disability due to the same or a related Sickness or Injury, which must be accumulated within a 180 day period.

MAXIMUM BENEFIT PERIOD (For Sickness or Injury): The Insured Employee's Social Security Normal Retirement Age, or the Maximum Benefit Period shown below (whichever is later).

Age at Disability	Maximum Benefit Period
Less than Age 60	To Age 65
60	60 months
61	48 months
62	42 months
63	36 months
64	30 months
65	24 months
66	21 months
67	18 months
68	15 months
69 and Over	12 months

OWN OCCUPATION PERIOD means a period beginning at the end of the Elimination Period and ending 36 months later for Insured Employees.

WAITING PERIOD: None (For date insurance begins, refer to "Effective Dates" section)

CONTRIBUTIONS: Insured employees are not required to contribute to the cost of the Long-Term Disability coverage.

City of
WILSONVILLE

CITY OF WILSONVILLE

and

WISONVILLE MUNICIPAL EMPLOYEE ASSOCIATION

COLLECTIVE BARGAINING AGREEMENT

JULY 1, 2012 THROUGH JUNE 30, 2015

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PREAMBLE

This Agreement is entered into between the City of Wilsonville, hereinafter referred to as the "City," and the Wilsonville Municipal Employee Association, hereinafter referred to as "Association."

ARTICLE 1 – RECOGNITION

1.1 Association Recognition. The City recognizes the Association as the sole and exclusive collective bargaining representative of all employees covered by this collective bargaining agreement.

1.2 Covered Employees.

Overall Unit. All regular and part-time employees of the City of Wilsonville, excluding the following: supervisory and confidential employees as defined by ORS 243.650(6) and (23); transit employees as defined in ORS 243.738, together with fleet mechanics; interns and/or students; temporary employees; seasonal employees; and employees on on-call status. This unit shall be subject to the collective bargaining dispute resolution process according to strikeable units as under PECBA.

1.3 Employee Descriptions.

Regular Full-Time employees shall be defined as employees who are regularly scheduled to work forty (40) hours a week.

Regular Part-Time employees shall be defined as employees who are regularly scheduled to work twenty (20) or more hours per week. These employees shall receive all benefits provided under this contract on a prorated basis as determined by his/her hours worked.

The City may schedule a less than twenty (20) hour employee to work more than twenty (20) hours in a given week without paying pro-rata benefits to allow for vacation relief, sick leave relief or emergency situations, but in no case shall employees be worked in excess of twenty (20) hours per week for more than four (4) consecutive weeks, or if not consecutive, for an average of more than twenty (20) hours per week in three (3) consecutive pay periods without receiving pro-rata benefits. The pro-ration of benefits will begin upon the conclusion of the applicable four (4) week or three (3) month period so long as additional hours above twenty (20) hours per week continue to be assigned.

Less-than-half-time employees shall be defined as employees who are scheduled to work less than twenty (20) hours per week. Less than half time employees are not eligible for any employee benefits or accrual of employee benefits, including but not limited to, holidays, insurance, retirement, or paid leaves. Notwithstanding the above, a less than half time employee who is required to work on a recognized holiday will be compensated at time and one-half for all hours worked on the holiday.

Temporary and Seasonal employees are those employees working less than 1600 hours per calendar year. Such employees are not part of the bargaining unit and are generally covered by City policy.

Grant funded positions: Positions which are funded by a grant covering 15% or more than the total compensation of the position, including benefits provided under City policy, are not part of the bargaining unit, except under the following:

A. When a position is 15% or more grant funded for a duration of more than 12 months, and if the grant is renewed for an additional period of time exceeding another 12 months, the employee will be included as a member of bargaining unit upon the renewal of the grant.

For all Grant Funded positions:

1. Grant funded positions, regardless of bargaining unit status, serve an initial six (6) month probation period upon initial hire.
2. An employee placed in the bargainnig unit under a grant funded position does not have recall rights, (Article 11). If the City elects to adopt the position into the budget as a fully funded City position, while the employee is curently employed, recall rights are re-established.
3. If the grant is discontinued at any time or not funded after expiration, the position is ended.

1.4 New Classifications. Whenever the City develops a new classification, it shall develop a job description for the position and assign a wage rate. Once this procedure is completed, the City shall notify the Association in writing. In the event the Association does not agree with the assigned wage rate, the Association shall notify the City within fourteen (14) days prior to implemetation. The Association may request to bargain pursuant to ORS 243.698. The City shall not be precluded from filling the position during negotiations.

ARTICLE 2 – NON-DISCRIMINATION

There shall be no discrimination by the City against any employee because of age, race, marital status, mental or physical disability, national origin, sex, religion, or any other protected class, in accordance with applicable law. Neither will the City discriminate based on gender identity or sexual orientation. The provisions of this Agreement shall be applied without discrimination to all employees.

ARTICLE 3 – MANAGEMENT RIGHTS

Except as expressly modified or restricted by a specific provision of this Agreement, all charter, statutory and other managerial rights, prerogatives, and functions are retained and vested exclusively in the City, including, by way of description and not limitation, the rights, in accordance with its sole and exclusive judgment and discretion: to direct and supervise all operations and functions; to manage and direct the work force, including, by way of description and not limitation, the right to determine the methods, processes, locations and manner of

performing work; to hire, promote, transfer and retain employees; to determine schedules of work and work load; to purchase, dispose of and assign equipment and supplies; to determine the need for a reduction or an increase in the work force; to establish, revise and implement standards for hiring, classification, promotion, quality of work, safety, materials and equipment; to implement new and to revise or discard, wholly or in part, methods, procedures, materials, equipment, facilities and standards, and to sub-contract or contract projects or works it deems appropriate. Utilization of any management rights not specifically limited by this Agreement shall be at the City's discretion, provided any bargaining obligation arising from ORS 243.650-672 and the Status of Agreement article (Article 23) contained herein is satisfied. The City's failure to exercise any right, prerogative, or function hereby reserved to it, or the City's exercise of any such right, prerogative, or function in a particular way, shall not be considered a waiver of the City's right to exercise such right, prerogative, or function or preclude it from exercising the same in some other way not in conflict with the express provisions of this Agreement.

ARTICLE 4 – ASSOCIATION SECURITY

4.1 Checkoff. The City agrees to deduct the uniformly required Association membership dues and other authorized fees, contributions or assessments once each month from the pay of those employees who have authorized such deductions in writing.

4.2 Fair Share. Fair share shall be deducted from the wages of non-member employees in accordance with ORS 243.666(1) and 243.672(1)(c). Fair share deductions shall be made for the month in which the employee was hired. The aggregate deductions of all fair share payers shall be remitted together with an "itemized reconciliation" to the Association no later than the fifth (5^{th}) working day of the month following the month for which the fair share deductions were made.

4.3 Religious Objection. Bargaining unit members who exercise their right of non-association when based on a bona fide religious tenet or teaching of a church or religious body of which such employee is a member, shall pay an amount equivalent to regular monthly Association dues to a non-religious charity or to another charitable organization mutually agreed upon by the employee and the Association. Such payment shall be remitted to that charity by the employee and this fact certified by the employee to the City within fifteen (15) calendar days of the time dues or fair share payment would have been taken out of the employee's paycheck. The City shall, within fifteen (15) calendar days of its receipt, send a copy of such certification to the Association. If an employee fails to provide certification to the City by the fifteenth (15^{th}) day, the City shall resume dues or fair share deductions until such notice is provided.

4.4 Electronic Membership Data. The City will furnish the Association, upon reasonable request, using an electronic medium, the following information for each bargaining unit employee: name; employee identification number; fair share/member status; amount of dues withheld; classification; base pay rate; hire date; and full-time/part-time status.

ARTICLE 5 – ASSOCIATION BUSINESS

5.1 Representatives. The Association will notify the City, in writing, of the names of its representatives and/or elected officers within thirty (30) days of any changes.

5.2 Access. Representatives of the Association shall have reasonable access to the City's facilities to visit employees when necessary during working hours. Notice of such visits to non-public areas shall be given to the department head and the visits shall be conducted in a manner that minimizes any work disruption.

Association representatives/officers will be granted reasonable time off and access to employee work locations during working hours to process grievances through the arbitration step.

5.3 Bulletin Board. Bulletin board space in each building of the City shall be provided the Association for the posting of meeting notices and other information directly related to the Association affairs of the employees covered by this contract.

5.4 Collective Bargaining Activities. The City will allow up to three employees reasonable time off, without loss of pay, for the purpose of collective bargaining sessions, or additional time subject to mutually agreed ground rules. No more than two (2) employees may be off from work from any one division.

5.5 Use of the City Email.

(a) The parties recognize that the City email system, and all portions thereof, is at all times the sole property of the City. This resource is provided or assigned to employees to facilitate the orderly and efficient conduct of the public's business. In general, all such communications are subject to disclosure. The City will not assert any exceptions or exemptions from disclosure as to public records that happen to contain messages relating to Association activity by City employees. The parties recognize that the City may review all City emails in the City system at any time.

(b) Employees elected/appointed to official positions with the Association and/or representatives may use the City's email system to conduct Association business for the limited purposes of:

1. Notifying Association members of meetings and scheduling meetings (date, time, place, and agenda);
2. Scheduling meetings among Association officers and/or representatives (date, time, place, and agenda); and
3. Filing official correspondence to the City (e.g., grievance documents).

Such email communications may only be prepared and sent during non-work time, which is limited to before and after work, and during meal and rest periods.

(c) Misuse of the City email system will be subject to the disciplinary process.

ARTICLE 6 – HOURS OF WORK

6.1 Workweek. Except as provided in Section 6.3, the workweek shall begin on Sunday at 12:01 A.M. and end at midnight on the following Saturday.

6.2 Regular Work Schedule. The regular schedule for regular full-time employees shall normally consist of five (5) consecutive eight (8) hour days in a workweek with two (2) consecutive days off between regular work weeks.

Based on specific bona fide operational needs, the City may assign a work schedule that has a break in consecutive hours or days. If an assignment to a non-consecutive work schedule becomes necessary, the affected employee(s) shall meet with their supervisor and may suggest alternatives. Once the work schedule change is made, employees will be given an opportunity to bid for the schedule based on their seniority. The parties have adopted this provision for the purpose of encouraging full-time employment while accommodating the operational needs of the City. However, this Section is not intended to create any obligation of the City to guarantee any level of work hours or days.

6.3 Modified Work Schedule. A modified work schedule is a schedule which varies from an eight (8) hour work day and/or varies in consecutive days worked. An employee may apply in writing for authorization to work a modifed work schedule, for example, four/ten (4/10) hour days.

As long as the schedule meets the operational and service needs of the City, no employee will be denied a modified work schedule. Modified work schedules may be modified, revised, and/or eliminated consistent with Section 6.4 below.

In the event the City grants a modified work schedule, the City reserves the right to modify the workweek.

6.4 Work Schedules. Regular employees shall be notified of their work schedule, including the employee's workdays and hours. Employees will be given notice of work schedule changes ten (10) work days in advance of the change. If a ten (10) day notice is not given, the employee shall be compensated at the overtime rate as per Article 7.4 for all hours worked outside the regular schedule until the notice requirement is met.

Notwithstanding the above, the ten (10) day notice is not required in the following circumstances:

A. In the case of an emergency and for the duration thereof;
B. Mutual agreement between the City and the employee; or
C. Additional or substituted hours assigned to part-time employees.

An emergency shall be defined as a situation beyond the City's control that requires a schedule change to meet operational needs, e.g., impact of inclement weather, natural disasters, illness or

injury. Emergency work schedule changes will be discussed with the Association upon request, but such discussions are not a precondition to implementing the changes.

Employees may exchange days, shifts, or hours of work with supervisor approval provided such change does not result in the payment of overtime or presents a disruption to the normal routine of duties. Such exchanges shall not be considered as schedule changes necessitating the ten (10) day notice.

6.5 Rest and Meal Periods. All employees working more than five (5) consecutive hours in any workday shall receive at least a one-half (1/2) hour unpaid lunch break and a fifteen (15) minute paid break during each four (4) consecutive hour work period. Part-time employees working at least four (4) hours in a workday shall receive a ten (10) minute paid break period.

Modification of State Law. The provisions of this Section regarding appropriate meal periods and rest periods are intended to modify state law concerning meal periods and rest periods as allowed under OAR 839-020-0050.

ARTICLE 7 – OVERTIME

7.1 Waiver. The City and the Association agree to waive application of ORS 653.268 and shall utilize the following provisions in determining compensation for overtime.

7.2 Definition. Overtime shall be compensated for time worked in excess of eight (8) hours in any one day or forty (40) hours per workweek at a rate of one and one-half (1-½) times the employee's regular rate of pay. For the purposes of calculating overtime, paid leaves do not count as hours worked.

For those employees working a modified work schedule, as under Article 6.3, overtime shall be compensated for time worked in excess of the daily scheduled shift or in excess of forty (40) hours per workweek. Part time employees shall be compensated for time worked in excess of forty (40) hours per workweek.

Overtime shall be computed to the nearest fifteen (15) minutes, either way. Personal clean-up time shall count for purposes of overtime compensation.

7.3 Assignment. Overtime work must be authorized by management. An employee may be directed and assigned by the City to work in addition to the employee's regular work schedule. The City shall equally offer overtime assignments among those bargaining unit employees in the department who volunteer for the time and are qualified to perform the necessary work.

7.4 Form of Compensation. The employee may receive payment as compensation for overtime or shall be compensated with time off at one and one-half (1-½) times the regular rate. Compensatory time shall not accrue beyond forty (40) hours. Compensatory time off will not be unreasonably denied, and shall be taken as approved by the department head, consistent with the needs of the City. This section shall not preclude the parties from mutually agreeing to

temporarily exceed the 40 hour cap for an employee due to special circumstances up to 240 hours.

7.5 Pyramiding. There shall be no pyramiding of overtime. Time for which overtime or premium compensation may be paid under any provision of this Agreement shall not be counted as time worked for the purpose of computing overtime or premium compensation under any other provision, or any applicable rule or regulation, it being intended and agreed that overtime or premium compensation shall not be duplicated or pyramided for the same time worked or credited.

7.6 Payment Upon End of Employment. Upon ending the employment relationship, an employee shall be paid for unused compensatory time at the employee's final regular rate of pay and in the next regular pay period.

7.7 Callback. Employees called back to work outside their work hours shall be compensated with a minimum three (3) hours of overtime. The calculation of overtime starts when the employee arrives at work and ends when the work is completed. This callback shall not apply if an employee is called back within three (3) hours of the beginning of his/her callback shift. Callback will apply on an employee's regular day off if overtime is not scheduled in a single block of time. As provided above in Section 7.5, Pyramiding, the City will not be required to compensate an employee twice for the same hours. Specifically, an employee called back more than once in a three (3) hour period shall only receive compensation for one callback. For example, one callback shall apply if an employee is called back two (2) or more times between 8:00 pm and 11:00 pm. However, if the last callback requires the employee to work later than 11:00 pm, work performed beyond 11:00 pm shall be compensated at the normal overtime rate.

Scheduled overtime will be treated as callback if the City fails to schedule the time in a single block.

7.8 Standby. "Standby" is defined as a period of time that an employees is required to be ready and available for work, including maintaining a proximity to work of a drive time of less than 45 minutes and being fully capable to respond to work calls, including no use of any substance which may impair the employee from driving or responding to work duty. The City will maintain its voluntary system for standby. The City may require employees to be on standby on a rotational basis.

Employees who carry pager units for one week will be compensated at the rate of eight (8) hours straight time for each seven (7) day assignment. If a one (1) day holiday falls during the week on pager duty, the employee will be compensated at the rate of twelve (12) hours straight time for that week. If a two (2) day holiday falls during the week on the pager duty, the employee will be compensated at the rate of sixteen (16) hours straight time for that week. Employees may trade days within their week with other qualified employees. Immediate notice of the trade must be provided to the supervisor. Employees that are placed on standby for less than a week will be compensated on a prorated basis.

No overtime shall be paid unless the employee is required to return to work.

ARTICLE 8 – SPECIAL ALLOWANCES

8.1 Use of Personal Vehicle. Whenever an employee is authorized to use a personal vehicle in the performance of official City duties, the employee shall be reimbursed at the rate established by the IRS as the maximum allowable rate for business travel. All mileage reimbursed shall be as a result of authorized personal vehicle use. "Authorized" means approved by the employee's Department Head or the City Manager/designee.

The City will verify and announce the allowable IRS rate as of January 1 of each year.

Employees who are required to use a personal vehicle for City use must provide proof of insurance as required by state statute when requested by the City.

8.2 Licenses. The City shall pay the fees associated with obtaining and maintaining a SMV/CDL license when required by the City to perform the duties of an employee's job, excluding the regular driver's license.

The City will continue to maintain required certificates, licenses and memberships at no cost to employees. In the case of a required CDL, the City will pay the associated administrative fees and the basic DOT examination for obtaining and maintaining the license for any cost above that of maintaining a regular driver's license. The City will offer opportunities for desired certificates, licenses and memberships on an available funds basis. Whenever an employee can obtain or retain a higher certification that is pertinent to their job, the City will maintain that higher level of certification so long as there is no additional cost to the City and certification of the same nature at a lower level is a requirement of his/her job.

Funds permitting, employees who hold current job-related certifications, licenses, or memberships will receive first priority for maintaining them. Employees interested in obtaining job-related certifications, licenses or memberships will be allowed the opportunity to apply for licenses, memberships or certifications based on a rotational system beginning with the most senior of those who volunteer.

Employees who voluntarily transfer or are promoted to another classification that has a requirement for certifications or licenses may be required to cover the cost of obtaining those certifications or licenses.

8.3 Safety Equipment. The City shall provide required safety equipment as listed below and/or as deemed necessary by OSHA and the City will replace this equipment as necessitated by wear and tear on the job.

Hard hats, ANSI-approved safety-toed boots up to $150 for boots or an amount determined by the supervisor and Human Resources, gloves (rubber and regular), safety vests rubber boots, rain gear, safety glasses, hearing protection, masks and respirators.

8.4 Clothing. The City will provide clothing and reimbursements to regular full-time employees and regular part-time transit employees as provided below:

Covereralls as needed.
Insulated coveralls as needed.

Shirts: annually: Operations (5 qty), Stormwater Coordinator (5 qty), Industrial Pre-Treatment Technician (5 qty).

Jeans - Operations, Stormwater Coordinator, Industrial Pretreatment Tech, Engineering Inspectors, and Building Inspectors not to exceed $180 per fiscal year. This benefit is taxable to the employee and will dispersed in monthly payments.

Jackets: 1 Jacket – Planner
1 Spring and 1 Winter Jacket for: Stormwater Coordinator, Industrial Pretreatment Tech, Engineering Inspectors, Building Inspectors, and Operations as needed.

Clothing and laundry service will be provided as follows:
Public Works – Standard coveralls

Where no monetary allowance is provided, employees will be required to turn in clothing and equipment in order to receive new clothes and equipment on an as needed basis.

8.5 Physical Examination. When employees are required to undergo a physical exam for licensing or certifications for the purposes of their position, such as DOT examinations, the City shall bear the expense for the basic examination. Employees shall be required to see the City's choice in physicians. The City shall provide three (3) different choices in physicians one of which will be female and one of which will be male. Employees receiving notice of loss of CDL or medical card must report such to the supervisor.

ARTICLE 9 – PROBATIONARY PERIOD

9.1 Original Appointments. All original appointments and hiring of new employees, shall be tentative and subject to a probationary period of not more than six (6) consecutive months from the date of initial employment, except that employees hired as less than half time will remain on probation for 1040 hours or one (1) year, whichever comes first from the hire date. In the event the probationary period is interrupted, it may be extended by the period of the interruption, but not to exceed twelve (12) months from the date of hire.

In cases where the responsibilities of a position are such that a longer period is necessary to demonstrate an employee's qualifications, the probationary period may be extended in the sole discretion of the City; however, no probationary period shall be extended beyond twelve (12) months. The employee and the Association shall be notified in writing of any extension and the reasons therefor. Upon the employee's request, a meeting will be scheduled where the employee is afforded the opportunity to discuss the extension with their supervisor. If the employee is not notified of the intent to extend probation within the first six (6) months, probation will be considered completed thereafter.

If an employee's probationary period is being extended for the purposes of obtaining a certification or license, the probationary period will end upon the employee achieving the necessary certification or license.

During the initial probationary period (including any extension thereof, but not after a promotion), the employee shall not be eligible for vacation benefits, but shall earn vacation credit to be taken at a later date.

During the initial probationary period, the employee shall accrue and be eligible to use sick leave.

Probationary employees may be terminated or disciplined for any reason, and such action shall not constitute a violation of this contract, nor be subject to the grievance procedure.

Upon completion of the probationary period, the employee shall be considered to have satisfactorily demonstrated qualifications for the position, shall gain regular status, and shall be given a copy of the passing performance evaluation.

9.2 Promotions. A current non-probationary employee who are successful in his/her bid for a promotion within the bargaining unit will serve a six (6) month probationary period for the sole purpose of determining whether the employee can perform the duties of the new position. If the employee is unable to perform the duties of the new position, he/she shall be entitled to return to his/her former job with all seniority and benefits.

In the event the promotional opportunity is outside of the bargaining unit, the employee retains the right to return to the bargaining unit if their failure to make probation within six (6) months is for anything other than disciplinary reasons. Time spent outside the bargaining unit will not accrue toward bargaining unit seniority.

ARTICLE 10 – GENERAL PROVISIONS

10.1 Seniority. For the purpose of this Agreement, seniority shall be defined as an employee's length of service within the bargaining unit from the last date of hire with the City except as provided below. The City shall provide the Association with a seniority list annually.

In the event two (2) or more full-time employees are hired into the bargaining unit on the same date, seniority ranking shall be determined by the flip of a coin. Part-time employees shall accrue seniority on actual hours worked, less any overtime or comp time hours (2080 hours equals one year).

If an employee has a break in service for a voluntary reason and returns to employment within twelve (12) months of the break in service, all previous seniority and rates of vacation accrual shall be restored.

Seniority shall be terminated if an employee:

a) Resigns for voluntary reasons and does not return within twelve (12) months.
b) Is discharged or resigns in lieu of disciplinary action.
c) Is laid off and fails to respond to written notice provided in Article 11, Reduction in Force.
d) Is laid off work for a period of time greater than two (2) years.
e) Is retired.

Seniority shall not be affected by use of paid leaves, FMLA, OFLA, military leave under applicable statute, and worker's compensation.

Seniority and anniversary dates will be changed depending on when employees change from part-time to full-time employment or vice versa.

Part-time hours will be converted to an equivalent amount of time to credit full-time service. When making this conversion, the City will utilize 2080 as annual hours to make one (1) year and 173.33 to equal one month. Any hours less than 173.33 will be rounded to the nearest whole day. One-half (1/2) day will be rounded up.

10.2 Outside Employment. Notice of outside employment while an employee of the City shall be given to the City Manager or his/her designee. The City reserves the right to require termination of that employment when it:

a) Proves incompatible with the employee's City work schedule;
b) Detracts from the efficiency of the employee in his/her City work;
c) Results in a conflict of interest; or
d) Poses a safety hazard.

10.3 Contracting Out. Only if contracting work out results in the layoff or demotion of current bargaining unit employees, the City shall notify the Association no less than seventy days (70) days prior to the issuance of any request for proposals or consideration of proposals to contract out work presently and regularly performed by bargaining unit employees. Such notification shall include a detailed analysis of the likely impact on the bargaining unit, and shall also outline the supporting reasons the City deemed pertinent to its decision. If there are financial reasons underlying the decision, the supporting reasons will include economic rationale.

The Association shall have forty-five (45) days from the receipt of such notice to request bargaining over the impacts on the employee of the proposed contracting out on bargaining unit employees. Upon such timely request, the City shall meet with the Association and enter into mid-term bargaining (ORS 243.698) only over the effects of the contracting out decision. In any event, the Association shall be given the opportunity to discuss alternatives with the City.
For the purpose of this Article, effects bargaining shall only be required if the decision to contract out work will create a layoff or demotion of current bargaining unit employees. In the event of a bona fide emergency, notice may be less than seventy (70) days.

10.4 Job Vacancies. Except for reclassifications, the City agrees to post all newly-created positions or job openings within the bargaining unit on departmental bulletin boards for five (5)

workdays prior to any other recruitment process occurring, except that temporary positions may be filled without such notice. If the duties of the newly-created job are currently being performed by a bargaining unit member, the job will be posted internally only. A copy of all postings will be delivered to the Association at time of posting.

Current employees will be given first opportunity to apply for promotional opportunities within the bargaining unit. Employees will be notified of the opportunity by posting of the job announcement on departmental bulletin boards for at least five (5) workdays prior to the City's decision whether or not to open the recruitment to outside applicants. In the event the City decides to open the recruitment to outside applicants, the City will notify each internal applicant of the reason(s) for the decision. Regardless of whether or not the City requests outside applicants, all qualified employees will be given an opportunity to interview and full consideration for the position should they participate in an interview.

10.5 Labor/Management Meetings. The parties will, upon mutual agreement, meet regularly to discuss labor-management issues regarding the administration of this Agreement or other issues of concern.

10.6 Position Description. Employees will be provided a copy of their position description upon employment. A copy of the position description will be placed in the employee's personnel file. Each employee's position description will be reviewed annually during their annual review. If the review results in a modification of the position description, the employee will be given an updated copy and a copy will be placed in the employee's personnel file. If a change is made to the position description between annual reviews, the employee will be contacted.

10.7 Transfer of Bargaining Unit Work. Nothing prohibits the City from assigning non-bargaining unit employees, including but not limited to employees, supervisors, and managers, work presently and regularly performed by bargaining unit employees in cases of emergencies as determined by the City, absences, relief, training employees, or other incidental bargaining unit work.

10.8 Policy and Procedures. Whenever a procedure or policy is developed or a change is made to an existing written procedure or policy, the City will provide a copy to the Association for review 14 calendar days prior to implementation. In the event the Association makes a demand to bargain within this time, the City shall enter into bargaining pursuant to ORS 243.698. In the event the change is based on urgent circumstances, the City may implement upon notice to the Association. The PECBA process otherwise applies.

ARTICLE 11 – REDUCTION IN FORCE

11.1 Layoff. If there are changes of duties in the organization, lack of work, or lack of funds, the City Manager may lay off employees. Layoffs are at the discretion of the City.

All temporary and seasonal positions shall be laid off prior to the layoff of any regular status bargaining unit employees, so long as the temporary work falls within the usual and customary duties of the bargaining unit employees.

An employee shall be given notice of a layoff as soon as reasonably possible, but no less than fourteen (14) calendar days before the effective date. Notice of the layoff will be given to the Association, or designee, and to the employee.

Employees shall be laid off in a department in the inverse order of their bargaining unit seniority within the job description affected by the layoff. The City Manager shall first make every reasonable effort to integrate those employees into another position for which the employee is qualified, as determined by the City, by transfer or consider alternatives to layoff by the Association.

Within individual departments, a bargaining unit employee scheduled for layoff may bump the least senior employee at the same or lower salary range occupying a position the employee previously held in the employee's present department. An employee wishing to bump must exercise his or her right within five (5) calendar days from the date he/she receives his or her layoff notice. To bump to the position, the employee must have completed probation in the position they are bumping to. A bump will only be allowed if the employee is still able to perform the essential functions of the job and has all the qualifications presented in the job description. In the event an employee does not currently have the relevant certification/license, the employee is still eligible to exercise this bumping right provided the pertinent certification/license is and can be obtained within six (6) months.

An employee who bumps another employee must complete probation in the position. Failure to make probation within six (6) months will result in the employee's termination.

In an effort to minimize the disruption to the workforce, an employee who is bumped will not have a right to bump and will be laid off.

When layoffs occur in a part-time position, part-time seniority cannot be applied to the same full-time position in the department. This means a part-time employee cannot bump a full-time employee under any circumstances.

11.2 Recall. Employees who were laid off shall be recalled to the position they were laid off from, if it still exists, by inverse order of their layoff, and shall remain eligible for recall for two (2) years. As a result of a layoff, the City reserves the right to direct the work load to other employees.

11.3 Notice. It shall be the responsibility of the employees laid off to keep the City informed of the address at which they may be reached and re-employment shall be offered in person or by certified mail addressed to the last address furnished by the employee. When an offer of re-employment has been made, the laid off employee shall advise the City of acceptance within five (5) calendar days and shall report for duty within ten (10) days of the receipt of the notification by the City. Any employee who fails to accept re-employment at his/her previous position when offered by the City in accordance with provisions of this Article, shall be deemed to have forfeited all recall rights.

ARTICLE 12 – COMPENSATION

12.1 Wages.

Effective October 1, 2012, each employee base wage will be increased by .5% (one-half percent).

Effective July 1, 2013, each employee base wage will be increased by 1.75% (one and three-quarter percent).

Effective July 1, 2014, each employee base wage will be increased by 2.5% (two and one-half percent).

12.2 Step Increases. Movement within the employee's salary range will be granted to regular full-time and regular part-time employees annually based on satisfactory performance and continuous service. Less than half-time employees will be granted step increases upon either reaching 2,080 hours or two years. (whichever comes first).

Movement within the salary range shall be at least four percent (4%). The City will retain the right to grant employees movement greater than four percent (4%) and grant employees at the top of their range bonuses if deemed appropriate. Discretionary increases above 4% and bonuses are not grievable. In the event movement within the City's salary range is denied, the employee will be entitled to appeal the decision through the grievance procedure. The Employer will provide reasonable notice of deficiency prior to denial of an employee's movement within the salary range.

12.3 Workers' Compensation. Employees receiving Workers' Compensation benefits will be allowed to integrate their sick leave or other paid leave with the payments so they will receive their net salary amount each pay period. The "net" shall be defined as their salary less state and federal income taxes and FICA at the time of the injury or illness.

The City will provide employees with full benefits, at the contribution levels outlined in Section 12.4, Insurance, below, while on Workers' Compensation for up to one (1) full year after the date of covered illness or injury.

The City and the Association agree that light-duty opportunities will be assigned to employees if work is available and the employee is certified by a physician to perform the duties of the position.

12.4 Health Insurance.

Effective September 1, 2012, The City will contribute no more than ninety two percent (92%) of the monthly premium per regular full-time employee toward either the Kaiser plans or Copay plans with accompanying dental options. The employee will be responsible for the difference and will pay the monthly amount through a payroll deduction.

Effective January 1, 2014, The City will contribute no more than ninety percent (90%) of the monthly premium per regular full-time employee toward either the Kaiser plans or Copay plans with accompanying dental options. The employee will be responsible for the difference and will pay the monthly amount through a payroll deduction.

Regular part-time employees will be responsible for paying a percentage of the selected health insurance plan premium based on a pro-rata basis as identified in Section 1.3.

The City will also continue to maintain CIS Life Plan 5 ($25,000) and the matching accidental death and dismemberment benefit.

The City shall not be obligated to increase its dollar contributions to the plans after June 30, 2015, unless otherwise mutually agreed or negotiated by the parties.

The City will provide employees with the opportunity to contribute to a Flexible Spending Account.

12.5 Long Term Disability Insurance. The City will provide employees with long-term disability insurance as specified in the policy manual.

12.6 City's Right to Modify Plan and/or Benefits. The Employer retains the right to change the plan benefits, insurance carriers, and/or administrators as long as it provides benefits comparable to the City's current healthcare plan set forth in Section 12.4, Insurance.

12.7 Retirement. The City shall continue to participate in the Public Employees Retirement System/Oregon Public Service Retirement Plan Pension (OPSRPP) or any successor plan as required by the governing statutes and administrative rules and will continue to pick-up the employee's contribution of six percent (6%). In the event it is determined by the Legislature, courts, or initiative that the City cannot pick up the employee's contribution, the six percent (6%) shall revert to salary.

The City will continue to participate in the program for use of unused accumulated sick leave as an "option" choice for employees as provided by statute and administrative rule.

12.8 Work Out of Classification. Assignments of personnel to a higher classification on an acting basis may be made by the City. When such assignments are made, they shall be specific and placed in writing to the employee. When so assigned, for more than 4 hours in the workday, the employee shall be compensated at five percent (5%) above their current salary.

The City will not change assignments to avoid payment on work out of class, unless such change is an operational necessity.

12.9 Promotion. Employees that are promoted shall receive at least a five percent (5%) pay increase, so long as such increase does not exceed the range the employee is moving to. Reclassifications are not subject to 12.9.

12.10 Reclassification. In order to provide easy access for employees, the City will place all classification descriptions for the bargaining unit on the City's intranet. Whenever requests for reclassification are made under this appendix, the City will notify the Association President.

Employees who are reclassified to a higher pay range will be moved to the higher range based on the percentage difference between the two ranges. Thereafter, the employee will move on the range based upon the anniversary date that was established in their prior classification. For example, if the ranges are two and one-half percent (2½%) apart, the employee will receive a two and one-half percent (2½%) increase, so long as such increase does not exceed the range the employee is moving to. In establishing the salary for the reclassified employee, the relative position within the new pay range shall be the same as the relative position in the former range.

ARTICLE 13 – HOLIDAYS

13.1 Holidays Observed. The City shall observe the following paid holidays:

New Year's Day - January 1st

M. L. King, Jr.'s Birthday - 3rd Mon. in January

Presidents' Day - 3rd Monday in February

Memorial Day - Last Monday in May

Independence Day - July 4th

Labor Day - First Monday in September

Veterans' Day - November 11th

Thanksgiving Day–4th Thursday in November

Day after Thanksgiving

Christmas Day - December 25th

All regular full-time City employees shall be paid eight (8) hours at their regular straight-time hourly wage for all holidays referred to under this Section. An employee has the option of using vacation, compensatory time, leave without pay, or work extra hour(s) to offset this benefit when given a day off that exceeds eight (8) hours within the pay period. Regular part-time employees shall accrue holiday pay on a pro-rata basis.

13.2 Holidays Falling on Scheduled Days Off. For employees whose normal week is Monday through Friday, whenever a holiday falls on Saturday, the preceding Friday shall be given as a holiday. If it falls on Sunday, the following Monday shall be given as a holiday. The same pattern will be followed for employees whose workweek is other than Monday through Friday. Whenever a holiday falls on an employee's first day off, the preceding day shall be considered the holiday. When a holiday falls on an employee's second day off, the following day shall be considered the holiday.

When a holiday falls on a Monday or Friday giving the majority of City employees a three (3) day weekend, an employee whose days off are other than Saturday and Sunday may, with supervisor approval, choose to take the day preceding or the day after his/her weekend off as a holiday in lieu of taking the actual holiday, thus giving his/her a three (3) day weekend like other City employees.

13.3 Holidays During Leave. Holidays that occur during paid leave time of any type shall not be charged against such leave.

13.4 Holiday Pay. If any employee works on a recognized holiday, that employee shall be paid for all hours worked at time and one-half the regular rate of pay plus regular holiday pay. The time and one-half pay specified above shall occur only on the actual holiday.

13.5 Holiday Work. In scheduling holiday work, the City shall first solicit volunteers from the qualifying work group and give all volunteering employees equal opportunities for holiday work by rotating assignments. When insufficient numbers of people volunteer for holiday work, employees (other than temporary and seasonal employees) shall be assigned on a rotational basis by inverse seniority.

ARTICLE 14 – VACATION

14.1 Accrual.

Months of Service	Accrued Leave Hours (rate)
0-60	7.33 hours / 11 days
61-120	10.67 hours / 16 days
121-180	12.67 hours / 19 days
181+	15.34 hours / 23 days

Annual vacation leave shall accrue monthly and may be taken when earned. Part-time employees shall accrue vacation leave on a pro-rata basis.

14.2 Eligibility. New employees shall not be eligible for vacation leave during probation, although vacation leave shall accrue from the beginning of employment. Up to 40 hours of vacation may be taken after satisfactory completion of probation. Upon request, the City, may allow an employee to use earned vacation days during probationary periods.

14.3 Maximum Accrual. Employees shall be required to take one (1) week of vacation per year, but may only accrue up to 240 hours of vacation leave with pay.

14.4 Scheduling. Supervisors shall schedule vacation for their respective employees with due consideration for the desires of the employees and the City's work requirements. Vacation schedules may be amended to allow each supervisor to meet emergency situations. In the event that more than one (1) employee has requested the same vacation period off and the workload does not permit all employees to have that period off, the supervisor shall first ask for any volunteers who are willing to reschedule their request. In the event there are insufficient volunteers, preference shall be granted on the basis of seniority provided, however, that each employee may only exercise their seniority for vacation bidding once per calendar year.

14.5 Pay Upon Separation. Upon separation from employment, unused vacation benefits earned will be paid out with the final paycheck.

14.6 Vacation Cancellation. In the event approved vacation leave is canceled by the City, the employee shall be notified of the cancellation in writing. Unrecoverable transportation, lodging deposits or other bona fide expenses such as hunting tags, event tickets, etc., will be reimbursed by the City.

14.7 Vacation Transfer. Subject to the requirements above in maximum accrual, the City shall allow employees to transfer accumulated vacation to a dedicated leave bank for use by other City employees who are qualified to receive paid leave donations, as defined by the FMLA, who has exhausted all accumulated leave. Donated leaves are irrevocable. The FMLA definition does not limit the time frame the employee may need or request for transfer of leave. It is only used for defining "serious illness or injury." Donations for leave must be submitted in writing and are subject IRS regulations. Whenever an employee is receiving wages and benefits as a result of donated time, the donated time shall be used to offset any insurance contribution expense to the City.

ARTICLE 15 – SICK LEAVE

15.1 Accrual. All regular full-time City employees shall earn sick leave with full pay at the rate of eight (8) hours for each calendar month of service. Sick leave shall accrue from the date of employment.

15.2 Utilization. Employees are eligible for sick leave for the following reasons:

a) Non-occupational personal illness or physical disability.

b) Quarantine of an employee by a physician for non-occupationally related disability.

c) Illness of an immediate family member requiring the employee to remain at home. For the purposes of this Section, immediate family member shall include spouse, domestic partner, parents (including step-parents), children (including step-children and foster children), current father-in-law and mother-in-law, grandparents, grandchildren, and other relatives living in the employee's household.

d) Necessity for medical or dental care.

e) Any time utilized under this Section will be utilized in increments of fifteen (15) minutes which will be rounded up to the next quarter (¼) hour on each occasion.

f) Written proof of the need for sick leave from the attending physician may be required at the City's discretion for absences in excess of three (3) consecutive work days, or if the City has reason to believe that the employee is abusing sick leave privileges. Misuse of sick leave benefits will be subject to disciplinary action.

15.3 Notification. An employee who is unable to report for work as scheduled shall report the reasons for absence to his/her supervisor, when possible, one (1) hour prior to the time the

employee is expected to report for work. Sick leave with pay shall not be allowed unless such report has been made or unless special circumstances existed to justify the failure to report. Additionally, the employee must call in to report any continuing need to be absent to his immediate supervisor prior to the start of each subsequent shift to be eligible for sick leave benefits on these workdays. No daily notice will be required when the employee has submitted a doctor's slip which specifically states he will be unable to return to work until a certain date.

15.4 Use of Other Accrued Leave. Once sick leave is exhausted, an employee with a serious illness or injury can use other forms of accrued leave (e.g., vacation, compensatory time, etc.).

15.5 Family Medical Leave. Employees shall be granted twelve (12) weeks leave upon request pursuant to ORS 659.470-494. Employees must use, in the following order, sick leave, compensatory time, accrued vacation, and/or leave without pay while on Family Medical Leave. The employee shall submit his/her request for Family Medical Leave in writing.

15.6 Physician Evaluation. The City may require an employee to see a physician of the employee's choice whenever it objectively believes the employee may be unable to safely perform their job. The employee will bear the cost of the physician's visit. When it becomes necessary to seek a physician's certification, the City will inform the employee and the Association and place the employee on paid administrative leave until the employee can be examined. The City will be required to pay the employee for the time spent traveling to and from the doctor if outside of administrative leave hours, and will pay mileage. If concerns regarding the employee's ability to safely perform his/her job continue, the City may require the employee to see a physician of the City's choosing. The City will bear the cost of the physician's visit.

15.7 Transfer. The City shall allow employees to transfer accumulated sick leave to a co-worker with a serious injury or illness, as defined by the FMLA, who has exhausted all accumulated leave, provided the transferring employee maintains a sick leave balance for their own use of at least 480 hours. The FMLA definition does not limit the time frame the employee may need or request for transfer of leave. It is only used for defining "serious illness or injury." Donations for leave must be submitted in writing.

Whenever an employee is receiving wages and benefits as a result of donated time, the donated time shall be used to offset any and all benefit or roll-up expense to the City.

15.8 Required Leave. The City Manager/designee may require an employee to use sick leave and leave the work place if it is determined the employee is too ill to work or could expose their illness to the public or other employees.

15.9 Return to Work. The City may require an employee to provide a note from their personal physician stating they are able to return to work when returning from sick leave.

ARTICLE 16 – EDUCATIONAL OPPORTUNITIES

16.1 Tuition Reimbursement. The City may reimburse an employee for full tuition costs for one (1) class per term, not to exceed three (3) classes per year, provided that:

a) The class is directly related to the employee's work (or to a position to which an employee can reasonably expect to be promoted).

b) The employee has made prior arrangement with his/her supervisor and received approval from the City Manager/designee for reimbursement prior to registration for such course.

c) Prior to reimbursement by the City, the employee must submit evidence of satisfactory completion of the course. Satisfactory completion means the employee receives a grade of "C" or better, or a passing grade in a pass/fail class.

d) The employee is not receiving reimbursement for tuition from any other source.

e) The employee agrees to continue employment with the City at least six (6) months following satisfactory completion of the course or will reimburse the City for tuition costs paid during his/her last six (6) months of employment with the City.

16.2 Leave and Expenses. The City shall allow time off with pay and shall pay all expenses of attending classes, lectures, conferences, or conventions, when attendance is on an assignment basis and approved by the City Manager/designee. Studying or preparing for classes, lectures, conferences, or conventions shall not be allowed on work time.

Employees who are required to attend out-of-town training, either by the department supervisor or as required by the City to maintain required job-related certifications/licenses, will be paid for the travel time outside of their normal schedule. Travel time for required local training will also be paid if it exceeds the normal commute time the employee experiences traveling to and from work. If this time causes them to exceed forty (40) hours in a week, it will be paid at the applicable overtime rate or the employee may flex their schedule to compensate for the hours. However, if it is foreseeable the travel time will cause the employee to exceed forty (40) hours in a workweek, the employee must receive the City's approval of the overtime. Meals shall be reimbursed according to the City's Travel Policy. Employees who voluntarily attend training that is approved by the City during the employee's normal work schedule shall only be compensated for their normal work schedule.

16.3 Work-Related Courses. When an employee wishes to take a work-related course(s) which is only offered during regular working hours, the City Manager/designee may either:

a) Pay for the cost of the course and related tests in advance, provided that the employee takes the necessary time off without pay or makes prior arrangements with his/her supervisor for alternative working hours. In the event the employee fails to pass or complete the course or tests, the employee will be required to reimburse the City for the advanced costs; or

b) Allow time off with pay provided the employee pays his/her own tuition costs and prior arrangements are made with his/her supervisor and approved by the City Manager/designee.

16.4 Cost of Textbooks. The cost of textbooks and technical publications required for courses for an employee's current position shall be the responsibility of the City. Upon completion of such courses, the textbooks and technical publications shall remain City property.

ARTICLE 17 – OTHER LEAVES

17.1 Criteria and Procedure. All requests for an unpaid leave of absence shall be submitted in writing to the City Manager or a designee. The written application must describe the reason for the request and confirm a specified date at which the employee is expected to return to work.

17.2 Approval. Requests for leave will be evaluated on a case by case basis with the operational requirements of the City in mind. Subject to those requirements, approval will not be unreasonably withheld. Requests for leave to conduct Association business will be evaluated in a non-discriminatory fashion.

17.3 Termination of Leave. Notice that the employee has accepted employment or entered into full-time business or occupation may be accepted by the City as a resignation when the employment or business is inconsistent with the reason leave was requested and granted. Any employee who is granted a leave of absence without pay under this Section and who inexcusably fails to return to work immediately upon the expiration of said leave of absence, shall be considered as having resigned his/her position with the City.

17.4 Employee Status. Employees on leave without pay remain employees covered by this Agreement, entitled to its non-economic benefits such as access to the grievance procedure. Unless required by law or otherwise specified in this Agreement, employees on leave without pay shall not accrue any economic benefits, including seniority.

17.5 Bereavement Leave. In the event of a death in the immediate family or household, up to forty (40) hours of compensated leave per occurrence may be used by full-time employees in order to arrange for and attend the funeral. Part-time employees shall accrue bereavement leave on a pro-rata basis. Upon application and mutual agreement with the employee's supervisor, the employee may use accumulated leave (other than sick leave) after the forty (40) hours of compensated leave. Such request for additional leave shall not be unreasonably denied.

For the purpose of this Article, an employee's family shall mean: Spouse, parent or step-parent, children, step-children, brother, sister, mother-in-law, father-in-law, brother-in-law, sister-in-law, maternal grandparents, paternal grandparents, grandchildren, domestic partner as defined by law, or other family members living in the employee's household. For purposes of this section, a domestic partner's relationship will be considered to be the equivalent of a spouse's relationship.

Deviations from the definition of immediate family shall not be allowed; however, the City will consider other leave (other than sick leave) for employees who wish to take time off as a result of some other person who is significant to him/her.

17.6 Witness and/or Jury Duty. When a City employee is called for jury duty or is subpoenaed as a witness in a criminal matter, or in a civil matter arising from their City employment, he/she shall not suffer any loss of his/her regular City compensation he or she would have earned during such absence; however, he/she may be required to waive the jury/witness fee provided by the Court as required by law. Time not worked because of such duty shall not affect vacation or sick leave accruals.

17.7 Military. Military leave shall be granted to employees in accordance with Oregon Revised Statutes.

17.8 Inclement Weather.

In the event an employee is unable to make it to work because of inclement weather or the City offers to send employees home as a result of the same, the employee will have the option of using any accrued leave, except sick leave, or take leave without pay.

If an employee reports for work during inclement weather and the City decides to not have the employee work, the employee shall be compensated for a minimum of two (2) hours of work.

ARTICLE 18 – DISCIPLINE

18.1 Discipline and Discharge. No covered employee shall be disciplined or discharged except for just cause. Oral warnings, even if reduced to writing, are not considered to be discipline and may not be protested through the grievance procedure. Disciplinary actions include, but are not limited to: written reprimands, suspensions, demotions and discharge.

Informal discipline or corrective actions, such as counseling, specific directives, work improvement plans, oral warnings (even if reduced to writing) and other similar actions are not considered discipline and will not be placed in the personnel file as such. Corrective actions are not subject to the grievance process. They may be used for notice of progressive disiciplinary sanctions and are subject to review in yearly evaluations. Employees may provide written rebuttal within 10 days notice of the corrective action, to be placed with the corrective action.

18.2 Excluded Employee. Probationary employees (as defined in Section 9.1, Original Appointments), and less-than-half-time may be terminated or disciplined for any reason, and such action shall not constitute a violation of this contract, nor be subject to the grievance procedure.

18.3 Imposition. If a supervisor has reason to discipline an employee, he/she shall make a reasonable effort to impose such discipline in a manner that will not unduly embarrass the employee before other employees or the public.

18.4 Representation Rights. Upon request, an employee will be entitled to have a Associaton representative (as under Article 5.1) and/or Association Counsel, without unreasonable delay, present whenever the employee is being interviewed regarding a matter that could lead to a

disciplinary action against the employee. Employees subject to discipline, as defined in Section 18.1, will be provided 48 hours written notice of intent to interview the employee. The notice will include facts sufficient to identify the allegation of misconduct, notice of place and time of the interview, and the right to have Association representation or Counsel present. An employee's representation rights may only be invoked in accordance with the standards set forth by the Oregon Employment Relations Board. During any interview of this nature, either party may record the proceeding. If the meeting is recorded, the party making the recording will be obliged to provide a copy of the recording if requested by the other party. If a copy of the recording is requested, a reasonable fee may be imposed.

The supervisor is encouraged to advise an employee of his/her right to Association representation on a matter that might lead to discipline.

18.5 Due Process. Prior to imposition of an economic disciplinary sanction, the following procedural due process shall be followed:

a) Prior to imposition of an economic disciplinary sanction, the employee and Association shall be given 7 days advance written notice of opportunity for a rebuttal meeting. The notice will include: comprehensive findings of facts, including a summary of witness statements and identity, if relied upon; findings of violations or allegations of misconduct; and a summary of disciplinary sanctions being considered. In the event the employer relies on audio or video evidence, the employer will provide such with this notice.

b) The employer will not make final judgment on discipline until after the employee's rebuttal opportunity.

c) The employee will be given an opportunity to refute the charges or allegations either in writing or orally in an informal hearing prior to the implementation of any discipline.

d) The employee may be accompanied by an Association representative and/or Association Counsel, who may speak for the employee. The meeting is voluntary.

18.6 Just Cause Standards. For the purpose of this Agreement, just cause shall be determined based on the following questions:

a) Did the City give the employee forewarning or foreknowledge of the possible or probable disciplinary consequences of the employee's conduct?[1]

b) Was the City's rule or managerial order reasonably related to a) the orderly, efficient or safe operation of the City's business; and b) the performance the City might properly expect of the employee?

[1] The parties agree that there are some offenses that are so egregious that forewarning of consequences is not necessary.

c) Did the City, before administering discipline to an employee, make an effort to discover whether the employee did in fact violate or disobey a rule or order of management?

d) Was the City's investigation conducted fairly and objectively?

e) At the investigation, did the City obtain substantial and compelling evidence or proof that the employee was guilty as charged?

f) Has the City applied its rules, orders and penalties evenhandedly and without discrimination to all employees?

g) Was the degree of discipline administered by the City reasonably related to a) the seriousness of the employee's proven offense; and b) the record of the employee and his/her service with the City?

18.7 Notice of Discipline. When an employee is disciplined, the Association will be given notice of the action against the employee, unless the employee declines that such notice be given.

18.8 Discovery Materials. Upon imposition of discipline, the Association or employee may request a copy of the disciplinary investigation or related materials. The City may apply reasonable costs for copies or administrative time.

ARTICLE 19 – SETTLEMENT OF DISPUTES

19.1 Procedure. Any dispute concerning the application, interpretation or enforcement of this Agreement shall be resolved in the following manner and sequence:

Step 1: The employee, with or without an Association representative,[2] shall first take up the grievance with his/her immediate supervisor within ten (10) calendar days immediately following the date the employee had or should have had knowledge of the grievance. The supervisor will then issue a response within ten (10) calendar days immediately following the date the employee discussed the dispute with his/her immediate supervisor. If this informal attempt to resolve the dispute is unsuccessful, the affected employee(s) shall present the grievance in writing to their supervisor with a copy to Human Resources within ten (10) calendar days immediately following the date the response was received or communicated to the affected employee from the immediate supervisor. If a question exists as to whether or not the employee attempted to resolve the dispute informally, the supervisor will be given an opportunity to resolve the dispute prior to a meeting of the "Management Team".[3] At this and each subsequent step of the grievance procedure, the written grievance submitted by the Association shall include:

a) A statement of the grievance and the factual allegations upon which it is based;

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[2] An Assocation representative at the informal step is intended to provide support and clarification for the employee and normally will not present the grievance.

[3] The employee's "Management Team" may consist of all supervisors responsible for the employee's job performance, including the City Manager and/or his/her designee. The City's personnel officer will generally be present at this level also.

b) The section(s) of this contract alleged to have been violated;

c) The remedy sought; and

d) The name and signature of the individual(s) submitting the grievance, except in the case of a group grievance. In such case, an officer of the Association will sign.

Step 2: Within ten (10) calendar days of receipt of the grievance, the Management Team will meet with the grievant and a representative of the Association and/or Association Counsel if requested. In the event a meeting cannot be scheduled because of the unavailability of any necessary party, the parties shall then mutually agree to another date. In any event, the Association will be given at least twenty-four (24) hours notice of such meeting. Grievances filed by the City shall be initiated at this step and filed with the Association President.

The Management Team shall render a written decision within ten (10) calendar days following the herein-referenced meeting.

Step 3: Mediation. In the event no agreement is reached in Step 2 and within ten (10) days of the Management Team response in Step 2, either party may request mediation. Mediation shall be by mutual agreeement of the parties. The parties will agree to a mutually acceptable mediator or agree to use a mediator appointed by the ERB or other agreed provider. Costs for the mediator shall be shared. The mediation process will be accomplished within 60 days from notice of election to mediate. The parties must meet at least twice in the mediation process, unless otherwise agreed, and the parties agree to act in good faith to resolve the dispute. If the grievance remains unsettled after the 60 days, either party may move to Step 4, Binding Arbitration. Request for Arbitration by the moving party must be within the next 30 days or the grievance ends. The parties may mutually agree to extend the 60 days, but such must occur before the expiration of the initial 60 days.

Step 4: Binding Arbitration. If the grievance is not resolved in the step above and if the Association or City wishes to pursue the grievance further, the moving party shall submit the grievance to arbitration by written notice to the City Manager or Association within ten (10) calendar days following the previous step response due date or date received, whichever date is sooner.

Unless the parties mutually agree upon an arbitrator, the party requesting arbitration shall, within fourteen (14) calendar days of their notice to proceed to arbitration, submit a written request to the Oregon Employment Relations Board that it submit to the parties a list of the names of seven (7) Oregon arbitrators. Upon receipt of the list, the parties shall determine by the toss of a coin who will strike first, and the parties shall then continue to alternate strikes until only one (1) name remains and the remaining name shall be the arbitrator.

The arbitrator shall have no power to modify, add to or subtract from the terms of this Agreement and shall be confined to the interpretation and enforcement of this Agreement. The arbitrator's decision shall be in writing and shall be submitted to the parties within thirty (30)

calendar days following the close of the hearing. The arbitrator's decision shall be final and binding on the affected employee(s), the Association and the City.

Either party may request the arbitrator to issue subpoenas but, if issued, the cost of serving a subpoena shall be borne by the party requesting the subpoena. Each party shall be responsible for compensating its own witnesses and representatives during the arbitration hearing, except that employees who are subpoenaed for the hearing shall not suffer any time loss during the time it is necessary for them to testify. The loser shall pay arbitrator's fees and expenses, and the arbitrator, as part of the award, shall designate the losing party for such purpose.

19.2 Time Limits. All parties subject to these procedures shall be bound by the time limits contained herein. If the Association fails to advance the grievance to the next step in a timely fashion, the right to binding arbitration of the grievance shall be waived. If the City fails to respond in a step, the grievance will advance to the next step. Time limits may be extended by written agreement of the parties.

19.3 Discovery Materials. In the event the Association requests materials for review, such as for processing a grievance, the City may apply reasonable costs for copies or administrative time.

ARTICLE 20 – PERSONNEL RECORDS

20.1 Access. Each employee shall have the right to review and copy the contents of his/her own personnel file. The City may apply reasonable costs for copies or administrative time, unless the copies and administrative time are de minimus.

In addition to the Association's rights as the exclusive representative, at his/her option and upon presentation of a signed release, an employee may authorize a Association representative to review the contents of his/her file.

20.2 Disciplinary Records. Each employee shall be given a copy of all disciplinary materials placed in his/her file. An employee may include an explanatory statement for the personnel file in answer to any reprimand or other form of discipline if the employee chooses not to grieve such action.

20.3 File Purging. Written reprimands/warnings may be removed from an employee's file, at his/her request, after three (3) years so long as no other disciplinary action has occurred within the three (3) year time period. Any material, other than performance evaluations, directly associated with the items being purged, will also be removed from the file. Documents removed from the personnel file shall be placed in a confidential file maintained by the Human Resources Department. Such purged documents will not be used against an employee for the purpose of progressive discipline. Purged documents may be used in any civil or arbitration proceeding for the purpose of establishing consistency of disciplinary action, showing the employee is on notice of rule, impeachment, lack of discrimination, the existence of mitigating or extenuating circumstances and compliance with legal obligations. The Association will have equal access, upon request, to these files for the same purposes.

20.4 Signature Requirement. Before any material reflecting negatively on the employee is placed in the employee's file, the employee shall sign a receipt containing the following disclaimer:

"Employee's signature only acknowledges receipt of material. The employee's signature does not necessarily indicate agreement or disagreement."

This shall not apply to a termination notice if the employee refuses to sign the document.

ARTICLE 21 – STRIKES

21.1 Prohibition. The Association and its members, as individuals or as a group, will not initiate, cause, participate or join in any strike, work stoppage, or slowdown, or any other restrictions of work, at any location in the City during the term of this contract. Employees in the bargaining unit, while acting in the course of their employment, shall not honor any picket line established in the City by the Association or by any other labor organization when called upon to cross picket lines in the line of duty. Disciplinary action, including discharge, may be taken by the City against any employee or employees engaged in a violation of this Article.

21.2 Association Obligation. In the event of a strike, work stoppage, slowdown, picketing, observance of a picket line, or other restriction of work in any form, either on the basis of individual choice or collective employee conduct, the Association will immediately, upon notification, attempt to secure an immediate orderly return to work.

21.3 Lockout. There shall be no lockout of employees during the term of this Agreement.

ARTICLE 22 – SAVINGS CLAUSE

Should any portion of this contract be determined to be contrary to law or ruled in violation of law, the determination shall be deemed to apply only to that specific portion, and all other provisions of this Agreement shall remain in full force and effect for the duration of this Agreement. Upon such determination, the parties agree to negotiate regarding the invalidated portion under the mid-term bargaining provisions of ORS 243.698. Negotiations shall commence within thirty (30) days.

ARTICLE 23 – STATUS OF AGREEMENT

23.1 Complete Agreement. This Agreement incorporates the sole and complete agreement between the City and the Association resulting from these negotiations.

23.2 Amendments. This Agreement may be amended at any time by mutual Agreement of the Association and the City.

In the event the City wishes to implement or change any condition of employment that is a mandatory subject of bargaining which was not discussed in the negotiations that created the current Agreement, the City shall inform the Association of the condition it wishes to implement

or change. The Association will have fourteen (14) days to make a demand to bargain. If the Association makes a timely demand to bargain under PECBA, the City shall enter into the mid - term bargaining provisions of ORS 243.698. If the Association does not demand to bargain, the City may implement or change the condition it has proposed. The Association waives any right to bargain matters it raised during negotiations but which were not embodied in the Agreement.

ARTICLE 24 – TERM OF AGREEMENT

This Agreement shall be effective upon execution and shall remain in full force and effect to June 30, 2015. This agreement shall be automatically renewed from year to year thereafter, unless either party shall notify the other in writing no later than January 1 of the expiring year that it desires to bargain a successor agreement. In the event notice to bargain a successor agreement is provided, negotiations will be initiated within 30 days or as mutually agreed.

This Agreement is hereby executed on this _____ day of _____, 2012, by:

The City of Wilsonville	WilMEA
_____	_____
Bryan Cosgrove date	Javier Amaya date
City Manager	Association Executive Board

APPENDIX A

Effective October 1, 2012
0.5% COLA

Range	Position	Monthly Low	Monthly High	Hourly Low	Hourly High
1		$ 1,603	$ 2,044	$ 9.25	$ 11.79
2		$ 1,643	$ 2,095	$ 9.48	$ 12.09
3		$ 1,684	$ 2,148	$ 9.72	$ 12.39
4		$ 1,728	$ 2,202	$ 9.97	$ 12.70
5		$ 1,771	$ 2,256	$ 10.22	$ 13.02
6	Library Aide	$ 1,815	$ 2,313	$ 10.47	$ 13.34
7		$ 1,860	$ 2,371	$ 10.73	$ 13.68
8		$ 1,906	$ 2,430	$ 11.00	$ 14.02
9		$ 1,954	$ 2,490	$ 11.27	$ 14.37
10		$ 2,003	$ 2,554	$ 11.56	$ 14.73
11		$ 2,053	$ 2,617	$ 11.84	$ 15.10
12		$ 2,104	$ 2,682	$ 12.14	$ 15.47
13	Nutrition Program Assistant	$ 2,156	$ 2,749	$ 12.44	$ 15.86
14		$ 2,210	$ 2,818	$ 12.75	$ 16.26
15		$ 2,265	$ 2,888	$ 13.07	$ 16.66
16		$ 2,323	$ 2,961	$ 13.40	$ 17.08
17	Library Clerk I	$ 2,381	$ 3,035	$ 13.74	$ 17.51
18		$ 2,440	$ 3,110	$ 14.08	$ 17.94
19		$ 2,500	$ 3,188	$ 14.42	$ 18.39
20	Library Clerk II *Sewer Vactor Operator I*	$ 2,563	$ 3,268	$ 14.79	$ 18.85
21		$ 2,628	$ 3,351	$ 15.16	$ 19.33
22	*CD Permit Clerk/Receptionist* Library Volunteer Coordinator	$ 2,693	$ 3,434	$ 15.54	$ 19.81
23		$ 2,761	$ 3,520	$ 15.93	$ 20.31
24	Library Clerk III Nutrition Coordinator I	$ 2,830	$ 3,608	$ 16.33	$ 20.82
25	Utility Worker	$ 2,900	$ 3,697	$ 16.73	$ 21.33
26	Administrative Assistant I	$ 2,972	$ 3,790	$ 17.15	$ 21.87
27	Nutrition Coordinator II	$ 3,046	$ 3,884	$ 17.57	$ 22.41
28		$ 3,124	$ 3,982	$ 18.02	$ 22.97
29		$ 3,201	$ 4,081	$ 18.47	$ 23.54
30	Accounting Technician Administrative Assistant II *Information Systems Assistant I*	$ 3,281	$ 4,183	$ 18.93	$ 24.13
31	Senior Utility Worker	$ 3,364	$ 4,287	$ 19.41	$ 24.73

Range	Position	Monthly Low	Monthly High	Hourly Low	Hourly High
32	Administrative Assistant III Fitness Specialist Information & Referral Specialist Municipal Court Clerk Utility Billing Specialist	$ 3,447	$ 4,396	$ 19.89	$ 25.36
33		$ 3,533	$ 4,505	$ 20.38	$ 25.99
34	Assistant Planner *Environmental Education Specialist* GIS & Mapping Technician Permit Technician Program Coordinator Project Coordinator Recreation Coordinator Reference Librarian Sewer Vactor Operator II	$ 3,622	$ 4,617	$ 20.90	$ 26.64
35		$ 3,712	$ 4,733	$ 21.42	$ 27.31
36	Water Distribution Technician	$ 3,805	$ 4,850	$ 21.95	$ 27.98
37	*Accountant* *Public Works Analyst* Real Property Specialist	$ 3,899	$ 4,973	$ 22.49	$ 28.69
38	Information Systems Assistant III Public Works Operations Chief Storm Water Management Coordinator	$ 3,998	$ 5,096	$ 23.07	$ 29.40
39	*Building Inspector I* Industrial Pre-treatment Coordinator	$ 4,097	$ 5,224	$ 23.64	$ 30.14
40	Adult Services Librarian Senior Accountant Senior Engineering Technician Youth Services Librarian	$ 4,199	$ 5,356	$ 24.23	$ 30.90
41		$ 4,304	$ 5,489	$ 24.83	$ 31.67
42	Associate Planner Building / Plumbing Inspector II Engineering Associate *Information Systems Analyst*	$ 4,412	$ 5,626	$ 25.45	$ 32.46
43		$ 4,523	$ 5,767	$ 26.09	$ 33.27
44		$ 4,635	$ 5,910	$ 26.74	$ 34.10
45		$ 4,753	$ 6,058	$ 27.42	$ 34.95
46	Network Administrator Plans Examiner	$ 4,870	$ 6,210	$ 28.10	$ 35.83

Italic not filled

Effective July 1, 2013
1.75% COLA

Range	Position	Monthly Low	Monthly High	Hourly Low	Hourly High
1		$ 1,631	$ 2,080	$ 9.41	$ 12.00
2		$ 1,672	$ 2,132	$ 9.65	$ 12.30
3		$ 1,713	$ 2,186	$ 9.88	$ 12.61
4		$ 1,758	$ 2,241	$ 10.14	$ 12.93
5		$ 1,802	$ 2,296	$ 10.40	$ 13.25
6	Library Aide	$ 1,847	$ 2,353	$ 10.66	$ 13.58
7		$ 1,893	$ 2,412	$ 10.92	$ 13.92
8		$ 1,940	$ 2,473	$ 11.19	$ 14.27
9		$ 1,988	$ 2,534	$ 11.47	$ 14.62
10		$ 2,038	$ 2,599	$ 11.76	$ 14.99
11		$ 2,089	$ 2,663	$ 12.05	$ 15.36
12		$ 2,141	$ 2,729	$ 12.35	$ 15.74
13	Nutrition Program Assistant	$ 2,194	$ 2,797	$ 12.66	$ 16.14
14		$ 2,249	$ 2,867	$ 12.98	$ 16.54
15		$ 2,305	$ 2,939	$ 13.30	$ 16.96
16		$ 2,364	$ 3,013	$ 13.64	$ 17.38
17	Library Clerk I	$ 2,423	$ 3,088	$ 13.98	$ 17.82
18		$ 2,483	$ 3,164	$ 14.33	$ 18.25
19		$ 2,544	$ 3,244	$ 14.68	$ 18.72
20	Library Clerk II *Sewer Vactor Operator I*	$ 2,608	$ 3,325	$ 15.05	$ 19.18
21		$ 2,674	$ 3,410	$ 15.43	$ 19.67
22	*CD Permit Clerk/Receptionist* Library Volunteer Coordinator	$ 2,740	$ 3,494	$ 15.81	$ 20.16
23		$ 2,809	$ 3,582	$ 16.21	$ 20.67
24	Library Clerk III Nutrition Coordinator I	$ 2,880	$ 3,671	$ 16.62	$ 21.18
25	Utility Worker	$ 2,951	$ 3,762	$ 17.03	$ 21.70
26	Administrative Assistant I	$ 3,024	$ 3,856	$ 17.45	$ 22.25
27	Nutrition Coordinator II	$ 3,099	$ 3,952	$ 17.88	$ 22.80
28		$ 3,179	$ 4,052	$ 18.34	$ 23.38
29		$ 3,257	$ 4,152	$ 18.79	$ 23.95
30	Accounting Technician Administrative Assistant II *Information Systems Assistant I*	$ 3,338	$ 4,256	$ 19.26	$ 24.55
31	Senior Utility Worker	$ 3,423	$ 4,362	$ 19.75	$ 25.17

Range	Position	Monthly Low	Monthly High	Hourly Low	Hourly High
32	Administrative Assistant III Fitness Specialist Information & Referral Specialist Municipal Court Clerk Utility Billing Specialist	$ 3,507	$ 4,473	$ 20.23	$ 25.81
33		$ 3,595	$ 4,584	$ 20.74	$ 26.45
34	Assistant Planner *Environmental Education Specialist* GIS & Mapping Technician Permit Technician Program Coordinator Project Coordinator Recreation Coordinator Reference Librarian Sewer Vactor Operator II	$ 3,685	$ 4,698	$ 21.26	$ 27.10
35		$ 3,777	$ 4,816	$ 21.79	$ 27.78
36	Water Distribution Technician	$ 3,872	$ 4,935	$ 22.34	$ 28.47
37	*Accountant* *Public Works Analyst* Real Property Specialist	$ 3,967	$ 5,060	$ 22.89	$ 29.19
38	Information Systems Assistant III Public Works Operations Chief Storm Water Management Coordinator	$ 4,068	$ 5,185	$ 23.47	$ 29.91
39	*Building Inspector I* Industrial Pre-treatment Coordinator	$ 4,169	$ 5,315	$ 24.05	$ 30.66
40	Adult Services Librarian Senior Accountant Senior Engineering Technician Youth Services Librarian	$ 4,272	$ 5,450	$ 24.65	$ 31.44
41		$ 4,379	$ 5,585	$ 25.26	$ 32.22
42	Associate Planner Building / Plumbing Inspector II Engineering Associate *Information Systems Analyst*	$ 4,489	$ 5,724	$ 25.90	$ 33.02
43		$ 4,602	$ 5,868	$ 26.55	$ 33.85
44		$ 4,716	$ 6,013	$ 27.21	$ 34.69
45		$ 4,836	$ 6,164	$ 27.90	$ 35.56
46	Network Administrator Plans Examiner	$ 4,955	$ 6,319	$ 28.59	$ 36.46

Italic not filled

Effective July 1, 2014
2.5% COLA

Range	Position	Monthly Low	Monthly High	Hourly Low	Hourly High
1		$ 1,672	$ 2,132	$ 9.65	$ 12.30
2		$ 1,714	$ 2,185	$ 9.89	$ 12.61
3		$ 1,756	$ 2,241	$ 10.13	$ 12.93
4		$ 1,802	$ 2,297	$ 10.40	$ 13.25
5		$ 1,847	$ 2,354	$ 10.66	$ 13.58
6	Library Aide	$ 1,893	$ 2,412	$ 10.92	$ 13.92
7		$ 1,940	$ 2,472	$ 11.19	$ 14.26
8		$ 1,989	$ 2,535	$ 11.48	$ 14.63
9		$ 2,038	$ 2,598	$ 11.76	$ 14.99
10		$ 2,089	$ 2,664	$ 12.05	$ 15.37
11		$ 2,141	$ 2,730	$ 12.35	$ 15.75
12		$ 2,195	$ 2,797	$ 12.66	$ 16.14
13	Nutrition Program Assistant	$ 2,249	$ 2,867	$ 12.98	$ 16.54
14		$ 2,305	$ 2,939	$ 13.30	$ 16.96
15		$ 2,363	$ 3,012	$ 13.63	$ 17.38
16		$ 2,423	$ 3,088	$ 13.98	$ 17.82
17	Library Clerk I	$ 2,484	$ 3,165	$ 14.33	$ 18.26
18		$ 2,545	$ 3,243	$ 14.68	$ 18.71
19		$ 2,608	$ 3,325	$ 15.05	$ 19.18
20	Library Clerk II *Sewer Vactor Operator I*	$ 2,673	$ 3,408	$ 15.42	$ 19.66
21		$ 2,741	$ 3,495	$ 15.81	$ 20.16
22	*CD Permit Clerk/Receptionist* Library Volunteer Coordinator	$ 2,809	$ 3,581	$ 16.21	$ 20.66
23		$ 2,879	$ 3,672	$ 16.61	$ 21.18
24	Library Clerk III Nutrition Coordinator I	$ 2,952	$ 3,763	$ 17.03	$ 21.71
25	Utility Worker	$ 3,025	$ 3,856	$ 17.45	$ 22.25
26	Administrative Assistant I	$ 3,100	$ 3,952	$ 17.88	$ 22.80
27	Nutrition Coordinator II	$ 3,176	$ 4,051	$ 18.32	$ 23.37
28		$ 3,258	$ 4,153	$ 18.80	$ 23.96
29		$ 3,338	$ 4,256	$ 19.26	$ 24.55
30	Accounting Technician Administrative Assistant II *Information Systems Assistant I*	$ 3,421	$ 4,362	$ 19.74	$ 25.17
31	Senior Utility Worker	$ 3,509	$ 4,471	$ 20.24	$ 25.79

Range	Position	Monthly Low	Monthly High	Hourly Low	Hourly High
32	Administrative Assistant III Fitness Specialist Information & Referral Specialist Municipal Court Clerk Utility Billing Specialist	$ 3,595	$ 4,585	$ 20.74	$ 26.45
33		$ 3,685	$ 4,699	$ 21.26	$ 27.11
34	Assistant Planner *Environmental Education Specialist* GIS & Mapping Technician Permit Technician Program Coordinator Project Coordinator Recreation Coordinator Reference Librarian Sewer Vactor Operator II	$ 3,777	$ 4,815	$ 21.79	$ 27.78
35		$ 3,871	$ 4,936	$ 22.33	$ 28.48
36	Water Distribution Technician	$ 3,969	$ 5,058	$ 22.90	$ 29.18
37	*Accountant* *Public Works Analyst* Real Property Specialist	$ 4,067	$ 5,187	$ 23.46	$ 29.93
38	Information Systems Assistant III Public Works Operations Chief Storm Water Management Coordinator	$ 4,170	$ 5,315	$ 24.06	$ 30.66
39	*Building Inspector I* Industrial Pre-treatment Coordinator	$ 4,273	$ 5,448	$ 24.65	$ 31.43
40	Adult Services Librarian Senior Accountant Senior Engineering Technician Youth Services Librarian	$ 4,379	$ 5,586	$ 25.26	$ 32.23
41		$ 4,488	$ 5,725	$ 25.89	$ 33.03
42	Associate Planner Building / Plumbing Inspector II Engineering Associate *Information Systems Analyst*	$ 4,601	$ 5,867	$ 26.54	$ 33.85
43		$ 4,717	$ 6,015	$ 27.21	$ 34.70
44		$ 4,834	$ 6,163	$ 27.89	$ 35.56
45		$ 4,957	$ 6,318	$ 28.60	$ 36.45
46	Network Administrator Plans Examiner	$ 5,079	$ 6,477	$ 29.30	$ 37.37

Italic not filled

King, Sandy

From: Cosgrove, Bryan
Sent: Thursday, September 06, 2012 4:03 PM
To: ptown.popo@gmail.com
Cc: King, Sandy; celianunez01@gmail.com; Mayor Tim Knapp; richardgoddard2010@gmail.com; scottstarr97070@gmail.com
Subject: FW: City council mtg, resolution regarding collective bargaining

Jon,

Thank you for submitting your questions. I see that you copied Councilor Goddard and Councilor Starr so I will copy the entire Council on my response, and make sure that your questions are brought forward to Council at tonight's meeting.

The Budget Committee's role in fiscal policy for the City are outlined as follows (from the Local Budget Law Handbook provided by the State of Oregon):

Fiscal Powers of the Budget Committee

The budget committee, as a whole or through majority action, has the power to:
1. Specify the amount of tax revenue or tax rate for all funds.
2. Establish a maximum for total expenditures for each fund. This maximum is subject to any revision which the governing body is authorized to make after the budget hearing.
3. Approve the total taxes for each fund as an amount and/or rate.
4. Approve the budget.

When the budget committee has approved the budget, it is turned over to the governing body and enters into the adoption stage of the budget process

The City Council sets compensation policies for its employees by ratifying collective bargaining agreements, and adopting policies related to employee compensation. While the City of Wilsonville does not currently have an adopted, formal compensation strategy or policies for its employees, generally speaking the City seeks to stay near the median for our comparator cities to remain competitive in the regional labor market and to attract and retain quality employees. We have two bargaining units in the City of Wilsonville. One Association that covers general service employees (strike permitted) and one Union that represents our Transit employees (strike prohibited, mandatory arbitration). I have spoken to some on Council about the need for a formal policy regarding classification and compensation, and I believe there is support to move in that direction once the new Council is sworn in after the New Year.

Citizens can have an impact on all matters related to the city by making their views known to the their elected representatives. This can be done during public comment during the budget process if you desire to address the issue of employee compensation as it relates to the city's budget, or at any time throughout the course of the year. Council meets on the first and third Monday of each month at 7:00 PM, and there is always an opportunity to provide direct citizen feedback to your elected officials during public comment. I hope this was helpful, and I'm happy to clarify or add additional comments if you need more information.

Regards,

Bryan Cosgrove,
City Manager

503.570.1504 (work)
cosgrove@ci.wilsonville.or.us
29799 SW Town Center Loop
Wilsonville, Oregon 97070

The only disability in life is a bad attitude.
-- Scott Hamilton

From: King, Sandy
Sent: Thursday, September 06, 2012 3:21 PM
To: Cosgrove, Bryan; Troha, Jeanna; Jacobson, Barbara
Subject: FW: City council mtg, resolution regarding collective bargaining

FYI

Sandra C. King, MMC
City Recorder
City of Wilsonville
503-570-1506

From: Jon Yochim [mailto:ptown.popo@gmail.com]
Sent: Thursday, September 06, 2012 3:15 PM
To: King, Sandy
Cc: scottstarr97070@gmail.com; richardgoddard2010@gmail.com
Subject: City council mtg, resolution regarding collective bargaining

I have two questions-

If tax payers get to way in on public expenses, shouldn't the budget committee obtain citizen input for employee wage packages, such as the collective bargaining?

How can citizens have input on these negotiations?

Please submit to Council for discussion.

Jon Yochim
mobile: 503.702.1548

King, Sandy

From: King, Sandy
Sent: Thursday, September 06, 2012 3:23 PM
To: Mayor Tim Knapp; Celia Nunez (celianunez01@gmail.com); Richard Goddard; Scott Starr
Subject: FW: City council mtg, resolution regarding collective bargaining

I received these comments from Mr. Jon Jochim for this evening.

Sandra C. King, MMC
City Recorder
City of Wilsonville
503-570-1506

From: Jon Yochim [mailto:ptown.popo@gmail.com]
Sent: Thursday, September 06, 2012 3:15 PM
To: King, Sandy
Cc: scottstarr97070@gmail.com; richardgoddard2010@gmail.com
Subject: City council mtg, resolution regarding collective bargaining

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Jon Yochim
mobile: 503.702.1548

City of
WILSONVILLE
in OREGON

CITY COUNCIL MEETING
STAFF REPORT

Meeting Date: September 06, 2012	Subject: Water System Master Plan Ordinance No. 707 Staff Member: Eric Mende, Deputy City Engineer Department: Engineering
Action Required	**Advisory Board/Commission Recommendation**
☐ Motion ☐ Public Hearing Date: 08/20/12 ☒ Ordinance 1st Reading Date: 08/20/12 ☒ Ordinance 2nd Reading Date: 09/06/12 ☐ Resolution ☐ Information or Direction ☐ Information Only ☐ Council Direction ☐ Consent Agenda	☒ Approval ☐ Denial ☐ None Forwarded ☐ Not Applicable **Comments:** On July 11, 2012 the Planning Commission conducted a public hearing on the WSMP. Following public testimony and deliberation, the Planning Commission forwarded a recommendation for Approval to the City Council. On August 20th, 2012, City Council approved the Master Plan and Ordinance 707 on 1st Reading.
Staff Recommendation: Approval of an update to the Water System Master Plan and accompanying Ordinance on 2nd Reading.	
Recommended Language for Motion: Move to Approve Ordinance 707 on second reading, adopting the July 2012 City of Wilsonville Water System Master Plan.	
PROJECT / ISSUE RELATES TO: ***[Identify which goal(s), master plans(s) issue relates to.]***	

☒Council Goals/Priorities CC Goal B: Ensure efficient, cost effective and sustainable development and infrastructure	☒Adopted Master Plan(s) Water System Master Plan	☐Not Applicable

ISSUE BEFORE COUNCIL:
Action is requested to approve, via Ordinance, the 2012 Water System Master Plan. This document replaces the existing 2002 Water System Master Plan, which was developed prior to completion of the Willamette River Water Treatment Plant, and is out of date. This revised Master Plan provides a 20 year planning document including estimated costs and timing for maintenance, upgrades, and growth related capital improvements to the City of Wilsonville Water Distribution System, which currently comprises approximately 107 miles of pipes, 4 storage reservoirs (tanks), 2 pump stations, 8 wells, over 1000 fire hydrants, over 5000 water meters, plus various other components.

EXECUTIVE SUMMARY:
As presented at Public Hearing on August 20, 2012 the City water system is in very good shape. The Master Plan identifies and prioritizes improvements to address current and future system deficiencies – most of which are "calculated" deficiencies (such as "emergency storage" requirements) based on conservative planning criteria. Tables are provided listing estimated costs for various program elements including Operations and Maintenance, Major Repairs, and growth related Capital Improvements.

Two key recommendations are included in the Plan to address long term deficiencies. The first recommendation is to refurbish the City's existing groundwater wells and maintain them as a backup emergency supply source. The money spent on refurbishment of the wells is significantly less than the cost of the corresponding storage tanks, and is the most economical choice to protect against future emergencies.

Secondly, a new pipeline is proposed to the Charbonneau District, bored under the river from the main part of the City. The pipeline alternative has a better benefit / cost ratio than a new storage tank as well as a lower risk of damage during an earthquake, and is therefore the recommended alternative to achieve fire protection redundancy for the District. (See Table 3.4, page 3-7)

EXPECTED RESULTS:
The Water System Master Plan (and Appendices) are designed to be key reference documents for City Staff, Businesses, Developers, Citizens, and City Council. The Master Plan provides detailed information on the current status of the City's water system and provides planning guidance concerning the resources and infrastructure needed to ensure the City water system remains viable for the long term. The Master Plan will be the basis for prioritizing future Capital Improvements and will drive the future rate profile.

TIMELINE:
City Council Public Hearing was held on August 20, 2012 resulting in Approval on first reading.

In the motion for approval on first reading, Council also approved a change to Comprehensive Plan Goal 3.1 to include the words "adequate but not excessive capacity", and directed staff to provide a response to comments by Mr. Stanley Wallulis, made at Public Hearing and distributed to Council, and to allow Mr. Wallulis opportunity to respond to staff's responses. These action items have been completed and are included in the packet.

Necessary follow-on work associated with this Master Plan include a Rate Study, and completion of an Update of the Water Treatment Plant Master Plan, both of which are intended to completed within the next 18 months.

CURRENT YEAR BUDGET IMPACTS:
A Fiscal Year 2012/2013 budget of $40,000 was identified for completion of this Master Plan and a follow on Rate Study. The budget is adequate and no changes are proposed.

FINANCIAL REVIEW / COMMENTS:
Reviewed by: JEO_____ Date: 8/23/12_____
The 2012/13 budget appears to be sufficient for completion of the Water System Master Plan and the rate study. Funding options for projects within the Master Plan will be analyzed in conjunction with the rate study.

LEGAL REVIEW / COMMENT:
Reviewed by: MEK _____ Date: 8/24/12_____
The Water Master Plan meets the requirements of a Facilities Plan implementing the City's Comprehensive Plan under the state land use laws and it meets requirements under state water laws for developing a municipal water master plan. It also meets the requirements necessary to support the subsequent establishment of water system development charges and water rate utility fees as the Council may determine is necessary in the future.

COMMUNITY INVOLVEMENT PROCESS:
Details of the Community Involvement process for the Water System Master Plan were included in the August 20, 2012 Council Packet.

One individual, Mr. Stanley Wallulis, provided testimony at the City Council Public Hearing, and distributed to Council a list of concerns and comments.

No changes were made to the document based on testimony at City Council; however, City Council did direct staff to address Mr. Wallulis's written comments, as mentioned in the TIMELINE section above.

POTENTIAL IMPACTS or BENEFIT TO THE COMMUNITY
A reliable, cost effective, and well planned water system protects the general health, welfare, and safety of the public and identifies the infrastructure needed to serve the needs of Wilsonville's existing water system as well as future growth.

ALTERNATIVES:

n/a

CITY MANAGER COMMENT:

ATTACHMENTS

A. Ordinance 707
B. Stanley Wallulis written comments to Council dated August 20, 2012
C. Staff response to comments dated August 22, 2012
D. Stanley Wallulis response to staff response dated XXXXXXX

ORDINANCE NO. 707

AN ORDINANCE OF THE CITY OF WILSONVILLE ADOPTING AN UPDATED WATER SYSTEM MASTER PLAN AS A SUB-ELEMENT OF THE CITY'S COMPREHENSIVE PLAN; ADOPTING A CAPITAL IMPROVEMENT PROJECT LIST FOR WATER SUPPLY, STORAGE AND DISTRIBUTION; AND REPLACING ALL PRIOR WATER SYSTEM MASTER PLANS

WHEREAS, the City currently has a Water System Master Plan that was adopted by City Council (Ordinance No. 531) on January 7, 2002; and

WHEREAS, ORS 197.175 requires cities to prepare, adopt, and implement Comprehensive Plans consistent with statewide planning goals adopted by the Land Conservation and Development Commission; and

WHEREAS, ORS 197.712 (2)(e) requires cities to develop and adopt a public facilities plan for areas within the Urban Growth Boundary containing a population greater than 2,500 persons, including rough cost estimates for projects needed to provide sewer, water and transportation uses contemplated in the Comprehensive Plan and Land Use Regulations; and

WHEREAS, an updated Water System Master Plan is needed to account for growth and plan for future development; and

WHERAS, the update to the Water System Master Plan documents current water demand, evaluates current system deficiencies, estimates future water demands over a 20-year growth horizon, and estimates the capital and operation costs needed to meet these future demands; and

WHEREAS, in developing the new Water System Master Plan, the City has sought to carry out federal, state and regional mandates, provide for alternative improvement solutions to minimize public and private expense, avoid the creation of nuisances and maintain the public's health, safety, welfare and interests; and

WHEREAS, proposed amendments to the Water System Master Plan identifies changes to Comprehensive Plan Goal 3.1; and

WHEREAS, Keller Associates, the project consultant, and City staff conducted work sessions with the Planning Commission and City Council and held a public open house on the Water System Master Plan to solicit citizen input addressing Statewide Planning Goal #1 – Citizen Involvement; and

WHEREAS, following the timely mailing and publication of the required Ballot Measure 56 notice, the Wilsonville Planning Commission conducted a public hearing on July 11, 2012 and adopted Resolution Number LP12-0002 recommending the City Council adopt the Water System Master Plan; and

WHEREAS, after providing due public notice, as required by City Code and State Law, a public hearing was held before the City Council on August 20, 2012, at which time the City Council considered the recommendation of the Planning Commission, gathered additional evidence and afforded all interested parties an opportunity to present oral and written testimony concerning the Water System Master Plan; and

WHEREAS, the City Council has carefully considered the public record, including all recommendations and testimony, and being fully advised.

NOW, THEREFORE, THE CITY OF WILSONVILLE ORDAINS AS FOLLOWS:

1. FINDINGS.

   The above-recited findings are adopted and incorporated by reference herein, including the findings and conclusions of Resolution No. LP12-0002, which includes the staff report. The City Council further finds and concludes that the adoption of the updated Water System Master Plan is necessary to help protect the public health, safety and welfare of the municipality by planning that will help to ensure there will continue to be adequate capacity and quality of water within the City's municipal system.

2. DETERMINATION.

   Based upon such findings, the City Council hereby adopts the Water System Master Plan, attached hereto and marked as Exhibit A, and incorporated by reference as if fully se forth herein, which shall replace and supersede all prior Water System Master Plans adopted by Ordinance, resolution or motion.

3. EFFECTIVE DATE OF ORDINANCE.

   This Ordinance shall be declared to be in full force and effect thirty (30) days from the date of final passage and approval.

SUBMITTED to the Wilsonville City Council and read the first time at a regular meeting thereof on the 20th day of August, 2012, and scheduled for second reading at a regular meeting thereof on the 6th day of September, 2012, commencing at the hour of 7.P.M. at Wilsonville City Hall.

_____
Sandra C. King, MMC, City Recorder

ENACTED by the City Council on the ____ day of September 2012, by the following votes:

YEAS:_____ NAYS:_____

_____
Sandra C. King, MMC, City Recorder

DATED and signed by the Mayor this ___ day of _____ 2012.

_____
Tim Knapp, Mayor

SUMMARY OF VOTES:
Mayor Knapp
Council President Nunez
Councilor Goddard
Councilor Starr

EXECUTIVE SUMMARY FOR THE WILSONVILLE CITY COUNCIL

By: Stanley Wallulis, P.E. **Phone: 503-694-1309** **August 20, 2012**

Quotes from the final draft of the Water Master Plan update & other City data in red Print.

"In summary, the Charbonneau District has adequate well supply, storage, and booster pumping to meet existing and future needs." Appendix F pg 9 (11)
Charbonneau has 10 ponds and swimming pools that can provide water for fire protection.

"If rehabilitation efforts at the wells restore the wells to previous levels, then it is possible that the future storage could be eliminated." Appendix B, TN 3-4 (23)
This option is low cost alternate and avoids having stagnant water that needs re-chlorination.

From data in the Plan and using 1 day's average annual demand (industry standard or less when other major sources are available) plus using of only 6 of the city's well in their present condition we have adequate sources (add Tualatin intertie) and storage to meet all the water demands in the year 2030 with over a 1.5 million gallon surplus.

WELLS vs RIVER SUPPLY

	WELLS	RIVER
Treatment Requirements	None	Floc, sed, filt, Clor, store
Vulnerability, river spills, industrial, etc.	High	None
Secure from terrorists	Moderate	Secure
Require Transmission Lines	Yes	No
Storage Facilities Required	Yes	No
Annual Treatment Costs 2012-13*	**$2,739,057**	**Zero**

2009-10 was $1,714,733 = +59.74% increase
Water Production in 2009 = 3.07 MGD & 2010 = 2.82 MGD

SURFACE STORAGE FACILITIES

New 3.0 MG reservoir at Tooze & Baker road: Cost **$ 5,840,000** (already budgeted)
2nd planned reservoir at above site in 5-6 years in text only: Est. $ 4,000,000 (no info given)
Cost of new 48" Transmission line convey water to above: Cost **$ 3,960,000** (already in design)

Grossly oversized storage results in **stagnant water:** Plan mentions this twice in the Plan.[1]
Grossly oversized storage results in chlorine loss: Plan adds in system chlorination by injection of chlorine & continuous monitoring at an additional cost of **$47,000** plus ongoing maintenance.[2]

[1] Chapter 3, pg. 7 & Chapter 6, pg. 4
[2] Appendix E, pg. 17, Table 5

	Construction Material	Painting Maintenance	Scheduled to be Abandoned
Reservoirs: Elligesen's 2 + C Level	**Steel**	**$1,145,000**	No
Charbonneau's Tank (reservoir)	**Concrete**	**$0**	**Yes**

(over)

	COST
Abandon Charbonneau & Tank, dress up site for other use, e.g. park, utility, etc.	$523,000
Cost to replace Charbonneau Reservoir's water at another site across the River.	$1,236,667
Total Cost:	$1,759,667

One day's average annual demand day for storage is the recommended minimum amount by the AWWA, and the Ten States Standards. This amount may be lowered if there are second and third back-up sources such as Wilsonville abundantly has, with 8 wells and the Tualatin intertie.

The Plan citing Tigard and Sherwood as an examples for our using a 2 day annual daily storage requirement is a very poor choice. Their use of a 2 day period is justifiable because the Bull Run source is supply for Tigard and continues to be an alternate source for Sherwood. A 2 day period for these two cities is justified based on Bull Run's history of bad samples from open reservoirs (e.g. recent boil water order to 135,000 households) and muddy turbidity from mud slides.

Chapter 2, pg. 12, states about a 5% loss "attainable technical low limit of leakage."
Tigard with its low unaccounted for water loss of 4.5% should have been cited against our sudden water losses rising from 5.9% to 17.5% in 4 years, instead of other cities over 17.5%. Also some other cities with reasonable losses are: Pendleton 4.49%, Sisters 5.0%, Tigard 4.5%. Eliminating 12.5% of our present water losses would generate approximately $1,650,000 in revenue for the Water and Wastewater (tied to water) annually, or decrease the system demand and required infra-structure.

Charbonneau's 10" transmission line on Boone Bridge, updated for earthquakes.
"Given the potential for the Charbonneau District to become isolated from the remainder of the system due to an earthquake, it was felt that the two Charbonneau wells should be maintained as a critical backup supply source for areas south of the Willamette River." Exec. Summary Pg.7 ES 2.4
Proposes: New 16" water line bored along Rose Lane under the Willamette River to Charbonneau across the river, a major geological fault:
Chart priority #1 improvement. Appendix E pg 7
Mr. Bledsoe on the 10" water line to Charbonneau: "He confirmed that burrowing a pipeline beneath the river would be more reliable than hanging the pipeline from the I-5 Bridge, since the pipeline would not be subject to issues regarding the bridge itself." Planning Commission Minutes: Page 5 of 16 (210) & 12 of 16.
Mr. Mende: "He clarified that an 18-in line was installed across the wetlands along the Montebello alignment. An additional 18-in line was planned to follow the Barber St alignment that would hang from the bottom of the bridge and connect directly to the 18-in Barber Street line, which goes out to Graham's Ferry and then north."
Where is the logic, a lot more rigid 18" water line hanging on the City's bridge safer, than a more flexible 10" water line on the recently designed and modified I-5 bridge to withstand earthquakes?

RECOMMENDATIONS:

1. **Preserve Charbonneau's ability to provide water to all its users with the existing facilities and possibly adding simple solutions for better access to the supply from 10 ponds and swimming pools.**
2. **Retain the services of an independent consulting Engineer to verify my claims. Requires only 4 pages of data to do it. Please invest in a few $1,000 to save approximately $18,000,000.**

OTHER ISSUES ARE OF SOME CONCERN, BUT TIME CONSTRAINTS DO NOT PERMIT PURSUING THEM NOW.

MEMORANDUM

08/22/12

TO: Wilsonville City Council
FROM: Eric Mende, Deputy City Engineer
RE: Response to comments submitted by Mr. Stanley Wallulis (attached) at City Council Public Hearing of August 20th, 2012 pertaining to Water System Master Plan

Wallulis Statement: "Charbonneau has 10 ponds and swimming pools that can be used for fire protection." (Page 1)
Response: This comment is in general support of Mr. Wallulis's opinion that no additional water storage facilities are needed by the City, and in opposition to the proposed secondary pipeline under the Willamette River. City Staff do not agree that swimming pools and ponds are adequate substitutes for hydrant delivered fire flows. Karen Mohling, Deputy Fire Marshall for Tualatin Valley Fire and Rescue concurs. (See attached letter from Karen Mohling)

Wallulis Statement: "From data in the Plan and using 1 day average annual demand (industry standard or less when other major sources are available) plus using only 6 of the city's well in their present condition we have adequate sources (add Tualatin intertie) and storage to meet all water demands in the year 2030 with over 1.5 million gallon surplus." (Page 1) and,

"The plan citing Tigard and Sherwood as examples for our using a 2 day annual daily storage requirement is a very poor choice. Their use of a 2 day period is justified based on Bull Run's history of bad samples from open reservoirs (e.g. recent boil water order to 135,000 households) and muddy turbidity from mud slides." (Page 2)

Response: City Staff concurs with Mr. Wallulis that refurbishing the six wells and maintaining them as a backup supply is an economically viable way to reduce the amount of future storage needed, and the corresponding capital cost. Mr. Wallulis is also correct that the change in calculation will eliminate the need for future storage reservoirs during the 20 year planning period. City Staff does not agree with reducing the volume of emergency storage from 2 days average daily demand (ADD) to one day. The following justifications are offered for keeping the two day ADD criteria as is:

- 2 days of ADD is consistent with most municipal water planning efforts including our surrounding neighbors (Sherwood, Tigard, West Linn). Mr. Wallulis also claims that these communities (Sherwood and Tigard specifically) linkage to Bull Run water justifies a higher level of security than Wilsonville's linkage to the Willamette River. Staff and our consultants believe a strong case can be made that there is similar risk of treatment plant shutdowns due to water quality problems in the river. In addition, both Sherwood and Tigard have

more interties available to them than Wilsonville, and have still chosen the higher two times ADD standard.

- Mr. Wallulis correctly states that one day of ADD is the current industry minimum standard, however, our consultants do not recommend that municipal water providers choose the minimum standard. Our consultants' experience on over 40 water master plans indicates that public water systems that depend on surface water supplies typically provide 2-3 days of emergency storage. This recommendation is based on a number of factors including the vulnerability of the water treatment system to contamination plumes or high turbidity events, the dependency of the water system on a single primary source of water, and the number of potential single points of failure. For example, what happens if the 63" diameter finish water pipeline fails and how long will it take to fix the pipeline?

- The average day demand can be quickly depleted in areas where there are large seasonal variations in flow. For Wilsonville, the maximum day demand is more than two times the average day demand.

- 2 days of ADD matches the previous criteria from the 2002 Master Plan and thereby continues the same level of service as before.

The net result of selecting the one day criteria is the potential elimination of the need for the 3MG West Side Reservoir project. Currently the majority of the City's storage is located at one site in the far NE corner of the City – the Elligsen site. The proposed new West Side tank provides other system benefits other than emergency storage. It provides more direct service to the City's current and future industrial zones located west of I-5 as well as to the fast growing Villebois residential area. All properties to the west of I-5 will benefit from better fire coverage in terms of both flow and pressure.

The decision to select one day or two days of Average Daily Demand as the appropriate emergency storage criteria is ultimately a policy decision to be made by City Council. Staff recommends keeping the two times ADD criteria for emergency storage as a prudent, but not excessive level of service.

Specific to Mr. Wallulis's comment that the storage calculations in the Master Plan do not account for the Tualatin intertie, he is correct. Opening the intertie requires a vote of the Tualatin City Council, therefore, staff did not feel the intertie could practically meet emergency service needs and it was excluded. The potential transfer capacity is 1 MGD, which reduces but does not eliminate the need for additional storage, assuming the two times ADD standard is retained.

Wallulis Statement: **WELLS vs RIVER SUPPLY table. (Page 1)**
59.74% increase in treatment cost

RESPONSE: Staff believes Mr. Wallulis intended to show the $2,739,057 treatment cost under the RIVER column instead of the WELLS column, with zero under the WELLS column. Staff does not challenge the calculated 59.74% increase in treatment cost, however, Mr. Wallulis may not be aware that we are providing the City of Sherwood approximately 2.5 MGD during fiscal year

2012/2013. This represents an 81% increase in production to serve Sherwood. A 60% increase in cost for an 81% increase in production appears reasonable, and it should be noted that Sherwood is paying for their equitable share of these operating costs. Also of note, all wells are outfitted with chlorine injectors as required by our State permits, and require electricity to run the pumps, so the treatment cost for the wells is not zero.

Wallulis Statement: SURFACE AND STORAGE FACILITIES (Page 1)

Grossly oversized storage results in stagnant water.
Grossly oversized storage results in chlorine loss.
$47,000 in additional chlorine injection and monitoring costs
$0 Painting Maintenance for Charbonneau Concrete Tank
$1,759,667 cost to abandon Charbonneau and replace capacity elsewhere

Response: The first two statements are both true, however, our current tanks are operated to avoid both of these issues, to the extent possible. According to Public Works and Veolia operations personnel, our current tanks are cycled (partially drained during the day, filled back up at night) in such a manner as to turn over approximately half the volume of each tank on a weekly basis. No chlorine is injected, or planned to be injected in the primary B level (Elligsen) tanks. From an operational standpoint, the tank having the greatest potential for stagnation and chlorine loss is the Charbonneau tank, because this tank must be cycled manually (using pumps) whereas the other reservoirs do so by opening and closing valves and letting the system pressure do the work. It is important to note that $33,000 of the referenced $47,000 in chlorine related costs are associated with the Charbonneau tank that could be avoided if the Charbonneau tank is abandoned. The remaining chlorine related costs are related to the C level tank (upper zone) to remedy current deficiencies.

Mr. Wallulis is correct that the buried concrete Charbonneau tank has no painting maintenance, however, there are other maintenance items specific to the Charbonneau tank that are detailed in Tables 6.1 and 6.2 of the Master Plan.
Of Mr. Wallulis's estimated $1.76M cost to both abandon the Charbonneau tank ($523,000) and "replace the capacity at another site across the River" ($1.2M), the $1.2M should be considered as included in the estimated cost of the 3 MG West Side Reservoir project, and is therefore not "additional" to the CIP list (Table 5.2). Mr. Wallulis is correct that a direct cost for abandonment ($523K – Mr. Wallulis's estimate) is not included in the CIP table.

Wallulis Statement: Eliminating 12.5% of our present water losses would generate approximately $1,650,000 in revenue for the Water and Wastewater (tied to water) annually, or decrease the system demand and required infrastructure. (Page 2)

Response: Concerning the unaccounted for water issue, we agree with Mr. Wallulis that over 17% of unaccounted for water is unacceptable. Section ES 2.3 and Section 2.3 of the Master

Plan document both address this issue. The City has a very aggressive leak detection program and long standing meter testing and replacement program and our best judgement tells us that this water is not wholly lost or stolen. This issue has been investigated a couple times in the past, but no definitive answers were discovered. We still do not have definitive answers, however, our investigations for this Master Plan did discovered some things not previously discovered, such as unmetered usage at the WTP itself, which has reduced the current estimate of unaccounted for water to approximately 13%. The Master Plan does recommend additional investigations and these are detailed on Page 2-13 of the Master Plan document. Concerning Mr. Walulis's calculation of $1,650,000 in potential additional revenue, or reduced system demand, that calculation is only true if it is assumed that all the various meters in the system are accurate and the water is truly lost. As referenced above, the Master Plan does not draw that conclusion. Additional investigations are recommended to pursue more accuracy and solutions to the current unaccounted for water estimates.

Wallulis Statement: Where is the logic, a lot more rigid 18" water line hanging on the City bridge safer, than a more flexible 10" water line on the recently designed and modified I-5 bridge to withstand earthquakes? (Page 2)

Response: This comment refers to the proposed 18" water line (City CIP project 1104) being designed to attach underneath the proposed Barber Street bridge (CIP project 4116), from Kinsman Road westward to Villebois. Please note that the Boone Bridge pipe to Charbonneau is a 12" not a 10", and both this pipe and the proposed 18" pipe are the same material and stiffness. However, the point is well made that it appears the City is in one case saying "a pipe across a bridge" is inadequate while at the same time designing "a pipe across a bridge" on another project. However, the issue is not the "pipe across a bridge". The issue is redundancy (e.g., looping) of the supply system, primarily for fire protection purposes, as well as convenience for temporary valve closures that can occur during construction, maintenance, and repair. In the Charbonneau case, the existing single pipeline is across a bridge and the redundancy will come from the proposed pipeline under the river. In the Barber Street case, we have an underground pipeline already in place and the redundancy will come from the new pipe across the new bridge. The 18" line along the Barber Street alignment has been in the CIP for a number of years, and as such was incorporated directly into the Master Plan CIP (Table 5.2). However, with Segment 3b of the 48" transmission line in final design, Staff has reason to re-evaluate this project, as it may be possible to achieve looping to Villebois from the north and west, thereby eliminating the Barber Street water line project. Staff will need to run our new Hydraulic Model (developed as part of this Master Plan) to confirm adequate fire flow from the alternate directions and will report back to Council at a later date.

Wallulis Recommendation #1: Preserve Charbonneau's ability to provide water to all its users with the existing facilities and possibly adding simple solutions for better access to the supply from 10 ponds and swimming pools. (Page 2)

Response: As previously documented, using ponds and pools for supplemental fire water supply to the Charbonneau District is not considered a viable solution by city staff, nor does it appear to meet the criteria of Tualatin Valley Fire and Rescue. Concerning the first part of the recommendation – to preserve Charbonneau's ability to provide water with the existing facilities, the Master Plan adequately documents the risks in relying only on existing facilities, e.g., the existing tank, booster pumps, wells, and 12" pipeline across the Boone Bridge. Although the timing of a large earthquake is uncertain and the existing facilities may provide adequate service for a long period of time, the Charbonneau District remains the only major section of the City not served by a redundant "looped" water supply main, or an equivalently reliable backup system. As such, the District does not currently meet the intent of Comprehensive Plan Goal 3.1 and the associated policies and implementation measures. Since one of the primary goals of the Master Plan was to identify and apply applicable goals, policies and technical criteria equally across the system, the Charbonneau District was treated no differently than any other part of the City. In doing so, improvements to the water supply system serving Charbonneau were identified and evaluated, and the recommendation was made for a redundant pipeline under the river as the alternative having the highest reliability and best benefit/cost evaluation. City Staff does not recommend altering this recommendation.

Wallulis Recommendation #2: Retain the services of an independent consulting Engineer to verify my claims. Requires only 4 pages of data to do it. Please invest in a few $1,000 to save approximately $18,000,000. (Page 2)

Response: City Staff believes the Master Plan has been fully vetted both internally and externally, and the technical questions and issue have been adequately addressed. Concerning the potential to save $18,000,000, Staff does not agree that savings of this magnitude are even remotely possible, given the fact that the basis of this cost estimate includes the 48" transmission line project with the City of Sherwood that is in final design and will be partially funded by Sherwood($4M), a second 3MG tank ($4M) that is not included in the Master Plan CIP list, and almost $3M in debt service that assumes debt financing that is not discussed in the Master Plan. The only two large projects that could conceivably be cut from the Master Plan CIP list are the West Side Reservoir project ($5.8M) and the proposed 16" pipeline to Charbonneau ($1.5M). These projects have been identified as needs for the Wilsonville water distribution to provide safe and reliable drinking water. While these projects can be linked to policy decisions made by Council concerning the level of service desired for the Wilsonville water system, Staff believes both of these projects are prudent for long range planning, justified on a benefit/cost basis, and do not result in excessive capacity. Staff expects further evaluation and value engineering of these projects will occur as they move closer to reality.

City of
WILSONVILLE
in OREGON

Planning Division
29799 SW Town Center Loop E
Wilsonville, OR 97070
503-682-4960
503-682-7025 fax

PLANNING DIVISION

Linda Straessle
FAX: (503) 682-7025
(503) 570-1571
straessle@ci.wilsonville.or.us

Delivery via Certified Mail

Letter of Transmittal

TO: Attention: Plan Amendment Specialist	FROM: Linda Straessle
Department of Land Conservation & Development	Administrative Assistant
635 Capital Street NE, Suite 150	
Salem, Oregon 97301-2540	DATE: September 10, 2012

WE ARE TRANSMITTING THE FOLLOWING:

- **DLCD Notice of Adoption form for LP12-0002 Water System Master Plan update.**
- **List of Affected State or Federal Agency, Local Government or Special Districts**
- **Wilsonville City Council Notice of Decision for Ordinance No. 707, with attached Affidavit of Mailing Notice of City Council Decision.**
- **List of changes made to Ordinance No. 707 Exhibit A – Water System Master Plan Final Draft dated July 25, 2012 during City Council hearings. (Final adopted Plan not available prior to the due date of this notice.)**
- **Adopted Ordinance No. 707**

FORM 2 DLCD Notice of Adoption

This Form 2 must be mailed to DLCD within **5-Working Days after the Final Ordinance is signed** by the public Official Designated by the jurisdiction and all other requirements of ORS 197.615 and OAR 660-018-000

☐ In person ☐ electronic ☐ mailed

DATE STAMP

For Office Use Only

Jurisdiction: **City of Wilsonville**

Local file number: **LP12-0002/Ord. # 707**

Date of Adoption: **9/6/2012**

Date Mailed: **9/10/2012**

Was a Notice of Proposed Amendment (Form 1) mailed to DLCD? ☒ Yes ☐ No Date: 4/26/2012

☒ Comprehensive Plan Text Amendment

☐ Comprehensive Plan Map Amendment

☐ Land Use Regulation Amendment

☐ Zoning Map Amendment

☐ New Land Use Regulation

☒ Other: **Master Plan Update**

Summarize the adopted amendment. Do not use technical terms. Do not write "See Attached".

Water System Master Plan update. The Plan documents current water demand, evaluates current system deficiencies, estimates future water demands over a 20-year growth horizon, and estimates the capital and operation costs needed to meet these future demands.

Does the Adoption differ from proposal? Yes, Please explain below:

An Acronyms, Abbreviations and Definitions section was added (2 pages), Sections ES 3.2 and Chapter 7 were added describing applicable City Comprehensive Plan Goals, Policies and Implementation Measures, the Priority Capital Improvements estimate was revised from $27.3M to $25.6M, and O&M Recommendations were expanded.

Plan Map Changed from: **n/a** to: **n/a**

Zone Map Changed from: **n/a** to: **n/a**

Location: **Citywide** Acres Involved:

Specify Density: Previous: **n/a** New: **n/a**

Applicable statewide planning goals:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐

Was an Exception Adopted? ☐ YES ☒ NO

Did DLCD receive a Notice of Proposed Amendment...

35-days prior to first evidentiary hearing? ☒ **Yes** ☐ **No**

If no, do the statewide planning goals apply? ☐ **Yes** ☐ **No**

If no, did Emergency Circumstances require immediate adoption? ☐ **Yes** ☐ **No**

DLCD file No. _____

Please list all affected State or Federal Agencies, Local Governments or Special Districts:

See Attached List

Local Contact: **Eric Mende, Deputy City Engineer** Phone: **(503) 682-4960** Extension:

Address: **29799 SW Town Center Loop E** Fax Number: **503-682-7025**

City: **Wilsonville** Zip: **97070-** E-mail Address: **mende@ci.wilsonville.or.us**

ADOPTION SUBMITTAL REQUIREMENTS

This Form 2 must be received by DLCD no later than 5 working days after the ordinance has been signed by the public official designated by the jurisdiction to sign the approved ordinance(s)

per ORS 197.615 and OAR Chapter 660, Division 18

1. This Form 2 must be submitted by local jurisdictions only (not by applicant).
2. When submitting the adopted amendment, please print a completed copy of Form 2 on light **green paper if available**.
3. Send this Form 2 and **one complete paper copy** (documents and maps) of the adopted amendment to the address below.
4. Submittal of this Notice of Adoption must include the final signed ordinance(s), all supporting finding(s), exhibit(s) and any other supplementary information (ORS 197.615).
5. Deadline to appeals to LUBA is calculated **twenty-one (21) days** from the receipt (postmark date) by DLCD of the adoption (ORS 197.830 to 197.845).
6. In addition to sending the Form 2 - Notice of Adoption to DLCD, please also remember to notify persons who participated in the local hearing and requested notice of the final decision. (ORS 197.615).
7. Submit **one complete paper copy** via United States Postal Service, Common Carrier or Hand Carried to the DLCD Salem Office and stamped with the incoming date stamp.
8. Please mail the adopted amendment packet to:

ATTENTION: PLAN AMENDMENT SPECIALIST
DEPARTMENT OF LAND CONSERVATION AND DEVELOPMENT
635 CAPITOL STREET NE, SUITE 150
SALEM, OREGON 97301-2540

9. **Need More Copies?** Please print forms on **8½ -1/2x11 green paper only if available**. If you have any questions or would like assistance, please contact your DLCD regional representative or contact the DLCD Salem Office at (503) 373-0050 x238 or e-mail **plan.amendments@state.or.us**.

Affected State or Federal Agencies, Local Governments or Special Districts

Name	Company	Address	City	State	Zip
Columbia Cable of Oregon		14200 SW Brigadoon Ct.	Beaverton	OR	97005
Tualatin Valley Water District		1850 SW 170th Ave.	Beaverton	OR	97005-4211
Planning Director	City of Sherwood	22560 SW Pine Street	Sherwood	OR	97140
City Planner	City of Canby	182 N. Holly	Canby	OR	97013
Mike McCallister	Clackamas Cty Planning Manager	150 Beavercreek Road	Oregon City	OR	97045
William Graffi	Unified Sewerage Agency	155 N. First Avenue, Room 270	Hillsboro	OR	97124
Andy Back	Wash. County Long Range Planning	155 N. First Avenue	Hillsboro	OR	97124
Wendy Buck	Portland General Electric	121 SW Salmon 1 WTC3	Portland	OR	97204
Shelley Fenton	BPA Realty Department	PO Box 3621	Portland	OR	97208
Tom Simpson	NW Natural Gas	220 NW 2nd Avenue	Portland	OR	97209
Michael Dennis	Tri-Met Project Planning Dept	4012 SE 175th Avenue	Portland	OR	97202
Oregon Dept of Environ Quality		811 SW Sixth Avenue	Portland	OR	97204
Ray Valone	Metro	600 NE Grand Avenue	Portland	OR	97232
Manager, Community Development	Growth Management Services Metro	600 NE Grand Avenue	Portland	OR	97232
Attn: Development Review	ODOT	123 NW Flanders Street	Portland	OR	97209
John Lilly	Department of State Lands	775 Summer Street, NE	Salem	OR	97301-1279
Richard Ross	Department of Corrections	2575 Center Street NE	Salem	OR	97310
Bobbi Burton	Community Coordinator, Facilities Division	2575 Center Street, NE	Salem	OR	97310
Bill Ferber, Region Manager	Oregon Water Resources Department	725 Summer Street, NE	Salem	OR	97301
Sherwood School Dist Admin Office		23295 SW Main Street	Sherwood	OR	97140
Aquilla Hurd-Ravich	Community Development Director City of Tualatin	18880 SW Martinazzi Avenue	Tualatin	OR	97062
Bill Rhoades	West Linn/Wilsonville School District 3JT	22210 SW Stafford Rd.	Tualatin	OR	97062
Brian Tietsort	United Disposal Services	10295 SW Ridder Road	Wilsonville	OR	97070
Brian Moore	Portland General Electric	9540 SW Boeckman Road	Wilsonville	OR	97070
Tualatin Valley Fire and Rescue	South Division	7401 SW Washo Court	Tualatin	OR	97062-8350
Tualatin Valley Fire and Rescue		29875 SW Kinsman Road	Wilsonville	OR	97070

WILSONVILLE CITY COUNCIL
NOTICE OF DECISION

FILE NO: **Ordinance No. 707**
An Ordinance Of The City Of Wilsonville Adopting An Updated Water System Master Plan As A Sub-Element Of The City's Comprehensive Plan; Adopting A Capital Improvement Project List For Water Supply, Storage And Distribution; And Replacing All Prior Water System Master Plans.

APPLICANT: **City of Wilsonville**

After conducting public hearings, the City Council voted to adopt Ordinance No. 707 as submitted and adopted findings and conclusions to support their action.

This decision has been finalized in written form as **Ordinance No. 707** and placed on file in the city records at the Wilsonville City Hall this 10th day of September, 2012 and is available for public inspection. The date of filing is the date of decision. Any appeal(s) must be filed with the Land Use Board of Appeals (LUBA) in accordance with ORS Chapter 197, within twenty-one days from the date of decision. Copies of Ordinance No. 707 may be obtained from the City Recorder, 29799 SW Town Center Loop East, Wilsonville, OR 97070, (503) 570-1506.

For further information, please contact the Wilsonville Engineering Division, 29799 SW Town Center Loop Road, Wilsonville, Oregon 97070 or telephone (503) 682-4960.

AFFIDAVIT OF MAILING
NOTICE OF CITY COUNCIL DECISION
OF THE CITY OF WILSONVILLE

STATE OF OREGON)
)
COUNTIES OF CLACKAMAS)
)
CITY OF WILSONVILLE)

I, Sandra C. King, do hereby certify that I am City Recorder of the City of Wilsonville, Counties of Clackamas and Washington, State of Oregon, that the attached copy of Notice of Decision regarding Ordinance No. 707 "An Ordinance Of The City Of Wilsonville Adopting An Updated Water System Master Plan As A Sub-Element Of The City's Comprehensive Plan; Adopting A Capital Improvement Project List For Water Supply, Storage And Distribution; And Replacing All Prior Water System Master Plans" is a true copy of the original notice; that on, September 10, 2012 , I did cause to be e-mailed copies of such notice of decision in the exact form hereto attached to the listed below:

Dean Tessler – dtessler@theram.com
Stanley Wallulis – Swallulis@gmail.com
Cliff Engel – engel1@hevanet.com

Witness my hand this 10th day of September, 2012.

_____
Sandra C. King, MMC, City Recorder

Subscribed and sworn to before me this _____ day of _____ , 2012.

_____
NOTARY PUBLIC, STATE OF OREGON

My commission expires: _____

DLCD Attachment – Water System Master Plan

There is one text change to the Final Draft of the Water System Master Plan dated July 2012, as adopted by Wilsonville City Council on September 06, 2012 by Ordinance 707.

The text of Section ES 3.2 and identical text in Chapter 7 were modified as follows: (added text is underlined):

..... The primary goal of the water master plan is derived from Wilsonville's Comprehensive Plan Goal 3.1 providing for infrastructure in general and is as follows:

> To assure that good quality public facilities and services are available with adequate but not excessive capacity to meet community needs, while assuring that growth does not exceed the community's commitment to provide adequate facilities and services.

ORDINANCE NO. 707

AN ORDINANCE OF THE CITY OF WILSONVILLE ADOPTING AN UPDATED WATER SYSTEM MASTER PLAN AS A SUB-ELEMENT OF THE CITY'S COMPREHENSIVE PLAN; ADOPTING A CAPITAL IMPROVEMENT PROJECT LIST FOR WATER SUPPLY, STORAGE AND DISTRIBUTION; AND REPLACING ALL PRIOR WATER SYSTEM MASTER PLANS

WHEREAS, the City currently has a Water System Master Plan that was adopted by City Council (Ordinance No. 531) on January 7, 2002; and

WHEREAS, ORS 197.175 requires cities to prepare, adopt, and implement Comprehensive Plans consistent with statewide planning goals adopted by the Land Conservation and Development Commission; and

WHEREAS, ORS 197.712 (2)(e) requires cities to develop and adopt a public facilities plan for areas within the Urban Growth Boundary containing a population greater than 2,500 persons, including rough cost estimates for projects needed to provide sewer, water and transportation uses contemplated in the Comprehensive Plan and Land Use Regulations; and

WHEREAS, an updated Water System Master Plan is needed to account for growth and plan for future development; and

WHERAS, the update to the Water System Master Plan documents current water demand, evaluates current system deficiencies, estimates future water demands over a 20-year growth horizon, and estimates the capital and operation costs needed to meet these future demands; and

WHEREAS, in developing the new Water System Master Plan, the City has sought to carry out federal, state and regional mandates, provide for alternative improvement solutions to minimize public and private expense, avoid the creation of nuisances and maintain the public's health, safety, welfare and interests; and

WHEREAS, proposed amendments to the Water System Master Plan identifies changes to Comprehensive Plan Goal 3.1; and

WHEREAS, Keller Associates, the project consultant, and City staff conducted work sessions with the Planning Commission and City Council and held a public open house on the Water System Master Plan to solicit citizen input addressing Statewide Planning Goal #1 – Citizen Involvement; and

WHEREAS, following the timely mailing and publication of the required Ballot Measure 56 notice, the Wilsonville Planning Commission conducted a public hearing on July 11, 2012 and adopted Resolution Number LP12-0002 recommending the City Council adopt the Water System Master Plan; and

WHEREAS, after providing due public notice, as required by City Code and State Law, a public hearing was held before the City Council on August 20, 2012, at which time the City Council considered the recommendation of the Planning Commission, gathered additional evidence and afforded all interested parties an opportunity to present oral and written testimony concerning the Water System Master Plan; and

WHEREAS, the City Council has carefully considered the public record, including all recommendations and testimony, and being fully advised.

NOW, THEREFORE, THE CITY OF WILSONVILLE ORDAINS AS FOLLOWS:

1. FINDINGS.

   The above-recited findings are adopted and incorporated by reference herein, including the findings and conclusions of Resolution No. LP12-0002, which includes the staff report. The City Council further finds and concludes that the adoption of the updated Water System Master Plan is necessary to help protect the public health, safety and welfare of the municipality by planning that will help to ensure there will continue to be adequate capacity and quality of water within the City's municipal system.

2. DETERMINATION.

   Based upon such findings, the City Council hereby adopts the Water System Master Plan, attached hereto and marked as Exhibit A, and incorporated by reference as if fully se forth herein, which shall replace and supersede all prior Water System Master Plans adopted by Ordinance, resolution or motion.

3. EFFECTIVE DATE OF ORDINANCE.

   This Ordinance shall be declared to be in full force and effect thirty (30) days from the date of final passage and approval.

SUBMITTED to the Wilsonville City Council and read the first time at a regular meeting thereof on the 20th day of August, 2012, and scheduled for second reading at a regular meeting thereof on the 6th day of September, 2012, commencing at the hour of 7.P.M. at Wilsonville City Hall.

Sandra C. King

Sandra C. King, MMC, City Recorder

ENACTED by the City Council on the 6th day of September 2012, by the following votes:

YEAS:-4- NAYS: -0-

Sandra C. King

Sandra C. King, MMC, City Recorder

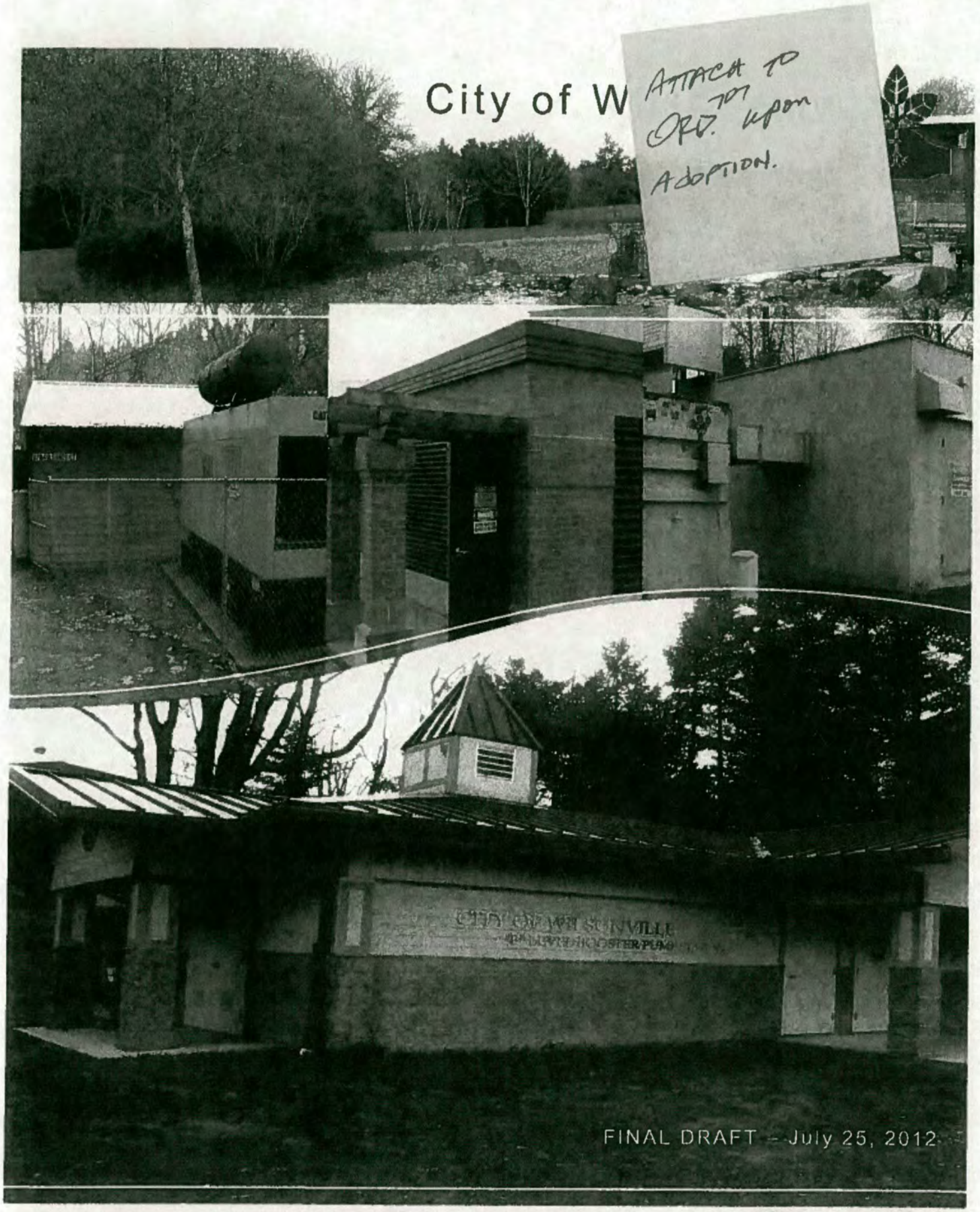
DATED and signed by the Mayor this 7th day of September 2012.

Tim Knapp

Tim Knapp, Mayor

SUMMARY OF VOTES:

Mayor Knapp	Yes
Council President Nunez	Yes
Councilor Goddard	Yes
Councilor Starr	Yes



WATER SYSTEM MASTER PLAN

KELLER associates

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Water System Master Plan

City of Wilsonville, Oregon

KELLER associates

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APPENDIX C – WATER USAGE DATA

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ACRONYMS, ABBREVIATIONS, AND SELECTED DEFINITIONS

AC	asbestos cement
ADD	average day demand
Amp	electrical amperage rating
AWWA	American Water Works Association
blow-off	end-of-line valve and fittings used for manual flushing of pipelines
Conc	concrete
C	Celcius
CCTV	closed circuit television
CFD	computational fluid dynamic
CI	cast iron
CIP	Capital Improvement Plan
CT	concentration x T_{10}
CU	elemental designation for copper material
DI	ductile iron
DC	direct current electricity
EDU	equivalent dwelling unit
EPA	U.S. Environmental Protection Agency
ERU	equivalent residential unit
fps	feet per second
ft	feet (or) foot
hp	horsepower
GIS	geographic information system
gpcd	gallons per capita per day
gpm	gallons per minute
gpm/sf	gallons per minute per square foot
hrs	hours
HRT	hydraulic residence time
ID	identification
in	inch
Level A	The lowest pressure service area in Wilsonville (also referred to as "A Level")
Level B	The middle pressure service area in Wilsonville (also referred to as "B Level")
Level C	The higher pressure service area in Wilsonville (also referred to as "C Level")
Level D	A future, highest pressure service area in Wilsonville (also referred to as "D Level")
LIDAR	light detection and ranging
LMI	Liquid Metronic Incorporated (metering pump)
MCC	motor control center
MDD	maximum day demand
Metro	An elected, regional government for the Portland metropolitan area
MFDU	multi-family dwelling unit
MG	million gallons
mgd	million gallons per day
mg·min/L	milligram-minute per liter
mg/L	milligrams per liter

min	minutes
OAR	Oregon Administrative Rules
ODHS	Oregon Department of Human Services
ODWR	Oregon Department of Water Resources
O&M	operation and maintenance
PDD	peak day demand
pH	potential Hydrogen (measure of the acidity or basicity)
PHD	peak hour demand
PLC	programmable logic control unit
ppd	pound per day
ppm	parts per million
PRV	pressure reducing valve
psi	pounds per square inch
PSU	Portland State University
PVC	polyvinyl chloride plastic
RCP	reinforced concrete pipe
SCADA	supervisory control and data acquisition
sf	square feet
SFDU	single family dwelling unit
T_{10}	time required for 10% of the inlet chemical concentration to reach the outlet
T_{90}	time required for 90% of the inlet chemical concentration to reach the outlet
T_{10}/T_{90}	more conservative hydraulic efficiency factor obtained by dividing T_{10} by T_{90}
T_{10}/HRT	hydraulic efficiency factor
TAZ	traffic analysis zone
turnout	refers to a water delivery point or water enters the distribution system
TVF&R	Tualatin Valley Fire and Rescue
TVWD	Tualatin Valley Water District
UGB	urban growth boundary
UPS	uninterruptible power supply
URA	urban reserve area
USEPA	U.S. Environmental Protection Agency
US	United States
UV	ultraviolet radiation
VFD	variable frequency drive
WMP	water master plan
WMCP	water management and conservation plan
WRWTP	Willamette River Water Treatment Plant
WSMP	water system master plan
WTP	water treatment plant

Water System Master Plan

Executive Summary

KELLER associates

INTRODUCTION AND OVERVIEW

Keller Associates, Inc. was commissioned in 2011 to complete a Water System Master Plan that would update the 2002 plan. This water master plan is a 20-year planning document that focuses primarily on Wilsonville's water distribution system. This system includes the City's network of water pipelines, storage tanks, valves, and hydrants. An overview of the system is illustrated in Figure 1, found in Appendix A of this report.

The primary water supply for Wilsonville is from a state-of-the-art surface water treatment plant, commissioned in April 2002. This master plan includes an evaluation of the existing treatment plant capacity, and identifies minor improvements to accommodate an increase in the production rate from 12 to 15 million gallons per day. (A more comprehensive evaluation and master plan for the treatment plant is not part of this document, but the City intends to complete one at a later date.) The plan also evaluates the existing groundwater wells that now serve as an emergency backup supply to the City.

In general, Wilsonville's water system is in great condition, providing a safe and reliable water source to the residents and businesses serviced. Water rights are sufficient for projected needs, the treatment plant is only 10 years old, and the majority of the pipelines and other distribution facilities are less than 30 years old. The City has well-trained employees who perform regular maintenance of the facilities, and few deficiencies exist.

This planning document identifies upgrades to the water system to accommodate anticipated future demands. The plan also identifies potential vulnerabilities and localized areas where the fire protection could be improved. Recommended improvements for the 20-year planning horizon are discussed in more detail in the technical summary that follows, and generally include the following:

- An additional 3.0 million gallons (MG) of water storage tank
- Completion of the 48-inch transmission pipeline
- A new 16-inch waterline under the Willamette to Charbonneau District
- Minor water treatment plant upgrades
- Miscellaneous pipeline and facility upgrades intended to improve operations, water quality, and fire protection

In addition to these capital improvements, this plan identifies repair and replacement needs and recommends continued routine maintenance activities. These include:

- Ongoing pipeline, hydrant, and meter replacement programs
- Ongoing maintenance and upgrades to the well facilities to retain functionality as a reliable backup supply
- Efforts to reduce the amount of unaccounted for water (water loss) to less than 10%

TECHNICAL SUMMARY

This section provides a summary of the major findings of the master plan. It includes brief discussions of water demand assumptions, water system asset conditions, system deficiencies, and recommendations for improvements to the water storage and distribution system. A partial assessment of the water treatment capabilities is also provided consistent with this documents' focus on City of Wilsonville needs and requirements. Long range planning for the Willamette River Water Treatment Plan (WRWTP) involves multiple parties and is beyond the scope of this document.

ES.1 DESIGN CONDITIONS

ES.1.1 Demographics

The study area is illustrated in Figure 2, found in Appendix A. It includes the area within the existing Urban Growth Boundary, plus portions of Clackamas and Washington County Urban Reserve Areas expected to be incorporated into Wilsonville. The study area is intended to coincide with the ongoing Transportation System Plan update.

Based on an evaluation of population projections from various sources, an annual residential growth rate of 2.9% was assumed. Both single family and multi-family dwelling units were assumed to grow at this rate until build-out of their respective parts of the study area.

For nonresidential development, the number of employees in the study area was projected (per previous planning studies) to double over a 20-year period. This equates to an annual average nonresidential growth rate of 3.5%.

ES.1.2 Water Demand

Water production data from 2005 to 2009 was used to establish water demand patterns (due to current economic conditions, 2010 was not considered representative of normal usage). Table ES.1 shows the values used to estimate future demands.

TABLE ES.1 – Water Demands by User Type

	Single Family	Multi-Family	Commercial	Industrial
Average Daily Demand				
gallons/Household	247	162	-	-
gpm/Acre	-	-	1.93	0.56
Maximum Day Demand				
gallons/Household	606	283	-	-
gpm/Acre	-	-	3.3	0.84

gpm = gallons per minute

For build-out, industrial demands were increased by an additional 25 percent to reflect redevelopment, additional infill, and higher water users within existing structures. Three large future industries totaling 1.0 mgd in demand were also included in future water usage projections.

The existing treatment plant and Wilsonville transmission system will also provide supplemental potable water supply to the City of Sherwood. Sherwood is currently receiving up to 2.5 mgd, and by 2015 will be receiving 5.0 mgd.

Table ES.2 summarizes the future demands for residential and nonresidential users, future industry, and supplemental supply for the City of Sherwood. Supply to the City of Sherwood was assumed to increase to 10 mgd in 2030 and 20 mgd at final build-out. Build-out of the study area is projected to occur in the year 2036 for nonresidential areas, and in the year 2045 for residential areas.

TABLE ES.2 - Future Water System Demands

Scenario	2010	2015	2020	2025	2030	Build-out
Population	19,525	22,525	25,986	29,979	34,585	52,400
Households	7,873	9,083	10,478	12,088	13,948	21,129
Residential						
Average, mgd	1.70	1.96	2.26	2.60	3.00	4.21
Peak Day, mgd	3.62	4.17	4.82	5.56	6.41	8.74
Peak Hour, mgd	6.16	7.10	8.19	9.45	10.9	14.86
Nonresidential						
Average, mgd	1.50	1.79	2.12	2.52	2.99	3.09
Peak Day, mgd	3.08	3.66	4.35	5.16	6.13	6.35
Peak Hour, mgd	5.24	6.23	7.40	8.79	10.4	10.80
Other Miscellaneous						
3 Future Large Industries	0.00	0.50	0.75	1.00	1.00	1.00
Sherwood	0.00	5.00	5.00	10.0	10.0	20.0
Total System						
Average, mgd	3.20	9.24	10.1	16.1	17.0	28.3
Peak Day, mgd	6.70	13.3	14.9	21.7	22.5	36.1
Peak Hour, mgd	11.4	18.8	21.3	29.2	32.3	46.7

mgd = million gallons per day

ES.2 WATER SYSTEM EVALUATION

The City of Wilsonville's primary supply comes from the Willamette River. A state-of-the-art treatment plant produces high-quality finished water that is pumped into a transmission pipeline and conveyed to the City's distribution system through three delivery points ("turnouts") as shown on Figure 1. The system also includes four

storage reservoirs, two booster stations, over 107 miles of distribution pipeline, three pressure zones, and eight wells.

Keller Associates updated the City's existing computer model of the City's distribution system. Every storage reservoir, booster station, and City pipeline 4-inches and larger were included in the model. The model was refined as field measurements were compared to model results in a process referred to as calibration. The City now has a highly accurate and dynamic hydraulic model of their water system. This tool can be used and updated to quickly investigate potential system impacts from new users.

ES.2.1 Storage

Storage in a water system is provided for operational flexibility, to meet peak demands, for fire flows, and for emergency conditions. The City's four existing storage reservoirs provide 7.6 million gallons (MG) of effective (or useable) storage. These reservoirs are located within the City's distribution system, providing needed operating, peaking, fire, and emergency storage. In addition to these four reservoirs, a minimum storage volume is maintained in the treatment plant clearwell for chlorine disinfection. During an emergency, it was assumed that this water would also be available to the City, providing an additional 1.08+ MG of emergency storage. Adding the clearwell emergency storage provides the City with approximately 8.7 MG of storage. Based on a worst case scenario (no backup wells to supplement storage), the total storage required is anticipated to increase from 9 MG to almost 18 MG by 2030.

The City has plans to construct an additional 3.0 MG storage reservoir near the intersection of Tooze and Baker Road. This reservoir, combined with existing storage, will provide sufficient long-term storage for the City's 20-year needs provided that the City continues to maintain the majority of the existing backup wells to offset storage needs. This storage volume would also allow the existing Charbonneau tank to be abandoned, provided a secondary supply line is constructed to the District.

ES.2.2 Pumping

The Charbonneau Booster Station and the B-to-C Booster Station are currently the only two pumping facilities in the distribution system. The Charbonneau Booster Station runs only periodically because the Charbonneau District can usually receive needed flows and pressures through the connection to the main distribution system (Zone B). The B-to-C Booster Station works together with the C Level Reservoir to meet the pressure and flow needs of the C Level pressure zone. No additional booster pumping is required for the current system, but several upgrades to the existing booster stations are recommended. As the City grows, a future D Level Booster Station will be required to service the northeast corner of the study area.

ES.2.3 Distribution System

The existing distribution system was evaluated for age, physical condition, water pressure, and capability to provide fire flows.

Age & Physical Condition

Most of the pipe materials are ductile iron or cast iron, which can have a life of 75-100 years in non-aggressive soil environments. However, recurring problems have been reported with some cast iron pipe – particularly those sections installed in the 1970s (approximately 32,800 feet of pipeline), much of which is located in the Charbonneau District. In addition, approximately 1,700 feet of small diameter steel pipe sections may need to be replaced, since these pipe materials are generally in poorer condition. These problematic pipeline sections are recommended for replacement within the next 20 years. Replacement of 34,500 feet of pipe over the next 20 years will involve replacing an average of 1,725 feet of pipe per year.

In addition to the pipeline sections that need to be replaced, the City has identified 40 fire hydrants that need replacing. Hydrant and pipeline replacement projects should be coordinated with each other and with planned street repairs wherever possible to minimize costs. Replacements should also be coordinated with the Tualatin Valley Fire and Rescue.

Keller Associates recommends that the City continue their meter testing and replacement program of large commercial meters on a 3-year cycle, and expand the residential meter testing program to include a representative sample (100±) each year.

Fire Flows

Based on water system modeling, fewer than 5 percent (55 of approximately 1200) locations modeled in the system cannot meet the target fire flow standard (1500 gpm residential, 3000 gpm commercial/industrial). Most of these are dead-end or short lengths of smaller diameter piping.

Pressure

Most modern appliances and plumbing fixtures operate best when water system pressures are between 50 psi and 80 psi. Water system modeling shows that much of Wilsonville's water system will experience water pressure greater than 80 psi. This is because the greater part of Wilsonville is served by the B Level pressure zone (refer to Figure 5 in Appendix A for pressure zone map). This arrangement is not uncommon for water systems, but does require that individual pressure regulators be installed to regulate pressures below 80 psi. For Wilsonville's system, Keller Associates recommends that individual pressure regulators be installed on all new connections. This will give the City the greatest flexibility in operations, while providing a level of protection to the user. Where future mainline pressures are anticipated to exceed 120 psi, special piping is recommended.

There are also some areas of low pressure in the northern portion of the system. While none of the areas are less than 40 psi, these may be areas the operations crew should monitor as the system continues to evolve. In order to provide water service with pressures greater than 40 psi to the northeast portion of the study area, a new pressure zone will be required. Existing and future pressure zones are illustrated in Figure 5 in Appendix A.

Water Loss

The City has active meter testing and leak detection programs. However, in recent years unaccounted for water (often referred to as water loss) amounted to between 15.7% and 17.6% of the total reported water produced at the water treatment plant. Efforts to locate this water, which were completed in conjunction with this study, suggest that the actual unaccounted for water is closer to 13% (refer to Section 2.3). Keller Associates recommends the following activities to reduce the unaccounted for water to less than 10%:

- Continued leak detection and large meter testing programs.
- Expand leak detection to include private unmetered fire lines.
- Implement residential meter testing and replacement programs.
- Account for water treatment plant utility water and onsite irrigation usage.
- Enhance tracking of water loss by trending water loss on a 12-month volumetric moving average basis.
- More aggressively investigate atypical low water uses. This process can be partially automated with the billing system, flagging accounts with no water usage or water usage substantially less than that reported for the same time the previous year.
- Look at partitioning of segments of the City (e.g. Charbonneau District) and compare metered delivery volumes for the region to the total of the individual meter readings.

These recommendations will be included in Wilsonville's forthcoming Water Management and Conservation Plan. The plan is currently being prepared in accordance with OAR 690.86.

Other Issues

Other system vulnerabilities and inefficiencies were found while evaluating the existing water system. Additional improvements were recommended to address these issues.

One of the vulnerabilities discovered in Wilsonville's system was single line connections to large parts of the system. In the event that the single pipeline were to rupture, the entire downstream area would be without water. Looping is recommended. Examples of these areas include the single line supplying Zone C north of Elligsen, and the Canyon Creek, Ash Meadow, and Sundial apartments.

Another vulnerability found in the system was hydrant coverage shortage in several of the more populated sections of the water system (based on a maximum service area radius of 300 feet from the hydrant). Hydrants, and in some cases new or upsized pipelines, are proposed to provide adequate coverage in the evaluated areas.

One inefficiency relates to the operations of the Charbonneau tank. Under the current operation, water enters the tank from the water system and then has to be pumped again into the water system to be used. The improvements identified in this plan will remove unnecessary pumping.

ES.2.4 Wells

The City owns and maintains eight potable groundwater wells that once supplied all of the City's drinking water. Since the completion of the water treatment facility in 2002, these wells are designated for emergency backup water supply only. Keller Associates reviewed the well conditions, water rights status, availability of standby power, water quality, and pump tests (conducted as part of the study) to prioritize which well facilities warrant upgrades and continued maintenance, and which ones should be considered for potential abandonment or conversion to nonpotable (e.g. irrigation) use.

Given the potential for the Charbonneau District to become isolated from the remainder of the system due to an earthquake, it was felt that the two Charbonneau wells should be maintained as a critical backup supply source for areas south of the Willamette River. The Wiedeman, Boeckman, Gesellshaft, and Elligsen wells all have deficiencies, but should be maintained as part of the City's backup water supply. Keller Associates recommends that the City consider abandoning the Canyon Creek and repurposing Nike well for local irrigation purposes. Before abandoning any well, the City should carefully review the long-term benefits of maintaining/transferring existing water rights.

ES.2.5 Treatment and Transmission Overview

The Willamette River Water Treatment Plant (WRWTP), completed in 2002, is jointly owned by the City of Wilsonville and the Tualatin Valley Water District (TVWD). Most of the existing treatment plant is currently rated for 12-15 mgd, with portions capable of handling 70+ mgd. Though a detailed treatment study was outside the scope of this master plan, hydraulics and process capacities were analyzed. With relatively minor upgrades or policy changes, the WRWTP will be able to treat the design production rate of 15 mgd. Based on projected system demands, a major plant expansion would be needed sometime after 2020. A separate water treatment plant master plan is needed to define what additional plant upgrades are needed to increase the capacity beyond 15 mgd.

Multiple evaluations have been performed on the WRWTP's production capacity each with different results. Applying the more conservative assumptions, the current plant capacity is 12 mgd. Under these assumptions, the limitation of the treatment plant is the clearwell storage volume. Under the current City policy of maintaining 1.25 million gallons of operational storage

(15 mgd for 2 hours), the remaining storage is insufficient to provide adequate disinfection contact time. However, modifying the policy to keep only 0.30 million gallons of operational storage (a conservative estimate of what is needed for on-site operations) would result in a treatment capacity in excess of 15 mgd. Alternatives to policy modification include capital improvements to the clearwell such as adding mixer pumps or baffles. In either case, a new tracer study on the clearwell is warranted because the previous tracer study results are only applicable for flows up to 9.5 mgd. Further details on this subject can be found in Chapter 4.

In addition to the potential clearwell limitations, there are also transmission limitations. When flows begin to exceed 12.5 mgd from the WRWTP, a sudden stop in flow (e.g. power failures) can lead to damaging surge conditions in the transmission and distribution lines. A 750 cubic foot hydropneumatic tank is recommended to mitigate this potential damage and allow the plant to safely operate at 15 mgd.

ES.2.6. Charbonneau District

Because of the age and isolated nature of the Charbonneau District, Keller Associates evaluated the water distribution system needs specific to the District service area. The single largest concern for the District area is the risk associated with an earthquake. An earthquake could easily disrupt the single pipeline service that feeds the District. Additionally, the Charbonneau tank that would service the District is at risk of settling during a major earthquake. Settling of the tank is not anticipated to result in a catastrophic failure and release of water, but it would result in loss of use of the reservoir. To address these risks, Keller Associates evaluated tank rehabilitation and replacement options and investigated the possibility of a secondary supply pipeline across the Willamette River (refer to Section 3.3). Constructing the secondary pipeline appears to be the lowest cost and lowest risk alternative. The pipeline alternative will also allow for the abandonment of the existing tank and booster station which are approximately 35 years old.

The Charbonneau District also has a disproportionate amount of older and undersized pipelines that will require replacement within the planning period. Additionally, stricter fire protection standards will require additional hydrants and associated pipelines if the system is going to be brought up to current standards. For a more complete evaluation of the District, refer to Appendix F.

ES.3 RECOMMENDATIONS

ES.3.1 Prioritized Improvement Plan

Recommended improvements resulting from the system evaluation are presented in this section in order of priority. These improvements are necessary to meet the available fire flow standards, provide hydrant coverage, address hydraulic restrictions, correct deficiencies in the physical condition of the existing system components, increase system storage capacity, and provide reliable backup well capability. Also included are development-driven and City-identified capital improvement projects.

Prioritization of the improvements was developed in consultation with City staff. Table ES.3 summarizes the recommended capital improvements.

Priority 1 improvements represent more urgent facility and pipeline improvements, and projects to increase fire flows that are currently less than 1,000 gpm. Priority 1A improvements are recommended within the next 5 years and (for capital projects) are intended to guide development of the water-related, 5-year Capital Improvement Plan (CIP). Priority 1B improvements are recommended by 2022. Priority 2 improvements are those that are needed within the next 20 years, and include lower priority facility upgrades and replacements, and projects to improve fire flows currently between 1,000 and 1,500 gpm. Hydrants needed for residential area coverage not tied to a Priority 1 improvement, are considered Priority 2 improvements.

Priority 3 improvements include facility replacements and pipeline improvements, to be implemented as development or redevelopment occurs. These may include improvements intended to correct marginal fire flow deficiencies, to address poor hydrant coverage in developed industrial/commercial areas, or to provide water to currently unserviced future growth areas.

Each improvement is assigned a numeric identifier that corresponds to the Priority Improvements and Replacements map (Figure 4, Appendix A). The primary purpose for the recommended improvements is also noted in the capital improvement tables, along with an opinion of probable cost.

The various improvements listed in the capital improvement plan may have a portion of the cost attributed to future growth because they are, at least in part, intended to benefit growth. Where this is the case, the incoming development or redevelopment is responsible for the growth portion of the cost through the application of system development charges. To assist in future system development charge evaluations, Keller Associates has estimated the portion of the improvement cost that could be attributed to growth. It should be noted that additional capital improvements to expand the treatment capacity of the Willamette River Water Treatment Plant are not included in Tables ES.3.

TABLE ES.3 – Priority Capital Improvements

ID**	Item	Primary Purpose*	Total Estimated Cost	Growth Apportionment %	Growth Apportionment Cost	Operations Fund	Additional Annual O&M*
Priority 1A Improvements (by 2017)							
Water Supply							
106	Portable Flow Meter (for well tests)	Operations	$ 13,000	0%	$ -	$ 13,000	$ 1,380
Water Treatment and Transmission							
	Surge Tank	Operations	$ 170,000	100%	$ 170,000	$ -	$ 960
	Clearwell Improvements (assume policy change)	Operations	$ -	100%	$ -	$ -	
Water Storage							
121	C Level Reservoir Security and Sampling Improvements	Operations	$ 18,000	0%	$ -	$ 18,000	$ 840
123	Charbonneau Reservoir Chlorine Monitoring	Operations	$ 7,000	0%	$ -	$ 7,000	$ 960
124	Automated Valve at Tooze/Westfall (West Side Tank)	Operations	$ 58,000	100%	$ 58,000	$ -	$ 580
125	3.0 Million Gallon West Side Tank and 24-inch Transmission (in Pre-design)*	Growth	$ 5,840,000	100%	$ 5,840,000	$ -	$ 17,160
126	Elligsen West Tank - Add Altitude Valve	Operations	$ 31,000	100%	$ 31,000	$ -	$ 580
Booster Stations & Turnouts							
140	Charbonneau Booster PRV & SCADA	Operations	$ 22,000	20%	$ 4,400	$ 17,600	$ 920
Water Distribution Piping							
163	16-inch Loop on Barber St. (Montebello to Kinsman)	Growth	$ 371,000	100%	$ 371,000	$ -	$ 320
165	48-inch Transmission on Kinsman St - Barber to Boeckman (in Design)*	Growth	$ 3,960,000	100%	$ 3,960,000	$ -	$ 3,000
	Total Priority 1A Improvements		$ 10,480,000		$ 10,434,400	$ 55,600	$ 26,480
Priority 1B Improvements (by 2022)							
Water Supply							
110	Nike Well Telemetry & Misc. Improvements	Operations	$ 35,000	32%	$ 11,300	$ 23,700	$ 420
111	Wiedeman Well Generator & Telemetry	Operations	$ 98,000	12%	$ 11,300	$ 86,700	$ 2,460
112	Boeckman Well Telemetry Upgrade	Operations	$ 29,000	43%	$ 11,300	$ 14,700	$ 420
113	Gesellschaft SCADA & Instrumentation	Operations	$ 32,500	35%	$ 11,300	$ 21,200	$ 420
114	Elligsen Well Instrumentation	Operations	$ 20,000	29%	$ 5,700	$ 14,300	$ 120
Booster Stations & Turnouts							
143	Charbonneau Booster Flow Meter Vault	Replacement/ Operations	$ 29,000	54%	$ 15,700	$ 13,300	$ 380
Water Distribution Piping							
160	8-inch Upgrade on Jackson St.	Fire Flow	$ 64,000	0%	$ -	$ 64,000	$ 100
161	8-inch Upgrade on Evergreen St.	Fire Flow	$ 83,000	0%	$ -	$ 83,000	$ 200
162	8-inch Loop N. of Seely St.	Fire Flow	$ 8,000	0%	$ -	$ 8,000	$ 100
164	10-inch Extension on Montebello St.	Growth (School)	$ 217,000	100%	$ 217,000	$ -	$ 400
166	8-inch Loop between Boberg St. & RR (north of Barber)	Fire Flow	$ 78,000	0%	$ -	$ 78,000	$ 200
167	8-inch Loop on Boones Ferry (north of Barber)	Operations	$ 19,000	0%	$ -	$ 19,000	$ 100
168	10-inch Loop (Appts E. of Canyon Creek/Burns)	Fire Flow	$ 41,000	0%	$ -	$ 41,000	$ 100
169	8-inch Loop between Vlahos & Canyon Creek	Fire Flow	$ 42,000	0%	$ -	$ 42,000	$ 100
170	8-inch Upgrade on Metolius cul-de-sac	Fire Flow	$ 54,000	0%	$ -	$ 54,000	$ 100
171	8-inch Loop on Metolius private drive	Operations	$ 20,000	0%	$ -	$ 20,000	$ 100
172	8-inch Upgrade on Middle Greens	Hydrant Coverage	$ 68,000	0%	$ -	$ 68,000	$ 200
173	Fairway Village Hydrant on French Prairie	Hydrant Coverage	$ 10,000	0%	$ -	$ 10,000	$ 100
176	16-inch Willamette River Crossing to Charbonneau District	Displace Charb. Tank	$ 1,532,000	0%	$ -	$ 1,532,000	$ 3,600
	Total Priority 1B Improvements		$ 2,476,500		$ 283,800	$ 2,192,900	$ 9,620

* Needed projects previously identified in 2002 Water Master Plan, but not yet completed

** Colored/Bold ID #s are mapped on Figure 4 in Appendix A for reference

NOTE: Costs are in 2012 dollars

TABLE ES.3 - Priority Capital Improvements (Continued)

ID**	Item	Primary Purpose	Total Estimated Cost	Growth Apportionment %	Growth Apportionment Cost	Operating Fund	Additional Annual O&M
Priority 2 Improvements (by 2030)							
Water Supply							
203	Gesellschaft Well Generator	Operations	$ 78,000	0%	$ -	$ 78,000	$ 2,160
205	Charbonneau Well Mechanical Building	Operations	$ 81,000	0%	$ -	$ 81,000	$ 1,800
	Video Surveillance (various wells)	Operations	$ 22,000	0%	$ -	$ 22,000	$ 3,000
Booster Stations & Turnouts							
241	Meter Valve at Wilsonville Rd turnout	Operations	$ 116,000	0%	$ -	$ 116,000	$ 980
Water Distribution Piping							
260	10-inch Extension on 4th St. (E. of Fir)	Fire Flow	$ 69,000	7%	$ 4,900	$ 64,100	$ 200
261	8-inch Loop - Magnolia to Tauchman	Fire Flow	$ 59,000	0%	$ -	$ 59,000	$ 100
262	8-inch Upsize on Olympic cul-de-sac	Fire Flow	$ 44,000	0%	$ -	$ 44,000	$ 100
263	8-inch Loop near Kinsman/Wilsonville	Fire Flow	$ 36,000	0%	$ -	$ 36,000	$ 100
264	10-inch Loop near Kinsman/Gaylord	Fire Flow	$ 82,000	6%	$ 5,200	$ 76,800	$ 200
265	8-inch Upsize on Lancelot	Fire Flow	$ 100,000	0%	$ -	$ 100,000	$ 200
266	Fire Hydrants (main City)	Fire Flow	$ 119,000	0%	$ -	$ 119,000	$ 200
267	Fire Hydrants (Charbonneau)	Fire Flow	$ 46,000	0%	$ -	$ 46,000	$ 100
268	8-inch Loop near Kinsman (between Barber & Boeckman)	Fire Flow	$ 126,000	0%	$ -	$ 126,000	$ 200
269	8-inch Upsize near St. Helens	Fire Flow	$ 26,000	0%	$ -	$ 26,000	$ 100
270	8-inch Loop near Parkway Center/Burns	Fire Flow	$ 66,000	0%	$ -	$ 66,000	$ 100
271	8-inch Loop near Burns/Canyon Creek	Fire Flow	$ 110,000	0%	$ -	$ 110,000	$ 200
272	10 & 8-inch Loop near Parkway/Boeckman	Fire Flow	$ 315,000	4%	$ 12,600	$ 302,400	$ 500
273	12-inch Loop crossing Boeckman	Water Quality	$ 16,000	0%	$ -	$ 16,000	$ 100
274	8-inch Loop at Holly/Parkway	Water Quality	$ 56,000	0%	$ -	$ 56,000	$ 100
275	8-inch Upsize on Wallowa	Fire Flow	$ 62,000	0%	$ -	$ 62,000	$ 100
276	8-inch Upsize on Miami	Fire Flow	$ 86,000	0%	$ -	$ 86,000	$ 200
277	8-inch Extension for hydrant coverage on Lake Bluff	Hydrant Coverage	$ 63,000	0%	$ -	$ 63,000	$ 100
278	8-inch Upsize on Arbor Glen	Hydrant Coverage	$ 92,000	0%	$ -	$ 92,000	$ 200
279	8-inch Loop at Fairway Village	Fire Flow	$ 42,000	0%	$ -	$ 42,000	$ 100
280	8-inch Extension for fire flow - private drive/Boones Bend	Fire Flow	$ 18,000	0%	$ -	$ 18,000	$ 100
281	8-inch Upsize on East Lake	Fire Flow/Hydrant	$ 167,000	0%	$ -	$ 167,000	$ 300
282	8-inch Extension for fire flow on Armitage Pl	Fire Flow	$ 55,000	0%	$ -	$ 55,000	$ 100
283	8-inch Upsize on Lake Point Ct	Hydrant Coverage	$ 56,000	0%	$ -	$ 56,000	$ 100
284	8-inch Loop - Franklin St to Carriage Estates	Water Quality	$ 94,000	0%	$ -	$ 94,000	$ 200
285	8-inch Upgrade on Boones Ferry Rd (south of 2nd St)	Replace/Upsize	$ 44,000	0%	$ -	$ 44,000	$ 100
286	Valves at Commerce Circle & Ridder Rd/Boones Ferry I-5 Crossing	Operations	$ 44,000	0%	$ -	$ 44,000	$ 100
	Total Priority 2 Improvements		$ 2,394,000		$ 22,700	$ 2,371,300	$ 12,140
Priority 3 Development Dependent Improvements (by Build-out)							
Water Distribution Piping							
381	Zone D Booster Station at C Level Tank	Growth	$ 609,000	100%	$ 608,000	$ -	$ 11,000
382	Upsize costs (greater than 8 inches) for future distribution piping	Growth	$ 9,659,000	100%	$ 9,659,000	$ -	$ 39,120
	Total Priority 3 Improvements		$ 10,268,000		$ 10,268,000	$ -	$ 50,120
	TOTAL CAPITAL IMPROVEMENTS (Priority 1-3)		$ 25,628,500		$21,008,700	$ 4,619,800	$ 98,380

* Needed projects previously identified in 2002 Water Master Plan, but not yet completed

** Colored/Bold ID #s are mapped on Figure 4 in Appendix A for reference

NOTE: Costs are in 2012 dollars

ES.3.2 Comprehensive Plan Goals, Policies, and Implementation Measures

The City's Comprehensive Plan provides the context within which the water master plan has been developed. Efforts have been made to solicit citizen input and coordinate with other agencies and organizations consistent with Comprehensive Plan Goal 1.2. The primary goal of the water master plan is derived from Wilsonville's Comprehensive Plan Goal 3.1 providing for infrastructure in general and is as follows:

> To assure that good quality public facilities and services are available with adequate capacity to meet community needs, while also assuring that growth does not exceed the community's commitment to provide adequate facilities and services.

The majority of the water related policies are highlighted in Comprehensive Plan Policy 3.1.5 which states:

> The City shall continue to develop, operate and maintain a water system, including wells, pumps, reservoirs, transmission mains and a surface water treatment plant capable of serving all urban development within the incorporated City limits, in conformance with federal, state, and regional water quality standards. The City shall also continue to maintain the lines of the distribution system once they have been installed and accepted by the City.

Keller Associates recommends one minor addition (underlined below) to the existing Implementation Measure 3.1.5.b:

> All major lines shall be extended in conformance to the line sizes indicated on the Master Plan and, at a minimum, provisions for future system looping shall be made. If the type, scale, and/or location of a proposed development negatively impacts operating pressures or available fire flows to other properties as determined by the City Engineer, the Development Review Board may require completion of looped water lines, off-site facilities, pipelines, and/or facility/pipelines to achieve or maintain minimum pressures or fire flows as a condition of development approval.

Keller Associates also recommends the following additional policies for consideration. Refer to Chapter 7 for recommended implementation measures associated with these policies.

Proposed Policy 3.1.6: The City of Wilsonville shall continue a comprehensive water conservation program to make effective use of the water infrastructure, source water supply and treatment processes.

Proposed Policy 3.1.7: The City of Wilsonville shall maintain an accurate user demand profile to account for actual and anticipated demand conditions in order to assure an adequately sized water system.

Proposed Policy 3.1.8: The City of Wilsonville shall coordinate distribution system improvements with other CIP projects, such as roads, wastewater, and storm water, to save construction costs and minimize public impacts during construction.

ES.3.3 Operations and Maintenance Recommendations

In addition to the capital improvement projects identified in the preceding tables, Keller Associate identified several major repairs and replacements which are summarized in Table ES.4 (see also Figure 4, Appendix A). Additionally, there are several larger routine maintenance activities, recurring system management related projects, and ongoing replacement/rehabilitation activities that are recommended on an annual or recurring basis. These activities are summarized in Table ES.5.

When it comes to maintenance, repair, and replacement activities, the key recommendation is to establish an adequate budget consistent with the selected replacement life span of the facilities. Keller Associates recommends that future user rate evaluations consider needed capital improvements as well as the budget increases needed to fund a 20-year maintenance and replacement program.

TABLE ES.4 - Major Repairs and Replacements

ID#*	Item	Primary Purpose	Total Estimated Cost
Priority 1A (by 2017)			
Water Supply			
100	Nike Well Rehab & Misc. Maintenance	Maintenance	$ 30,000
101	Canyon Creek Well (assumes potential abandonment)	Maintenance	$ 26,000
102	Wiedeman Well Misc. Maintenance	Maintenance	$ 24,000
103	Boeckman Well Rehab Pump	Maintenance	$ 20,000
104	Gesellschaft Building Maintenance	Maintenance	$ 4,500
105	Elligsan Well Compressor & Controls	Maintenance	$ 8,000
Water Storage			
120	Elligsen Res. - Replace Ladder Fall Protection System	Replacement	$ 12,000
123	Cherbonneau Reservoir Reseal between Roof and Wall	Maintenance	$ 4,000
Booster Stations & Turnouts			
141	B to C Booster Replacements	Replacement	$ 21,000
142	Painting & Safety Nets at Turnouts	Maintenance	$ 22,000
Priority 1B (by 2022)			
Water Storage			
127	Replace Sealant at Base of C Level Reservoir	Maintenance	$ 7,000
Booster Stations & Turnouts			
144	Replace Cover on Bums PRV	Replacement	$ 9,000
Priority 2 (by 2030)			
Water Supply			
200	Nike Well New Roof and Trim, Paint	Maintenance	$ 13,000
201	Wiedeman Well Replace Metal Siding	Maintenance	$ 20,000
202	Boeckman Well Pump Motor & Replace Roof and Trim	Replacement/ Maintenance	$ 21,000
203	Gesellschaft Well Roof Maintenance	Maintenance	$ 4,000
204	Elligsen Well MCC Replacement & Building Maintenance	Replacement/ Maintenance	$ 22,000
Water Distribution Piping			
287	Replace service lines - Parkway Ave	Replacement	$ 77,000
288	Replace service lines - Wilson cul-de-sacs	Replacement	$ 227,000
289	Replace service lines - Mariners Drive	Replacement	$ 22,000
290	Replace service lines - Old Town	Replacement	$ 15,000
Water Storage			
220	Paint Elligsen Reservoirs (interior)	Maintenance	$ 460,000
221	Paint C Level Reservoir (interior)	Maintenance	$ 180,000
Booster Stations & Turnouts			
240	Relocate Parkway PRV out of Elligsen Rd Intersection	Replacement	$ 75,000
Future (beyond 2030)			
Water Supply			
300	Nike Well - Replace MCC	Replacement	$ 15,000
301	Wiedeman Well MCC & Building Maintenance	Maintenance	$ 18,000
302	Gesellschaft Well Building Maintenance	Maintenance	$ 5,000
Water Storage			
320	Paint Elligsen Reservoirs (exterior)	Maintenance	$ 310,000
321	Paint C Level Reservoir (exterior)	Maintenance	$ 115,000
TOTAL MAJOR REPAIRS AND REPLACEMENTS			**$ 1,786,500**

* Colored/Bold ID #s are mapped on Figure 4 in Appendix A for reference

NOTE: Costs are in 2012 dollars

TABLE ES.5 – Recurring Maintenance Costs

Activity	Budget	Frequency
Wash exterior of above-ground tanks	$5,000/each	Every 5 years
Clean and inspect interior of tanks	$5,000/each	Every 10 years
Pipeline and valve replacement (coordinate with planned street improvements, 1725 feet/year)	$ 173,000	Annual recommended budget for 20-year planning period
Meter replacement (250 meters/year)	$ 50,000	Annual recommended budget (assumes 20-year life)
Hydrant replacement (10 hydrants/year)	$ 30,000	Annual recommended budget
Well hole and facility upgrades/maintenance	$95,000-$105,000	Annual budget (includes 6 wells)
GIS and water model updates	$ 6,000	Recommended annual budget for 3rd party support
Water Master Plan update	$ 150,000	Every 5 years
Water Management and Conservation Plan (WMCP)	$ 20,000	Every 10 years, beginning 2022
WMCP progress reports	$ 5,000	Every 10 years, beginning 2017

ES.3.4 User Rates and System Development Charges

The scope of this study did not include an evaluation of user rates and system development charges (SDC). The City intends to complete a separate rate study at a later date to address the impacts of the Water Master Plan on the utility rates. The rate study should also incorporate findings from the upcoming water treatment plant master plan. It is anticipated that the Capital Improvement Plan, the identified Major Repairs and Replacements, and the recommended operational and maintenance activities will be used in establishing these fees. Additionally, the estimated percent of each improvement attributed to growth will be useful in developing the growth component of the SDC.

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1.0 EXISTING SYSTEM DESCRIPTION

This chapter provides an introduction to the water system master planning effort and describes Wilsonville's existing water system infrastructure.

1.1 INTRODUCTION

The City of Wilsonville authorized Keller Associates, Inc. to complete a Water System Master Plan in February 2011. The previous master plan was completed in 2002 by Montgomery Watson Harza. Over the course of the last decade, many changes have occurred to the water system, including the completion of a state-of-the-art surface water treatment plant that has displaced the City's groundwater wells as the primary water supply. The primary purposes of this planning effort include the following:

- Update water system demands and demand projections for an expanded study area, including water sales to the City of Sherwood.
- Update the planning criteria used to evaluate system performance and prioritize improvements.
- Update the existing water distribution system hydraulic computer model.
- Evaluate the current condition of the City's water system assets.
- Identify existing and anticipated future deficiencies.
- Update the City's capital improvement plan as it pertains to the water distribution system (pipelines, wells, booster stations, and tanks).
- Provide a review of existing water treatment facilities and identify potential bottlenecks that would need to be addressed to reach a 15 mgd treatment capacity.

Complementing this master plan and performed as a separate task is a Water Management and Conservation Plan that will replace the previous plan completed in 2004.

1.2 EXISTING SYSTEM OVERVIEW

The City of Wilsonville's primary supply comes from the Willamette River. The Willamette River Water Treatment Plant (WRWTP) is a state-of-the-art treatment plant. It produces high-quality finished water that is pumped into 63-inch and 48-inch transmission pipelines. From the transmission pipeline, water is conveyed to the City's distribution through three delivery points, referred to as "turnouts." The transmission pipeline also extends to a delivery point near Tooze Road and Westfall to provide transmission to the City of Sherwood.

Figure 1 (Appendix A) illustrates the existing water distribution system. The City's service area is made up of three pressure service areas or pressure zones. From the turnouts, water flows to pressure zone B, the main pressure zone that services most of the City. The Elligsen reservoirs directly serve this zone. Water is pumped from pressure zone B to zone C (and the C Level reservoir) via the B to C Booster Station. Water to the Charbonneau District (pressure zone A) is delivered across the river in pipeline attached to I-5 Bridge and through pressure reducing valves located inside the Charbonneau booster station. Backup wells, the Charbonneau tank, and the Charbonneau booster station provide system redundancy and emergency water supply to the Charbonneau District.

1.2.1 Water Treatment Plant

The Willamette River Water Treatment Plant (WRWTP) was commissioned to provide a reliable long-term water supply to Wilsonville and the surrounding area. The new treatment facility has allowed the City to continue to grow and has eliminated concerns of declining aquifer levels that resulted from excessive pumping of the City's groundwater wells. The facility was completed in 2002 and has been providing high quality water to the City since it was completed.

Ownership of the water treatment plant is shared with the Tualatin Valley Water District (TVWD). Unit treatment process and facilities initially constructed at the existing treatment plant are generally rated for 15 mgd, with portions of the site such as the buildings and intake structure capable of handling 70+ mgd. The July 2000 Agreement between Wilsonville and TVWD (Wilsonville Resolution No. 1661) specifies that of the first phase plant capacity of 15 mgd, Wilsonville owns 10 mgd and TVWD 5 mgd.

A preliminary evaluation of the treatment plant process capacities is provided in Chapter 4 of this report. The City of Wilsonville, in partnership with the TVWD, will need to complete a more comprehensive treatment facility master plan update within the next few years.

1.2.2 Transmission Pipelines

Wilsonville conveys water from the WRWTP to the distribution system through a 4,000-foot long, 63-inch steel transmission. At Wilsonville Road, the 63-inch transmission line wyes to two 48-inch transmission lines. Each of the 48-inch steel lines has a design capacity of 40 mgd (5 fps design velocity). Currently only one of these 48-inch transmission lines is installed. The final connecting section of this transmission line is currently under design. When completed, this line will carry supply northwest to Sherwood and other turn-outs to the Wilsonville distribution system.

1.2.3 Water Distribution System Piping, Valves, Hydrants, and Meters

The City has approximately 107 miles of waterlines ranging from 2 inches to 63 inches in diameter. According to GIS records, the City also has over 3341 valves, 1005 hydrants, over 5000 meters, and 262 blow-offs. Table 1.1 summarizes the variations in pipe materials and sizes for the distribution system.

Most of the pipe materials are ductile iron or cast iron. Because of the large amount of new growth that has occurred since 1980, the majority of the City's infrastructure is also relatively new. An evaluation of the existing distribution system conditions along with recommended replacement budgets can be found in Technical Memorandum No. 1 located in Appendix B. Chapter 3 summarizes existing pipeline capacity and fire hydrant coverage deficiencies.

TABLE 1.1 - Wilsonville Pipe Material Summary

Pipe Diameter (in)	Pipe Material Lengths Per GIS(ft)							Total by Diameter (ft)	% of Total
	Steel	CU	Ductile Iron	CI	Conc	PVC	Unknown		
Unknown	0	0	3,680	191	0	0	5,332	9,203	1.54%
2"	328	135	415	1,095	0	0	211	2,184	0.37%
2.5"	0	0	546	0	0	0	0	546	0.09%
3"	0	0	5	0	0	0	0	5	0.00%
4"	38	0	16,312	5,233	10	72	74	21,739	3.65%
6"	0	25	67,930	8,213	0	901	5,721	82,790	13.89%
8"	0	0	209,556	8,584	0	1,326	12,999	232,465	38.99%
10"	0	0	27,219	11,848	0	0	808	39,875	6.69%
12"	0	0	93,041	6,620	234	0	828	100,723	16.89%
14"	1,039	0	23,008	2,032	0	0	0	26,079	4.37%
16"	0	0	5,112	0	0	0	0	5,112	0.86%
18"	0	0	32,468	25	0	0	218	32,709	5.49%
24"	0	0	619	0	0	0	1,555	2,174	0.36%
48"	7,053	0	0	0	0	0	0	7,053	1.18%
63"	4,338	0	0	0	0	0	0	4,338	0.73%
Total by Material (ft)	12,796	160	479,909	43,842	244	2,299	27,746	566,995	100.0%
% of Total	2.15%	0.03%	80.50%	7.35%	0.04%	0.39%	4.65%	107.4	MILES

1.2.4 Water Storage

There are four existing storage reservoirs located in the distribution system. These include the two above-ground welded steel Elligsen Reservoirs (constructed in 1970 and 1992) that service the main pressure zone (Zone B), the buried concrete Charbonneau Reservoir (constructed in 1978) that services Zone A, and the above-ground welded steel C Level Reservoir (constructed in 1999) that services the upper pressure zone. Combined, these reservoirs provide approximately 7.6 million gallons of effective storage. A detailed evaluation of the existing reservoir conditions and storage capacities along with recommended improvements can be found in Technical Memorandum No. 1 and Technical Memorandum No. 3 located in Appendix B. A summary of these evaluations and recommendations can be found in Chapter 3.

1.2.5 Backup Wells

The City currently maintains eight groundwater wells. These wells were once the primary potable supply, but since the completion of the WRWTP these wells serve as an emergency backup water supply. These wells include Nike, Canyon Creek, Wiedeman, Boeckman, Geshellschaft, Elligsen, and two additional wells located within the Charbonneau District (Charbonneau wells #2 and #3). Technical Memorandum No. 5, Attachment 1 in Appendix B shows the location of all the well facilities. A detailed evaluation of these wells can be found in Technical Memorandum No. 5 located in Appendix B, and a summary of the findings is presented in Chapter 3 of this report.

1.3 SUMMARY OF PREVIOUS PLANNING EFFORTS

In preparing this master plan update, Keller Associates has built upon previous planning efforts completed by others. A list of documents evaluated as part of this study includes the following:

- City of Wilsonville Well Site Review Report (GSI, 2004)
- Transportation System Plan (Entranco, 2009)
- Transit Master Plan (SMART Transit, 2008)
- Water System Master Plan (MWH, 2002)
- Water Management and Conservation Plan (Wilsonville, 1998 and 2004)
- Waterline Leak Detection Reports (Utility Services Associates, 2000-2010)
- Comprehensive Plan (Wilsonville, 2010 and 2011)
- 20-Year Look (Wilsonville, 2008)
- Water System Surveys (ODHS, 2008 and 2012)
- Planning documents for various developments, including Basalt Creek, Coffee Creek, Brenchley Estates, Graham Oaks, West Side, and Villebois
- Technical Memorandum, Hydraulic Analysis (MWH, Feb 22, 2011)
- Technical Memorandum, Hydraulic Transient (MWH, April 6, 2011)
- Technical Memorandum, Willamette River WTP Disinfection (CT) Analysis (WMH, April 7, 2011)
- Willamette River Water Treatment Plant Master Plan (MWH, 2006)
- Willamette River Water Supply System, Preliminary Engineering Report (MSA, 1998)
- Operations and Maintenance Manuals and record drawings for the water treatment plant and distribution system facilities
- Elligsen, Charbonneau, and C Level Reservoir Inspection Reports (LiquiVision, 2009)
- Elligsen Seismic Evaluation (KPFF, 1998)
- Parks Master Plan (MIG, 2007)

- Development Code (Wilsonville, 2010 and 2011)
- Sherwood Water System Master Plan (MSA, 2005)
- Bicycle and Pedestrian Master Plan (Atla, 2006)
- Economic Opportunity Analsyis Report (Cogen Owens Cogan, Otak, FCS Group, 2008)
- Infrared Electrical Inspection (PMT, 2011)
- Charbonneau Tank Seismic Study (Keller Associates, 2012)

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2.0 DEMAND FORECASTS

This chapter evaluates the existing and future water system demands for residential and nonresidential uses. Water loss and irrigation demands are also summarized.

2.1 METHODOLOGY

Demand forecasts were developed using a combination of current water demands for existing residential and nonresidential users, population and household data, employment and commercial/industrial acreage, anticipated residential and nonresidential growth rates within the defined study area, and estimated per capita demand rates for different user groups.

A review of different methodologies and available data was conducted to determine the best approach to estimate existing and future demands. The data revealed that the 2002 Water Master Plan overestimated a peak day demand for 2010 at more than twice the actual (measured) peak day demand. These previous estimates were made prior to the completion of the water treatment plant and without the benefit of several years of operational data. Keller Associates worked closely with City staff to review actual operational data and develop future demand estimates that reflect historical demand growth but still provide a modest amount of conservatism. In determining existing and future demands, the following methodology was used:

1. Historical system demands for 2005-2009 were used to define the existing average day and peak day water usage for the system.
2. Recent SCADA data was reviewed to develop a 24-hour demand pattern for summer and winter periods. This information was used to estimate the peak hour demand.
3. Where possible, the water meter data were spatially allocated to the distribution system using the City's billing data and geographic information system (GIS). Approximately 85% of current demand could be linked to specific locations. The remaining 15% was distributed to developed parcels based on existing land use and acreage.
4. Existing demands per household and estimated residential units per gross acre were used to project future residential demands.
5. Existing per acre demands for commercial/industrial areas were used to project future nonresidential demands.

2.2 EXISTING DATA REVIEW AND ANALYSIS

Study area acreage, land use (zoning), population, and water usage data were analyzed to determine existing conditions and establish the methodology for

generating demand forecasts. This section summarizes the data, analysis, and background associated with the water demand forecast methodology.

2.2.1 Study Area and Land Use

The study area was developed with input from City planning staff, and is illustrated in Figure 2 (Appendix A). The study area is consistent with the WV Comprehensive Plan and includes the area within the existing Urban Growth Boundary (UGB) and those portions of Clackamas County and Washington County Urban Reserve Areas (URAs) that are anticipated to be incorporated into Wilsonville. These urban reserve areas include Area 6 and Area 7 identified in the 20-Year Look prepared in 2008. The study area is also intended to coincide with the ongoing Transportation System Plan update.

Existing land use is illustrated in Figure 2-2. For those areas not yet developed, anticipated future land use was provided by City planning staff and is illustrated in Figure 2-3. (All figures referenced in this report can be found in Appendix A.)

2.2.2 Population and Household Data

Three sources of historical population data were reviewed as part of this study. These include US Census Bureau data, Portland State University (PSU) certified population estimates, and estimates developed from City of Wilsonville building permit information. The census data is believed to be the most accurate source of population data, but is only available for 10-year increments. PSU provides certified population estimates annually. However, the original PSU estimate for 2010 was 7.5% lower than the year 2010 census estimate. In 2011, after publication of the 2010 census data, PSU revised their 2010 population estimate to be in line with the 2010 census. The discrepancy between the original and revised estimates could be explained in part by the number of people per household assumed in the population estimates and the inclusion or exclusion of unoccupied units. According to census data, the number of people per household actually increased from 2.35 people per *occupied* household in 2000 to 2.48 people per *occupied* household in 2010, contrary to general planning assumptions which predict declining numbers of people per household.

Table 2.1 summarizes historical growth rates and the corresponding compounded 10-year average annual growth rates for 1980 - 2010. Even with the recession conditions that started in 2008, the City of Wilsonville averaged an approximate 3.4% annual population growth rate from 2000 to 2010.

Table 2.2 summarizes the growth data in terms of households for both Federal census data and for Wilsonville Planning Department data.

TABLE 2.1 - Historical Population Summary

Year	Census		PSU Certified Estimates[1]		Wilsonville Planning Department[2]	
	Population	Growth Rate[3]	Population	Growth Rate	Population	Growth Rate
1980	2,950					
1990	7,106	9.2%	7,225		9,030	
2000	13,991	7.0%	14,365	7.1%	14,772	5.0%
2010	19,509	3.4%	19,525[4]	3.1%	18,020	2.0%

1. PSU certified estimates reflect estimated July populations, whereas census data reflects April population.
2. Estimates from building data and an estimated population of 2.15 people per household.
3. Growth rates are calculated average annual growth rates.
4. Adjusted by PSU in 2011. Original estimate (before census) was 18,095.

TABLE 2.2 - Historical Household Summary

Year	Census[1]	Wilsonville Planning Department[2]		
		SFDU[2]	Multi-Family[3]	Total
1990	3,327	2,172	2,028	4,200
2000	6,407	3,316	3,555	6,871
2010	8,487	3,745	4,846	8,591
2000-2010 Annual Growth	2.9%	1.2%	3.7%	2.3%

1. Total housing units includes occupied and vacant housing units.
2. SFDU = single family dwelling unit.
3. Multi-family includes apartments, condominiums, and duplexes. Mobile home units are included in SFDU.

In projecting future residential growth and associated water demand, historical populations were reviewed along with population projections developed as part of the 2002 Water Master Plan, 2004 Water Management and Conservation Plan, the 2006 Transit Master Plan, the 2007 Parks Master Plan, the 2008 20-Year Look, and the 2009 Transportation Plan. These previous estimates assumed annual residential growth rates between 2.42% and 3.15%. Four of the documents use approximately 2.9% as the annual growth rate.

According to the census data, the number of households increased from 6,407 to 8,487 between 2000 and 2010. This corresponds to an average annual growth rate of approximately 2.9% for households. This lower growth rate in households reflects the change in household density (2.34 and 2.48 people per household reported in 2000 and 2010, respectively). Both the 2000 and 2010 household densities based on census data were higher than the 2.15 people per household used by Wilsonville Planning Department. It should also be noted that the estimated vacancy rate from the census data remained relatively consistent at 7.3% and 7.4% reported in 2000 and 2010, respectively.

Since the demands per household are based on actual meter readings, they are felt to be a better basis for future demands than the demand per capita (i.e. person). Assumed household densities were therefore not considered to influence future demand projections. For planning purposes for this study, City staff indicated that **a 2.9% annual residential growth rate should be used for both population and the number of households, corresponding to a 2.9% annual growth rate in residential water demand**. This assumption implies that the household density will continue to be approximately 2.48 people per household.

The build-out population for the study area was calculated to be about 52,400 (21,129 households) using anticipated land use, estimated dwelling units per gross acre, and estimated people per household. Based on these assumptions and the projected growth rate, build-out of the residential areas could occur by the year 2045.

In distributing the new growth in households, Keller Associates used planned dwelling units for those developments that have already completed preliminary or final planning efforts. These include Villebois (approximately 1630 undeveloped units as of December 2009), Frog Pond (estimated 1000 dwelling units from 20-Year Look), and Brenchley Estates (estimated 763 dwelling units). For those future residential areas that currently do not have dwelling unit estimates, the following assumptions were made:

- Undeveloped property zoned for single family dwelling units will average 7 units per gross acre.
- Undeveloped property zoned for multi-family dwelling units will average 20 units per gross acre.
- Where land use does not differentiate between single family and multi-family, it is assumed that 50% of the area will be multi-family and 50% will be single family residential. This produces a composite average of 13.5 units per gross acre.

These assumptions are consistent with historical data and the expectations of City planning staff.

2.2.3 Nonresidential Growth

In the 2002 Water Master Plan, nonresidential use was assumed to have an annual growth rate that varied from 15% for the first 5 years, followed by 7.5% for the next 10 years, then 1% for the final 5 years. However, the actual growth rate from 2000 to 2010 (in terms of the number of water accounts) has been approximately 1.8%, which is lower than the residential growth rate. Additionally, the total nonresidential water usage in Wilsonville has steadily declined over the last five years, despite an increasing number of accounts. While there are significant differences in the number of existing employees reported, the Comprehensive Plan (2010), the previous Transportation System Plan (2009), the Economic Opportunity Analysis (2008), and the 20-Year Look (2008) all show the number of employees essentially doubling over a 20-year period. A doubling in employees equates to an average annual employment

growth rate of about 3.5%, which is slightly higher than the anticipated residential population growth rates assumed in the respective planning documents.

Previous water demand planning efforts looked at water usage per employee and utilized the traffic analysis zone (TAZ) and employment growth concepts developed by Metro in transportation planning efforts as the basis for predicting and distributing existing and future nonresidential water demands. By linking individual meter demands to parcels, Keller Associates was able to utilize land use data and quantify current nonresidential demands per developed acre. This allowed us to quantify per acre demands for Wilsonville land uses – something that the City has not been able to do in the past. Furthermore, these per acre demands include irrigation usage, which is often independent of the number of employees. For these reasons, the calculated per acre demands were felt to be more representative of actual baseline conditions than a corresponding demand per employee. Metro estimates of employee growth were therefore not used, and a per acre demand basis was assumed for future nonresidential development.

For this planning study, an annual **average annual growth rate of 3.5%** will be applied to nonresidential development. Based on the anticipated growth rate, build-out of the nonresidential areas could occur by year 2036. This growth in demand could occur from development of land or from existing developed land. Because of the preponderance of warehouse-type facilities, existing demands per acre are comparatively low to typical published values for industrial areas. In evaluating build-out demands for industrial properties, Keller Associates assumed that existing per acre demands would increase by 25 percent for build-out conditions in all industrially-zoned areas. This was done to allow for increased (e.g. higher density) use and/or redevelopment of existing commercial/industrial parcels, and to better account for a potential reversal of some of the recessionary declines in water usage experienced since 2006. The estimated demands per industrial and commercial acre are presented in section 2.4.2 of this report.

Supplementing assumed nonresidential demand, the City also identified a few site-specific water demand forecasts. Specifically, an increase in the Coffee Creek Correction Facility prison population of 650 inmates was assumed, as were three future large water users (two 0.25 mgd users and one 0.5 mgd user), plus three future public schools.

2.2.4 Water Production Data and Existing Demand Summary

Daily production data was reviewed for the period from 2005 to 2010 to establish annual average, seasonal, and maximum day demand patterns. This data is summarized in Table 2.3. The annual average flow remained relatively constant from 2006-2009 despite an increasing number of water users. Maximum day water demands also peaked in 2008 at 6.6 mgd. All demands (average, peak, etc.) in 2010 were below the previous 5 years, primarily due to current economic conditions. Therefore, 2010 was not considered to be representative of normal usage conditions, and the 2005-2009 average was used to represent current (2010) baseline conditions.

TABLE 2.3 - Finished Water Production Summary

	2005	2006	2007	2008	2009	2010	5-Year Avg (2005-2009)
Yearly Average, mgd	2.81	3.10	3.16	3.13	3.07	2.82	3.05
Minimum Month, mgd	1.85	1.92	2.24	2.12	2.10	2.06	2.05
Maximum Month, mgd	5.22	5.38	5.29	5.48	5.27	5.18	5.33
Maximum Day, mgd	6.08	6.34	6.51	6.60	6.45	5.87	6.40
Peak Hour, mgd	10.34	10.78	11.07	11.22	10.96	9.97	10.87

For comparison purposes, Table 2.4 shows the water production data on a per capita basis. Existing baseline system demands are summarized in Table 2.5 and were calculated by multiplying the 2010 population by the 2005-2009 average per capita demand.

TABLE 2.4 - Finished Water Production Summary (gpcd)*

	2005	2006	2007	2008	2009	2010	5-Year Avg (2005-2009)
Population**	17,753	18,156	18,715	19,290	19,376	19,525	18,658
Yearly Average	158	171	169	162	158	145	164
Minimum Month	104	106	120	110	108	106	110
Maximum Month	294	297	282	284	272	266	286
Maximum Day	343	349	348	342	333	300	343
Peak Hour	582	594	591	582	566	511	583

* gallons per capita per day.

** Certified PSU population for 2005-2009 were adjusted upward approximately 7.5% to reflect the difference between the original 2010 PSU certified estimate (previous to adjusting to reflect 2010 Census data) and the 2010 Census data.

TABLE 2.5 - 2010 Baseline System Demands

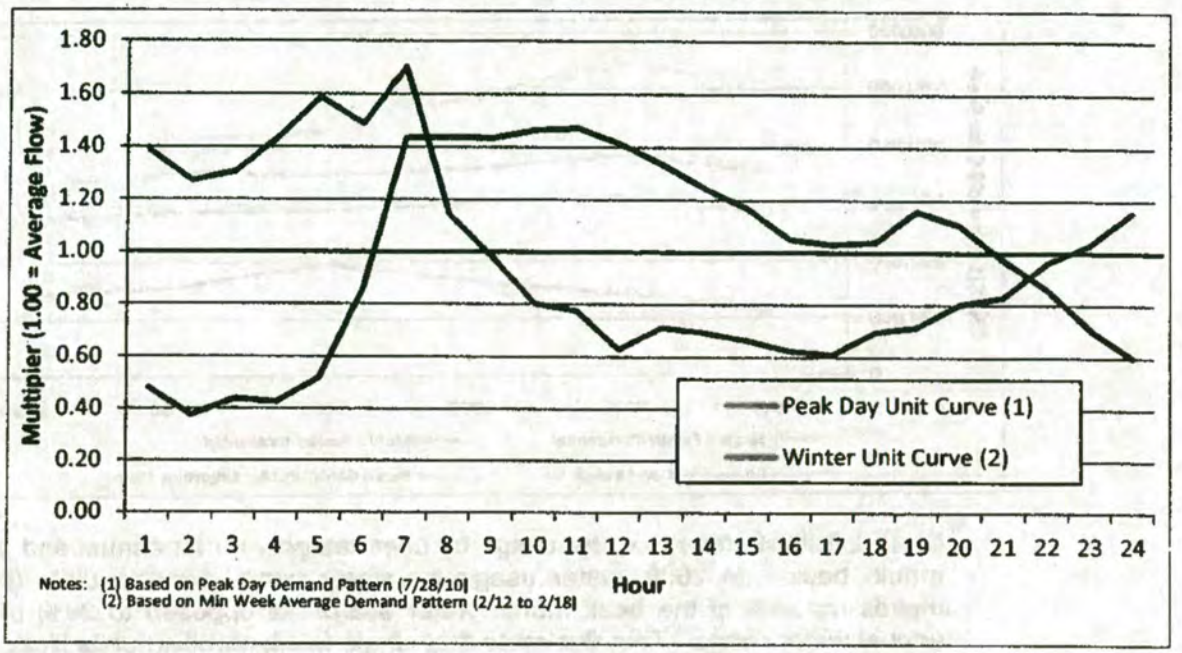
	Per Capita Demand* (gpcd)	System Demand (mgd)
Yearly Average	164	3.20
Minimum Month	110	2.15
Maximum Month	286	5.58
Maximum Day	343	6.70
Peak Hour	583	11.4

*Per capita demands are shown for reference and include nonresidential uses.

2.2.5 SCADA Data and Existing Peak Hour Demands

Peak hour demands were estimated based on demand patterns developed from 24-hour supervisory control and data acquisition (SCADA) data provided by the City. Chart 2.1 illustrates the water usage patterns for the system during the winter and summer periods. For the summer period, the high water usage during the night-time and early morning hours reflect irrigation usage within the city. A peak hour demand equivalent to approximately 1.7 times the corresponding average daily flow is anticipated around 7:00 a.m. during the summer months.

CHART 2.1 - Water Usage Pattern



2.2.6 Water Meter Data and Water Usage per User Category

Water consumption data for various categories of residential and nonresidential users were reviewed, summarized, and evaluated. This data is required reporting data for municipal water management and conservation plans submitted to the Oregon Department of Water Resources, and is used internally to look at major water use trends. Chart 2.2 shows the annual water usage for each user category. The decline in total water system consumption can largely be attributed to significant declines in commercial and industrial water usage, which peaked in 2006 and has declined by 30% since then. The total residential demand has held relatively steady between 2005 and 2010, despite the increasing number of residential users. This is believed to be a result of a combination of factors, including individual water conservation measures, higher water rates, low water use fixtures (low flush toilets, high efficient washers, etc.), and enhanced water awareness.

CHART 2.2 – Annual Water Usage by User Category

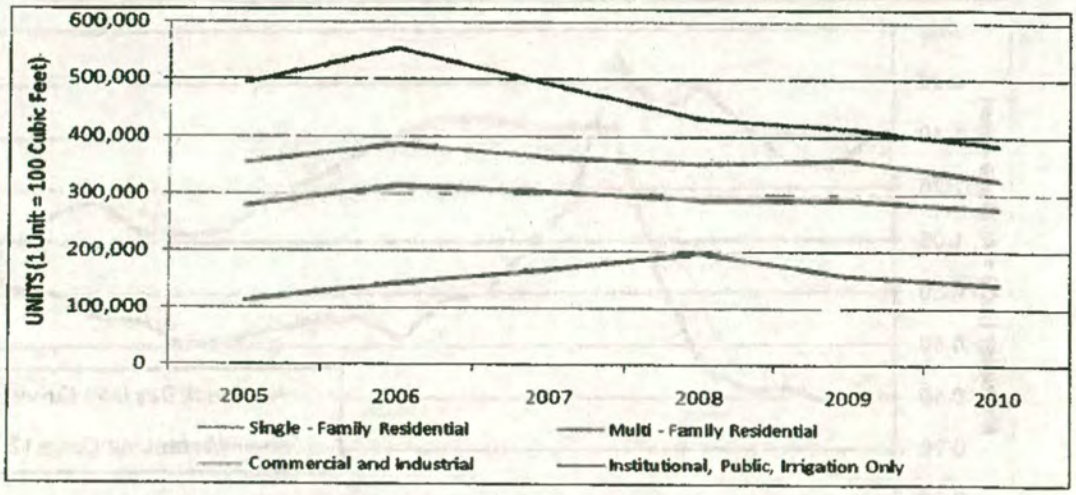
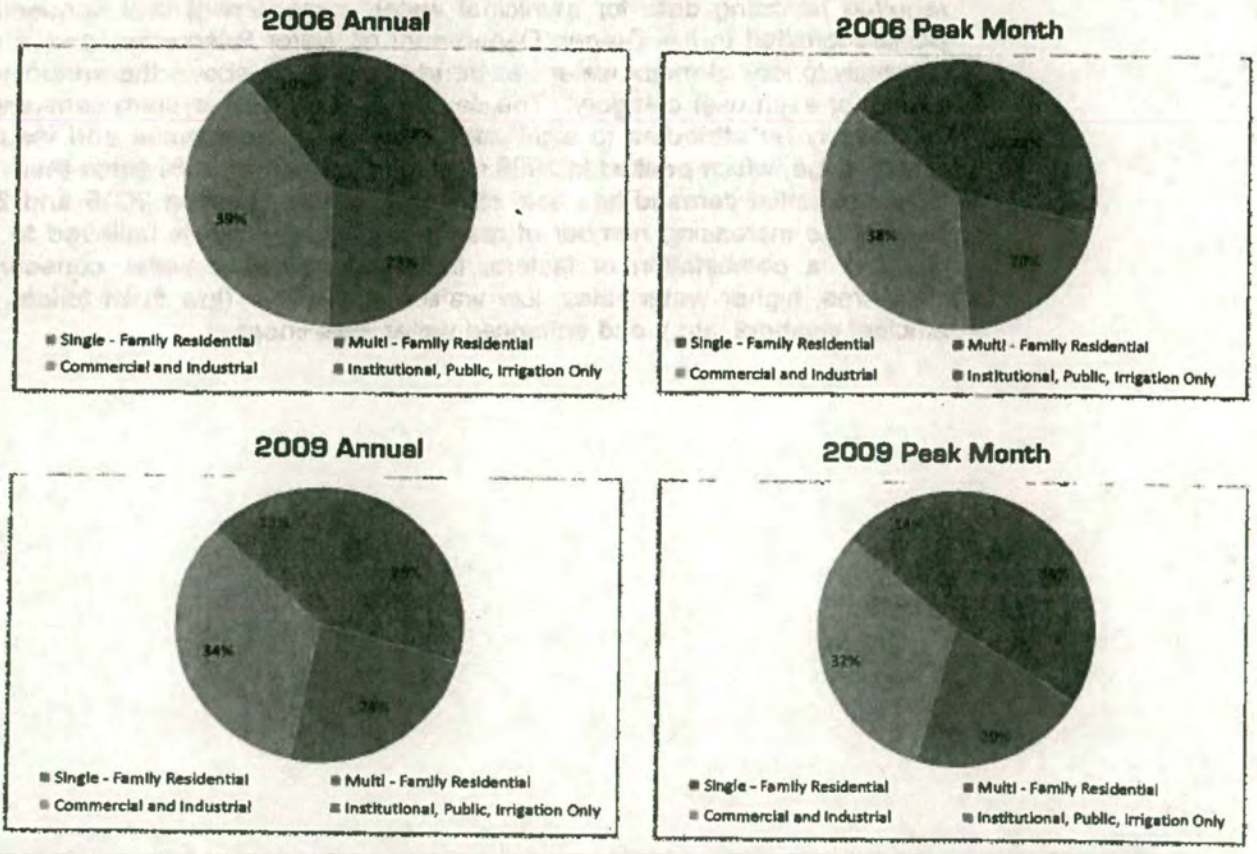


Chart 2.3 illustrates the water usage by user category on an annual and peak month basis. In 2009, water usage for single family dwelling units (blue) makes up 34% of the peak month water usage, as opposed to 29% of the annual water usage. This illustrates that single family dwelling units likely use more irrigation water than other types of water users as a percentage of total water usage.

CHART 2.3 – Annual & Peak Month Water Usage by Category (2006 & 2009)



2.2.7 Water Meter Data and Irrigation Demands

The City of Wilsonville requires separate meters and charges different rates for major irrigation users; however, determining an accurate estimate of total irrigation demand in the city remains difficult. While the City billing system has approximately 380 "irrigation" accounts, these irrigation accounts do not represent all of the total irrigation demand, and in some cases, irrigation accounts reported in the billing software include potable water uses that are fully consumptive (e.g. water bottling plant). This is because water metered through a regular meter is used as the flow basis for sewer billings, while water metered through an irrigation meter is not. Additionally, many accounts, particularly single-family residential properties, are provided both irrigation and potable water through a single meter. This creates calculation difficulties in estimating total irrigation demand.

In reviewing the irrigation account and total demand data from Wilsonville billing database, Keller Associates believes irrigation demands for Wilsonville are best estimated by comparing total water system demand during the winter months to those during the irrigation season. The 2005-2009 average winter-time (January, February, and December months) water system demands are approximately 2.076 mgd. Table 2.6 compares the winter average demands to average monthly system demands for March through November. Based on these comparisons, irrigation is estimated to account for approximately one-third of the total annual water usage and 60% of the demand during the months of July and August (though the percentages are highly variable from month to month).

TABLE 2.6 – Irrigation Water Usage

Period	2005-2009 Average (mgd)	Estimated Irrigation Usage (mgd)	% Irrigation Usage	"Irrigation Only" Accounts (mgd)
January	2.084	0	0%	0.007
February	2.080	0	0%	0.018
March	2.132	0.056	3%	0.027
April	2.187	0.111	5%	0.066
May	2.988	0.913	31%	0.274
June	3.912	1.836	47%	1.140
July	5.157	3.081	60%	1.738
August	5.226	3.151	60%	1.723
September	4.064	1.988	49%	1.362
October	2.520	0.444	18%	0.520
November	2.108	0.033	2%	0.057
December	2.084	0	0%	0.025
Winter*	2.076	0	0%	0.017
Average	**3.044**	**0.988**	**32%**	**0.580**

*Includes January, February, and December

Keller Associates recommends that the City continue efforts to track and quantify irrigation usage within the system. Future water conservation measures may have an impact on irrigation usage, which in turn could affect

utility revenues. User rate structures can also be used to influence water usage patterns. For future demand forecasts, irrigation usage has been built into the demand estimates. The irrigation usage per residential unit was assumed to remain constant over time.

2.3 UNACCOUNTED FOR WATER

All water systems experience some water loss. Unaccounted for water is defined as the difference between water produced and water delivered to the customer, corrected for any unmetered uses such as hydrant flushing, fire fighting, street cleaning, etc. If water loss exceeds 10%, then Oregon Administrative Rules (OAR Division 86) require that the water supplier implement a leak detection program. These rules require that the program be regularly scheduled and systematic, address distribution and transmission facilities, and utilize methods and technologies appropriate to the supplier's size and capabilities. Tracking water loss and developing a leak detection and repair program is required by, and is addressed in more detail in a Water Management and Conservation Plan (WMCP). Wilsonville has, and maintains a leak detection and repair program consistent with their WMCP. This has involved performing leak detection evaluations of 25% of their system annually, regular meter testing and upgrades of the City's larger meters, and repairing leaks as they are encountered. The City also tracks unaccounted-for-water on an ongoing monthly basis.

Unaccounted for water (water loss) for Wilsonville is summarized in Table 2.7. The data indicates unaccounted for water increased substantially beginning in 2007, and presently accounts for approximately 180 MG (17.5%) of the total water produced. This is substantially higher than the 10% standard set forth in OAR Division 86.

TABLE 2.7 – Water Production vs. Loss (MG)

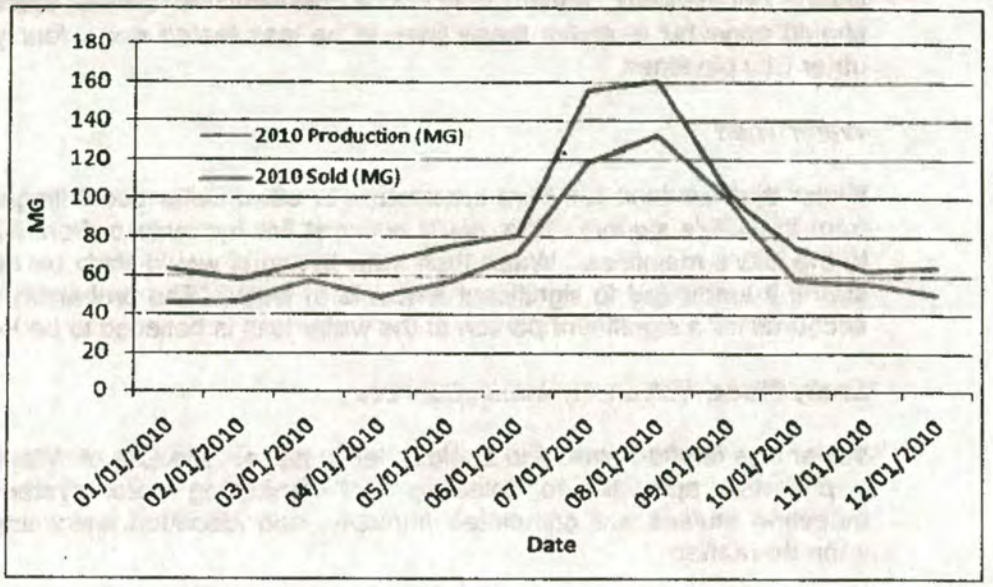
	2005	2006	2007	2008	2009	2010
Produced	1,016	1,130	1,153	1,143	1,120	1,030
Sold*	938	1,060	1,000	961	919	846
Other Uses**	3.5	3.5	3.5	3.5	4.1	3.4
Unaccounted	74	67	150	179	197	181
% Unaccounted	7.3%	5.9%	13.0%	15.7%	17.6%	17.5%

* Includes bulk water sales

** Includes estimated water usage for flushing, sampling, chlorine injection pump operation, street sweeper, and combination line cleaner

Chart 2.4 compares the water sold to that produced and delivered to the water system on a month-by-month basis in 2010. Similar figures were developed for 2006-2009. A significant amount of unaccounted for water appears to occur throughout the year indicating that unaccounted for water is not tied to unmetered irrigation use. During periods of low demand, water loss may make up a larger percentage (although not a large volume) of the total water produced. Keller Associates recommends that the City track volumetric losses. Trending 12-month moving averages will provide the City a better indicator of whether water loss reduction efforts are improving conditions; however, some conclusions can be drawn from the current data.

CHART 2.4 - Water Loss by Month for 2010



The City regularly tracks their water usage and takes active efforts to identify and minimize unaccounted for water. City staff recognize the complexities and challenges of this task and is currently focusing their efforts on understanding and reducing the unaccounted for water. Potential sources of unaccounted for water in the Wilsonville system and their potential for occurrence include the following:

Source	Potential
• Unmetered water users	Low
• Water theft	Low
• Leaky pipes, valves, hydrants, services	Moderate
• Older individual water meters	Moderate
• Meter inaccuracies	High

Unmetered Water Users

The City has gone to great lengths to meter all users, including City-owned facilities. City staff were not aware of any unmetered services within the City when the planning effort began. However, through the process of troubleshooting discrepancies in finished water meter production data, City staff discovered that utility water and onsite irrigation at the water treatment plant was not being accounted for. In March of 2012, water plant staff took physical readings over a week period to approximate utility water usage and potable water usage (excluding irrigation). According to their calculations, the water plant operators could account for approximately 7 million gallons of unaccounted for water annually. A portion of the landscape irrigation would be in addition to this and has not yet been quantified. Keller Associates recommends that all routine water usage be metered and accounted for each month.

Another unmetered source of water usage could results from unmetered private fire lines. According to City staff, most of the older large campuses like Nike, Joes,

Xerox, Ore-Pac, etc. have private fire loops that are not metered. Flushing of their lines is not metered. While it may not be cost-effective to meter these lines, the City should consider requiring these lines to be leak tested every four years similar to other City pipelines.

Water Theft

Water theft could result from contractors or other water users illegally taking water from the City's system. This could occur at fire hydrants or from illicit connections to the City's mainlines. Water theft from hydrants would likely be observed by City staff if it amounted to significant amounts of water. The probability that water theft accounts for a significant portion of the water loss is believed to be low.

Leaky Pipes, Valves, Hydrants, Services

Water loss is often attributed to older, leaky pipes. The City of Wilsonville has taken a proactive approach to detecting and eliminating water system leaks. Leak detection studies are completed annually, and identified leaks are typically fixed soon thereafter.

In investigating unaccounted for water, the City should also be aware that there is a realistic lower limit of water loss that is generally not cost-effective to go below. Keller Associates used the AWWA water audit method for calculating unavoidable annual real losses at approximately 50 million gallons per year, which represents about 5% water loss for 2010. The City of Wilsonville should consider this as a reference value representing the attainable technical low limit of leakage.

Meter Inaccuracies

Meter accuracy, particularly for large meters, is often responsible for the largest percentage of unaccounted for water. The City has taken a proactive approach to improve meter accuracy. According to City staff, all individual flow meters 3-inches in size and larger have been tested, calibrated, and repaired within the past few years.

However, further data review brought into question the accuracy of the finish water meter at the water treatment plant, the large meters at the three distribution system turnouts, and the accuracy of previous water loss calculations. Some history on the finish water meter is summarized as follows:

- According to plant records, the finish water meter was reading 8% low prior to September 2006 and some meter adjustments were made. This may explain why the water loss appears to have jumped in 2007.
- Sometime after the adjustments were made in 2006, operations staff observed that the raw water flow values measured slightly less than the finished water flow. After several efforts to understand this difference, no further adjustments were made to either flow meter.
- Keller Associates compared plant finish water meter readings to the totalized flow entering the Wilsonville distribution system as recorded by the flow meters at the two active delivery points (Wilsonville and Kinsman turnouts)

during this period. The 2010 peak week and minimum weekly flows were compared. The finish flow meter recorded values that were higher than the total recorded at the two delivery points by 6% and 4% for the low flow and high flow periods, respectively. A subsequent analysis of December 2011 data (post additional meter calibration completed in the fall of 2011) shows that the finish water meter was still about 6% higher than flow recorded at the turnouts. Onsite utility water usage is believed to account for less than 1%, and the unmetered portion of the irrigation usage has not yet been quantified.

- Keller Associates initially reviewed one week of SCADA data in an effort to compare the metered flow to the calculated flow based on a change in volume. This analysis suggested that the meter readings were actually about 2.5% low. However, it was also recognized that this value varied from 1% low to 3.8% low for different days, suggesting that there may be sources of error that are not accounted for. A subsequent analysis of December 2011 data shows that the finish water meter was reading between 2.4% and 3.0% higher than measured volumes calculated using clear well depths.

- Based on the data available, it appears that the finish water meter is likely reading about 3% higher than it should. Keller Associates recommends that the City continue to scrutinize water meter data as part of ongoing water balance / water loss calculations.

In September 2011, City staff discovered that one of the meters for a large school had failed sometime in 2008. A review of the monthly meter readings for this account suggests that meter readings for most of 2008 were not accurate. A value of zero was recorded for every month since September 2008. Based on water consumed from this single account in 2007, it is estimated that close to 8.6 million gallons of water were not accounted for in 2009 and 2010. *Adjusting Table 2.6 to reflect this water usage, account for 7 MG utility water usage at the water plant, and to reflect a 3% error in the finish water meter readings would result in an estimated % unaccounted for water of about 13% for 2009-2010.* This illustrates the importance of tracking changes in water usage for large users and regularly testing large water meters.

In summary, Keller Associates believes that the actual water losses are likely less than calculated (primarily as a result of meter accuracies), but may still exceed the 10 percent standard. The City has been proactive in their water loss reduction program, and Keller Associates recommends that the City continue to take measures to identify and remove sources of water loss. Annual leak detection studies, water meter testing and replacements, and ongoing water loss audits should continue.

If these efforts do not produce the desired results, Keller Associates recommends that the City partition off portions of the City and compare metered water usage to that delivered for various regions within the City. For many regions, this may be accomplished with little capital investment. For example, a new water meter is recommended to measure the water going into the Charbonneau District. Comparing monthly water meter readings from this master meter to the total water usage from all the individual meters within the District would allow the City to quantify the water loss for this area and compare the water loss for this area to the system as a whole. Similarly, by closing valves at strategic locations, the City could

use existing turnouts to supply certain regions of the City. Care should be made to notify the fire authority so that valves could be opened in the event of a fire.

For future demand forecasts, Keller Associates has assumed that the water loss reduction programs will continue, and water loss will only grow in proportion to the increase in water system demands.

2.4 WATER DEMAND FORECAST

Consistent with the methodology presented earlier, separate water demand forecasts were prepared for residential and nonresidential users, and for supplemental supply to the City of Sherwood. These are detailed in the subsections below.

2.4.1 Residential Demand Forecast

The average annual residential demand (including single family and multi-family users) for 2005-2010 has consistently made up 50-53% of the total system demand. Table 2.8 summarizes the estimated demands for single family and multi-family residential dwelling units. The number of single family dwelling units was estimated from 2010 meter account data. Because many multi-family users, such as large apartment complexes, are metered as single accounts, the total multi-family units was estimated by subtracting the number of single family accounts from the 2010 Census data showing 8487 households. The estimated number of multi-family households is consistent with estimates prepared by the Wilsonville staff during the first quarter of 2010.

For reference, Table 2.8 also lists current residential demands per unit compared to the previous planning document (2002 Water Master Plan). Daily average demands have not changed much from previous estimates. However, water usage data shows that the estimated maximum day water usage for this study is considerably lower than previous assumptions.

TABLE 2.8 - Residential Demands per Dwelling Unit (gallons/day)

	Single Family	Multi-Family
Number of Units	**3756**	**4731**
Average Daily Demand		
Current Planning Document	**247**	**162**
Compare to 2002 WMP	251	161
Maximum Day Demand		
Current Planning Document	**606**	**283**
Compare to 2002 WMP	866	375

In estimating future demands, single family and multi-family dwelling units were both assumed to grow at a rate of 2.9% until build-out of their respective parts of the study area.

2.4.2 Nonresidential Growth Forecast

Water system demands were summarized by land use for commercial and industrial areas after linking the water system demands (including all irrigation accounts) to parcels in Wilsonville. Table 2.9 summarizes the results. Maximum day demands were approximated based on system peaking factors (Maximum Day is approximately 120% of the Maximum Month demand). Demands also reflect the 2005-2009 average industrial/commercial usage.

TABLE 2.9 - Commercial / Industrial Demands per Acre

Parameter	Commercial	Industrial
Developed Area (acres)	300	830
January Demand (gpm/acre)	0.59	0.28
Maximum Month Demand (gpm/acre)	2.3	0.46
Maximum Day Demand (gpm/acre)	3.3	0.84

It should be noted that the industrial values are relatively low compared to other communities, which generally have industrial demands exceeding commercial demands on a per acre basis. The relatively low industrial demand per acre likely reflects the preponderance of distribution warehouse type uses encountered in Wilsonville. For build-out, industrial demands were increased by an additional 25 percent to reflect redevelopment, additional infill, and higher water users within existing structures.

Additionally, at the direction of City Engineering staff, three large future industries were also included in future water usage projections. These include a 0.5 mgd industrial user in the first five years, a 0.25 mgd industrial user by year 10, and another 0.25 mgd industrial user by year 15.

2.4.3 Sherwood Water Demands

In addition to supplying the existing water demands for the City of Wilsonville, the existing treatment plant and Wilsonville transmission and system will provide a guaranteed potable water supply to the City of Sherwood. This demand is anticipated to grow from a contractually specified peak of 2.5 mgd in 2011-2012 to a peak of 5.0 mgd by 2015. Sherwood demand is expected to vary by month and season; however, for modeling purposes, the daily demand was assumed to be constant, so no peak hour or peak day adjustment factors are applied to Sherwood demands. The 5.0 mgd demand is also assumed to eventually increase to 20.0 mgd at build-out.

2.4.4 Summary of Demand Forecast

Table 2.10 summarizes the future demands for residential and nonresidential users, future industry, and the City of Sherwood.

TABLE 2.10 – Future Water System Demands

Scenario	2010	2015	2020	2025	2030	Build-out*
Population	19,525	22,525	25,986	29,979	34,585	52,400
Households	7,873	9,083	10,478	12,088	13,946	21,129
Residential (increase of 2.9% per year)						
Average, mgd	1.70	1.96	2.26	2.60	3.00	4.21
Minimum Month, mgd	1.14	1.31	1.52	1.75	2.02	2.83
Maximum Month, mgd	3.01	3.48	4.01	4.63	5.34	7.48
Peak Day, mgd	3.62	4.17	4.82	5.56	6.41	8.74
Peak Hour, mgd	6.16	7.10	8.19	9.45	10.9	14.86
Nonresidential (increase of 3.5% per year)						
Average, mgd	1.50	1.79	2.12	2.52	2.99	3.09
Minimum Month, mgd	1.01	1.20	1.43	1.69	2.01	2.08
Maximum Month, mgd	2.57	3.05	3.62	4.30	5.11	5.27
Peak Day, mgd	3.08	3.66	4.35	5.16	6.13	6.35
Peak Hour, mgd	5.24	6.23	7.40	8.79	10.4	10.80
Other Miscellaneous						
3 Future Large Industries	0.00	0.50	0.75	1.00	1.00	1.00
Sherwood	0.00	5.00	5.00	10.0	10.0	20.0
Total System						
Average, mgd	3.20	9.24	10.1	16.1	17.0	28.3
Minimum Month, mgd	2.15	8.01	8.69	14.4	15.0	25.9
Maximum Month, mgd	5.58	12.0	13.4	19.9	21.4	33.8
Peak Day, mgd	6.70	13.3	14.9	21.7	22.5	36.1
Peak Hour, mgd	11.4	18.8	21.3	29.2	32.3	46.7

* Residential demands reflect larger proportion of multi-family households at build-out, with historically lower usage than single family households

KELLER associates

3.0 SYSTEM ANALYSIS

This chapter documents the planning criteria used to evaluate the existing distribution system, summarizes existing deficiencies, and presents recommended improvements.

3.1 PLANNING CRITERIA

Planning criteria include water system demands (established in Chapter 2), planning period, the study area, and the criteria by which the existing distribution system is evaluated.

Planning Period

Planning efforts focused primarily on two planning periods – existing and buildout. Existing conditions are based on 2010 conditions. Buildout was estimated to occur in 2038. Demands were calculated for intermediate planning periods to assist in phasing of improvements such as water supply and storage needs.

Study Area, Land Use, and Population

The service area, land use, and population assumptions for this report are outlined in Chapter 2.

Evaluation Criteria

The evaluation criteria were developed with input from City staff. A comparison of the evaluation criteria used for this study to that assumed in the previous master plan is illustrated in Table 3.1 on the following page.

Minimum pressure criteria are intended to protect human health during emergencies and avoid low pressure complaints from customers. Higher pressure criteria are intended to protect plumbing fixtures and existing mainlines.

Desired fire flows were developed with input from the local fire authority. Providing mechanical redundancy (or firm capacity) ensures that the City is able to deliver water during high demand periods even when any one of the pumps servicing the area is off-line.

Backup source and storage evaluations are evaluated together, recognizing that the existing backup wells can offset emergency storage requirements during an extended plant shutdown.

Equalization storage, or peaking storage, refers to the storage required to meet peak hour demands in excess of the supply pumping capacity. For planning purposes, the supply pumping capacity is assumed to be equal to the average peak daily demand. Operational storage is the volume of water drained from the reservoirs during normal operation before the water sources begin pumping to refill the reservoirs.

TABLE 3.1 - Planning Criteria

Planning Criteria	Keller Assoc. (2012)	Previous WMP (2002)
Pressures		
Min pressure while delivering MDD + Fire, psi	20	20
Min pressure while delivering PHD, psi	40	40 (typ. demands)
Max pressure without pressure regulator, psi	80	Not Specified
Max pressure in mainlines (w/o special pipe), psi	120	100 (typ. demands)
Velocities		
Max for pipes < 12" under PDD+fire, or PHD, fps	10+	10*
Fire Flows		
Minimum for new residential areas, gpm	1500	1500
Target for commercial/industrial areas, gpm	3000	Not specified
Power Outage		
System delivery of ADD + fire?	Yes	Yes
Mechanical Redundancy		
Deliver PHD with largest pump out of service?	Yes	No (only MDD)
Deliver MDD+Fire with largest pump out of service?	Yes	Not specified
Backup Source		
Deliver ADD to Charboneau District with pipe failure?	Yes. 2+ days	Not specified
Deliver ADD demands with WTP out of service?	Yes. 2+ days	Yes
Storage		
Equalization storage for demands in excess of MDD	Yes (14.6% calculate from SCADA)	Yes (assumed at 25% of MDD)
Operation storage	10% of each reservoir	None included outside of WTP clearwell
Fire storage**	3000 gpm for 4 hours	3000 gpm for 4 hours
Emergency storage***	2 times ADD	2 times ADD
Can tank be taken offline for maintenance?	Yes	Yes (zone C supply from Tualatin Intertie)

*Previous report assumed all pipes less than 8" in diameter were inadequate for fire protection; Keller allows 10+ fps for fire

**Per local fire authority

***Emergency storage needs can be reduced using wells equipped with standby power.

Abbreviations:

WMP = Water Master Plan
MDD = Maximum Day average Demand
PHD = Peak Hour Demand
ADD = Average Day Demand
WTP = Water Treatment Plant
psi = pounds per square inch
fps = feet per second
gpm = gallons per minute

3.2 HYDRAULIC MODEL DEVELOPMENT

3.2.1 Physical Modeling Inputs

The City of Wilsonville previously constructed and maintained an H20Net water model. This modeling platform is an Innovyze product which operates in AutoCAD. In 2008, the City elected to update and migrate the existing model to a GIS platform product, also by Innovyze, called InfoWater v. 8.1.

In 2011 Keller Associates reviewed the existing model against the best available mapping and information on the city water system. This review uncovered a number of inconsistencies and gaps in the water model. With field investigations and guidance from City staff, the main lines and other major components of the water system were corrected in the water model to reflect a more accurate picture of the system's current arrangement. Numerous "dummy" pipes used in certain modeling methods were removed from the model for clarity.

Pipe materials and their associated roughness values were also reviewed and corrected based on input from City staff. A Hazen-Williams roughness coefficient of 100 was assigned where pipe materials could not be reasonably determined. This value is generally considered an appropriately conservative value given the possible age and material of the water lines in Wilsonville's system.

Many of the existing model elevations were found to be inconsistent with the City's 2-foot LIDAR ground elevation contours. The physical elevations of the modeled junctions affect many aspects of the modeling, including calibration, reported pressures, and fire flow evaluations. In light of the potential impacts, the junction elevations were corrected to the LIDAR data.

Other system components such as pumps, pressure reducing valves, and storage reservoirs were compared to the available record drawings, curves, and operation manuals. These elements were also updated and corrected in the model to reflect the best available data.

3.2.2 System Demand Allocation

Keller Associates linked water consumption data from the City's billing database to the GIS parcel dataset. Although challenging, this accurately allocated demand quantities and locations in the water model. Approximately 85% of the water demands could be linked to specific locations, and the remaining 15% was distributed to developed parcels based on existing land use, acreage, and billing account type (i.e. industrial, commercial, etc.)

To facilitate a more seamless update of demand allocation in the future, it is recommended that the City create a meter dataset. Each meter in the GIS meter dataset and the billing database should be assigned a unique numeric meter ID. This common meter ID between the two sources of information will allow for 100% correlation with relatively little effort. It is recommended that the City continue their efforts to identify each account type as industrial, commercial, multi-family, single family, irrigation and so forth.

3.2.3 Model Calibration

To ensure the computer model results are consistent with observed field conditions, the model is calibrated to field observed test data.

A series of 11 field tests was performed through a coordinated effort with City staff and Keller Associates. The purpose of the testing is to observe the system reaction to higher than usual water demands. The demands were created by opening multiple fire hydrants at strategic points throughout the water system. Pressure changes at observation hydrants were observed and recorded, along with boundary conditions at turn-outs (pressure reducing valves delivering flow from the Water Treatment Plant to the distribution system), tanks, and booster pumps. These demands and boundary conditions for each test were then simulated in the model to see if the model reacted like the system. The calibration results shown in Appendix D indicate that the current model matches within 2-3 psi of field observations.

The calibrated water model was employed in all existing and future scenario evaluations related to this study. The scenarios explored and their results are detailed in section 3.5 *Distribution System Evaluation*.

Although primarily developed for this study, the water model can serve as a powerful planning and system management tool for the City of Wilsonville. It is recommended that the City consider regularly updating, running, and calibrating the water model. To do so, the City will need to purchase the Info Water Software.

3.3 STORAGE EVALUATION

In evaluating the existing storage reservoirs, Keller Associates calculated the existing effective storage, and required storage volumes, and documented the condition of the existing storage reservoirs.

Physical Conditions

In general, three of four existing storage reservoirs are in good shape, and will remain serviceable throughout the 20-year planning horizon. An evaluation of the conditions and recommended upgrades to the existing storage facilities can be found in Technical Memorandum No. 1 (Appendix B). A seismic evaluation of the Charbonneau Tank (Appendix H) shows that this facility is at risk during a major earthquake. Because of the large expense associated with rehabilitating the tank, Keller Associates recommends that the tank eventually be abandoned. Additional discussion about the Charbonneau tank is contained in this section and in Appendices F and H.

Existing and Future Storage Needs

Table 3.2 summarizes the effective available storage for each of the City's existing reservoirs. The effective storage was calculated using available record drawings and reflects the useable volume of water in the storage reservoir. Dead storage (the volume of water below the pipe outlet) was excluded from the available storage supply. Additionally, a one foot freeboard was assumed between the maximum

water surface elevation and the overflow elevation. This freeboard prevents the City from inadvertently overflowing the tank and wasting water.

TABLE 3.2 – Existing Effective Storage

Storage Reservoir	Volume[1] (MG)
Elligsen B-1 West	1.98
Elligsen B-2 East	2.97
C Level	1.96
Charbonneau	0.70
WTP Clearwell[2]	1.08
Total without Clearwell	*7.60*
Total with Clearwell	*8.67*

1. Assumes 1 foot freeboard to overflow. Excludes dead storage volume.
2. Assumes 92.9% of the minimum clearwell volume for summertime worst-case conditions when plant is operating at capacity of 15 mgd.

A portion of the clearwell volume at the water treatment plant was also considered in calculating existing available water storage. Under emergency conditions when the treatment plant may be cut off from the river supply, it is assumed that the clearwell volume containing the treated water at the water treatment plant would still be available. While the clearwell volume provides 2.5 MG of storage, this storage volume can fluctuate substantially depending on plant operations. However, a minimum clearwell volume is always maintained to ensure adequate chlorine contact time prior to delivering treated water to the distribution system. In estimating the available water for the City of Wilsonville during an emergency, Keller Associates assumed the worst-case condition which corresponds to the minimum clearwell volume necessary for treatment during a summer maximum day period (1.16 MG per original CT analysis, see Table 4.1. Note that this value could vary depending on future tracer study results). According to City staff, the City of Wilsonville is entitled to 92.9% of the available volume based on the portion of the clearwell construction costs that were funded by the City (Resolution 1661).

Table 3.3 summarizes the storage needs for 2010 and 2030. The total storage required is anticipated to increase from 9 MG to almost 18 MG by 2030. These storage volumes assume that the existing backup wells would not supplement storage water during a two-day emergency event.

TABLE 3.3 – Storage Needs (No Wells)

Storage Component	Year 2010	Year 2030
Operating Storage[1] (MG)	0.87	1.17
Peaking Storage[2] (MG)	0.98	1.75
Fire Storage[3] (MG)	0.72	0.72
Emergency Storage[4] (MG)	6.40	14.00
Total Storage Required (MG)	*8.97*	*17.64*
Less Storage Available (MG)	*-8.67*	*-8.67*
Storage Need (MG)	**0.30**	**8.97**

1. Operating storage recommendation is 10% of effective volume. For year 2030, it includes an additional 10% storage for the currently proposed 3 MG new tank.
2. Based on Wilsonville demand pattern, assumes supply equals max day demand.
3. Assumes 3000 gpm for 4 hours.
4. Assumes City desires to provide 2 times the average day demand

Although the above analysis indicates a current deficiency of 0.30 MG, the conservative nature of the analysis assumptions would not indicate that a current storage problem exists.

Potential Impacts of Backup Well Supply on Storage Needs

During an emergency event, the City's eight backup wells can supplement water demands. With the exception of the Charbonneau District wells, these wells all pump into the Level B pressure zone. Technical Memorandum No. 3 (Appendix B) documents several scenarios that were considered along with their potential impact on the storage need. With the preferred scenario (includes removing Nike and Canyon Creek wells from the potable system), the 2030 projected storage needs is reduced from 8.95 MG to 2.05 MG.

For the 20-year planning period, the cost to maintain these six wells as a backup supply is between a third and one half the cost of constructing the equivalent amount of storage. Additionally, it should be noted that another benefit of maintaining the backup wells is that in the event of an extended interruption of the water treatment supply, the wells would be able to provide a critical level of service indefinitely as long as fuel could be obtained to run the generators.

Charbonneau Tank

Concurrent to this study, a separate seismic evaluation of the Charbonneau Tank and was completed (see Appendix H). The geotechnical investigation completed as part of this evaluation showed that the tank is at risk during a major earthquake. Mitigating these risks would be almost as expensive as construction a new tank. Given the age of the existing tank (constructed in 1978), rehabilitating the existing tank was not felt to be a cost-effective solution.

As an alternative to replacing the existing tank, Keller Associates also investigated displacing the tank. By providing a secondary 16-inch transmission pipeline to the Charbonneau District via a directional bore under the Willamette River, the City could more effectively use available storage in the B Level pressure zone to service the District. This pipeline could provide the needed fire flows and system

redundancy currently provided by the Charbonneau tank and booster facilities. Displacing the tank would also eliminate energy inefficiencies associated with cycling water through the existing tank (currently requires water that enters the tank to be pumped again into the system). Additionally, operation and maintenance costs associated with the tank and booster facility could be reduced or eliminated. A life-cycle cost comparison shows that the secondary pipeline option will be a better long-term solution for the District (see Appendix E for life cycle costs and Appendices F and G for additional discussion). A summary comparison of the alternatives is shown in Table 3.4. The 16-inch pipeline alternative is a lower-cost alternative when looking at a 20+ year planning period.

TABLE 3.4 – Charbonneau Storage Alternatives

Option	Description	Capital Cost	Annual O&M Cost
1A	Rehabilitate Existing Tank	$ 1,829,000	
	Booster Station & Misc. Upgrades	120,000	
		$ 1,949,000	$ 24,100
1B	Replace Existing Tank	$ 2,284,000	
	Booster Station & Misc. Upgrades	120,000	
		$ 2,404,000	$ 24,100
2	New 16-inch Pipeline Across River	$ 1,532,000	
	Additional Storage in Zone B	700,000	
		$ 2,232,000	$ 3,600

Displacing the Charbonneau Tank will increase the future storage needs by an additional 0.7 MG. This results in a storage need of 9.69 MG if the wells are not accounted for, and 2.77 MG if the preferred wells are accounted for.

Storage Recommendations

Keller Associates understands that the City has already identified a tank site located near the intersection of Tooze and Baker Road, west of the City. The proposed site is capable of holding two reservoirs. The City has already begun pre-engineering to move forward with an initial 3.0 MG storage reservoir, with a second reservoir to follow in the future. This storage reservoir will be located in pressure zone B and will also float on the water system (same overflow elevation as the Elligsen tanks). By maintaining all but the Nike and Canyon Creek wells as backup potable water suppliers, the proposed 3.0 MG storage should be adequate for the City's projected 20-year need, even with the future abandonment of the Charbonneau tank.

Keller Associates further recommends that the City look closely at operation controls in planning and designing the new tank. During portions of the year, the City may want to increase the volume between pump on and off set points. This will ensure a higher tank turnover, which will reduce the potential for water stagnation. Because of differences in locations, size and transmission piping, it is likely that the new water tank will not fill at the same rate as the Elligsen tanks. Altitude valves may be needed at the new tank site and potentially at the existing Elligsen tanks.

3.4 PUMPING FACILITIES

In evaluating the existing booster stations, Keller Associates documented the condition of the existing storage reservoirs and compared firm pumping capacity to existing and project peak demands. Firm capacity refers to the pumping capacity with the largest pump offline.

Physical Conditions

In general, the booster pump stations are in good condition and well maintained, with some components of the Charbonneau Booster Station reaching the end of their useful life. An evaluation of the conditions and recommended upgrades to the existing pumping facilities can be found in Technical Memorandum No. 1.

Capacity

The Charbonneau Booster Station and the B- to- C Booster Station are currently the only two pumping facilities in the distribution system.
The Charbonneau Booster Station runs only periodically because the Charbonneau District can usually receive needed flows and pressures through the PRV connection from Zone B. The Charbonneau tank can be used to augment supply from Zone B. The pumps can be manually turned on (process not currently automated) if the flows and pressures from zone B cannot keep up with the demand in Zone A. The booster station consists of one 40-hp pump and two 75-hp pumps. These pumps pull water from the Charbonneau tank and pump into the Charbonneau system upstream of the PRV. The 40-hp pump can deliver roughly 300 gpm, and the 75-hp pumps can deliver roughly 750 gpm each at the target head of about 300 feet. According to City staff, only one 75-hp and the 40-hp pump have ever been exercised at one time.

The B-to-C Booster Station works together with the C Level Reservoir to meet the pressure and flow needs of the C Level pressure zone. The booster station consists of one 7.5-hp pump, two 25-hp pumps, and one 50-hp pump. These pumps each deliver 50 gpm, 400 gpm, and 800 gpm respectively.

Both booster facilities have a firm capacity greater than what is anticipated to be needed in the 20-year planning period.

Future Booster Station(s)

As development continues to the northeast portion of the study area, another booster station (C-to-D Booster Station) will be required to deliver the necessary pressures. Keller Associates proposes that this booster facility be located near the C Level tank.

An additional temporary booster station may be required to service a portion of land located in the northern reach of the study area and west of the interstate. This area ultimately can be served by the C Level pressure zone, but will require a pipeline crossing of the interstate. A small temporary booster station could allow for development in this area prior to construction of the necessary pipelines connecting the region to the C Level pressure zone.

3.5 DISTRIBUTION SYSTEM EVALUATION

3.5.1 Existing System Evaluation

The physical condition of the existing distribution system was evaluated in connection with this study. The results of this evaluation can be found in Technical Memorandum 1. In general, the distribution system is in good condition. This section summarizes the hydraulic condition of the system.

Available Fire Flow Analysis

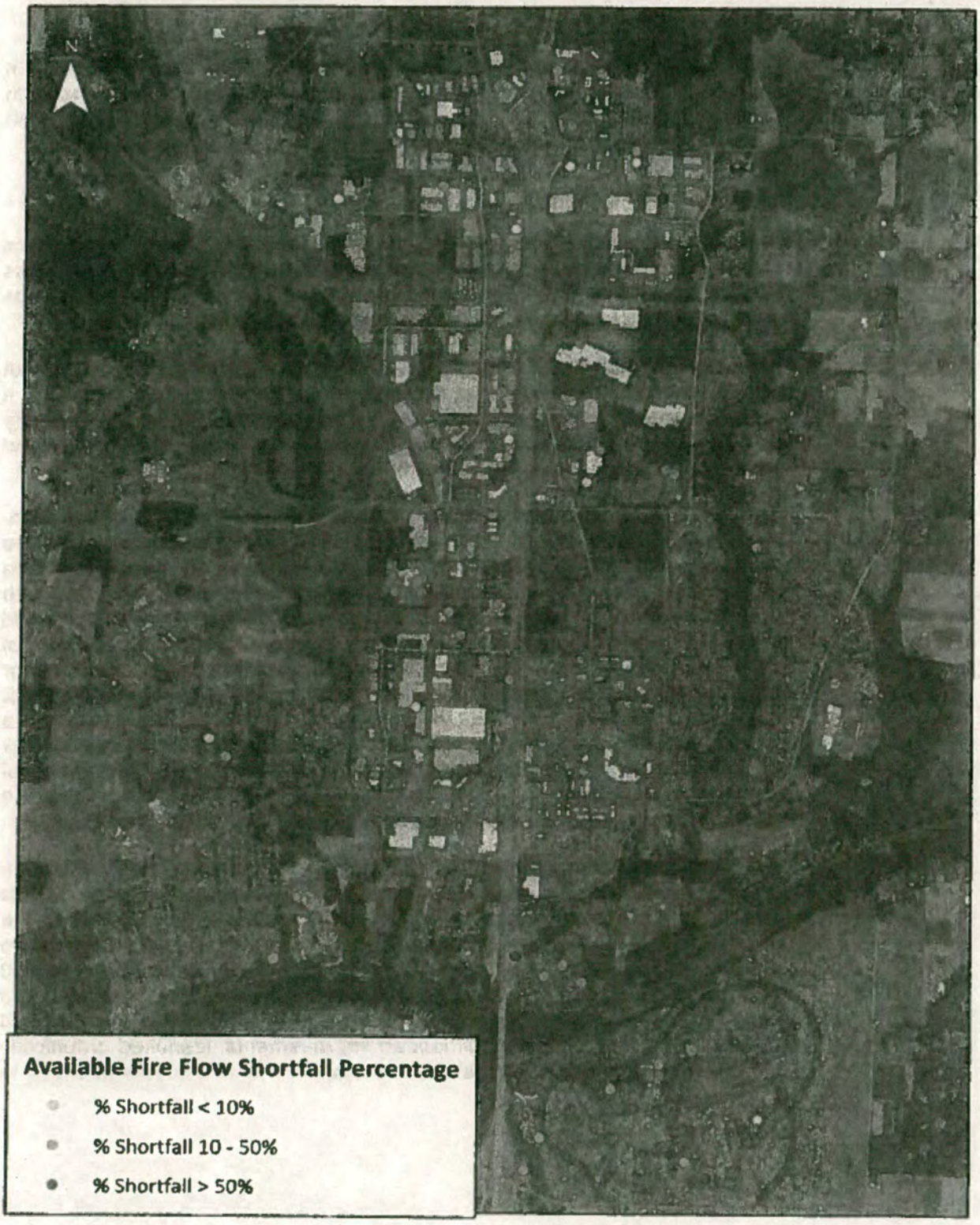
The calibrated water model was employed in evaluating the water system's capability to provide for high water demands in emergency scenarios such as structural fires. The flow rate required at various points in the system was previously determined as described in section 3.1 *Planning Criteria*.

Points on dead-end water lines that are less than 300-feet long and without hydrants were excluded from the evaluation. In consulting with City staff, it was determined that these points do not need to provide fire flow because the flow could be obtained from the main line to which these smaller dead-end lines are connected.

For over 95% of the system, there is more than adequate fire protection. Chart 3.1 highlights points in the system that cannot presently meet the established fire flow standard. Many of these localized deficiencies provide fire flows that are close to the desired standard and can be corrected with minor improvements. For example, a site may be deemed industrial and therefore require a 3,000 gpm demand but can currently provide only 90% of that flow (or falls 10% short). As system improvements are prioritized, minor deficiencies such as these will only be corrected as development or redevelopment occurs. On the other end of spectrum, there may be a residential area needing 1,500 gpm but it can only provide 30% of that flow (or falls 70% short). These deficiencies are higher priority and trigger a capital improvement based solely on the fire flow deficiency. Chart 3.1 breaks the deficiencies down into general categories based on the shortfall percentages.

Each of the failing points highlighted in Chart 3.1 was evaluated with City staff, and local improvements were developed to correct the problems. Other factors than just the local fire flow failure were considered in prioritizing fire flow improvements, such as, proximity to a point in the system providing the full fire flow requirement. For example, a failing hydrant may be less than 100 feet away from a passing hydrant, thereby decreasing the urgency for a system improvement in that area. These improvements are discussed generally in Section 3.5.4 *Recommended Improvements*, identified graphically in Figure 4 in Appendix A, and listed individually in the cost estimates found in Appendix E.

CHART 3.1 - Wilsonville Localized Fire Flow Deficiencies



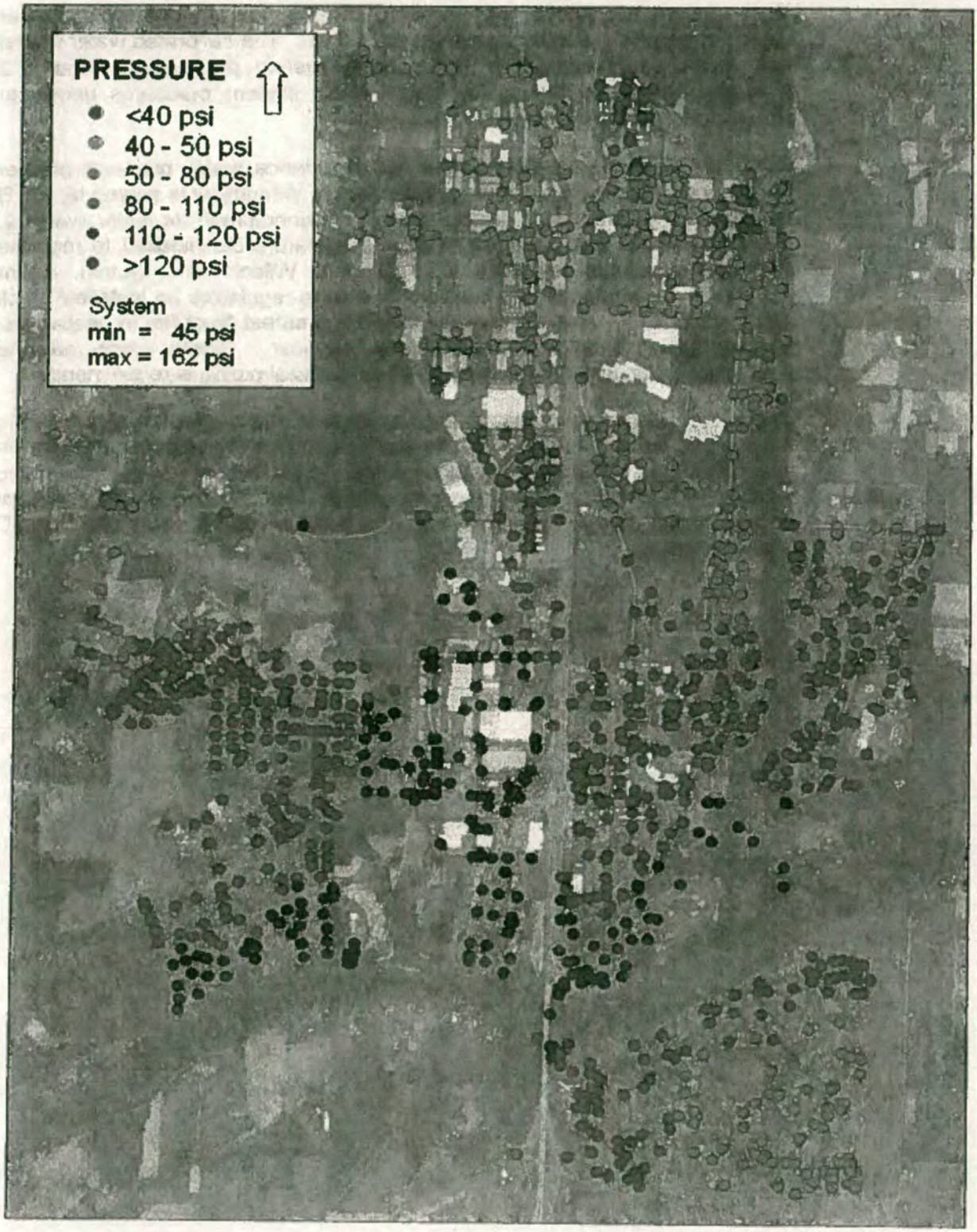
System Pressures

Most modern appliances and plumbing fixtures operate best when water system pressures are between 50 psi and 80 psi. The calibrated water model was employed in evaluating typical water system pressures. Chart 3.2 illustrates the model results for typical water system pressures under an annual average day demand scenario.

Much of Wilsonville's water system will experience water pressure greater than 80 psi. This is because the greater part of Wilsonville is served by the B Level pressure zone. This arrangement is not uncommon for water systems, but does require that individual pressure regulators be installed to regulate customer pressures to below 80 psi. For Wilsonville's system, Keller Associates recommends that individual pressure regulators be installed on all new connections. This will give the City the greatest flexibility in operations, while providing a level of protection to the user. Where future mainline pressures are anticipated to exceed 120 psi, special piping is recommended.

There are also some areas of low pressure in the northern portion of the system. While none of the areas are less than 40 psi, these may be areas the operations crew should monitor as the system continues to evolve. In order to provide water service with pressures greater than 40 psi to the northeast portion of the study area, a new pressure zone will be required (Level D pressure zone).

CHART 3.2 - Wilsonville Typical System Pressures



As shown in Chart 3.2, most of the water system will typically experience water pressure greater than 80 psi. In these areas, individual pressure regulators are recommended for all connections. Where mainline pressures will be more than 120 psi, special piping is recommended. The City typically requires ductile iron pipe, and standard pressure class ductile iron pipe for sizes that would be used in the distribution system is typically rated for 250-350 psi working pressure. There are some 120+ psi locations in the system where unknown pipe materials or materials other than ductile iron pipe are installed. As yet, these installations have not been problematic and are not recommended for replacement. However, if site specific problems should arise, it is recommended that they be replaced with a suitable pressure class pipe. A comparison of Chart 3.2 *Typical System Pressures* and the pipe material figure found in Appendix A reveals portions of the system that may fall into this category.

There are also some areas of low pressure in the northern portion of the system. While none of the areas are less than 40 psi, these may be areas the operations crew should monitor as the system continues to evolve.

Another system pressure standard is that service lines pressures cannot drop below 40 psi under a peak hour demand scenario. The model shows that the City's water system is robust enough to absorb peak hour demands with negligible pressure changes from an annual average day demand scenario.

Other System Deficiencies

Other system deficiencies found while evaluating the existing water system include vulnerabilities and inefficiencies.

One of the vulnerabilities discovered in Wilsonville's system was single line (e.g. non-looped) connections to large parts of the system. In the event that the single line were to rupture, the entire downstream area would be without water. Examples of these areas include the single line supplying Zone C north of Elligsen, and the Canyon Creek, Ash Meadow, and Sundial apartments. Each of these locations was reviewed with City staff, and necessary local improvements were developed to address these vulnerabilities.

Other vulnerabilities found in the system were hydrant coverage shortages. For planning purposes, the City elected to set a maximum service area radius of 300 feet from the hydrant consistent with the Tualatin Valley Fire and Rescue (TVF&R) maximum spacing of 600 feet. The more populated sections of the water system were evaluated for coverage, and several gaps were identified (see Chart 3.3). New hydrants, and in some cases new or upsized pipelines, are recommended to provide more coverage in the evaluated areas. An additional 20 hydrants are recommended to provide coverage to structures or areas further than 400 feet from an existing hydrant. Another 15 hydrants are recommended to service areas further than 300 feet from an existing hydrant.

CHART 3.3 - Hydrant Coverage Deficiency Areas

Another potential system deficiency is a section of high velocity flows in the Charbonneau District. Velocities higher than 6 feet per second (fps) can result in unnecessary energy loss and cause excessive wear on the affected piping and equipment. Higher system velocities also increase the potential for damage from transient surges in the water system. In general, velocities are below 6 fps in the City's water system. However, an exception to this trend was discovered in a model evaluation of the Charbonneau system. Velocities of 12 fps were identified in the Charbonneau 4-inch supply line under a peak hour demand scenario.

In evaluating a potential correction for the high velocities in the 4-inch line, it was determined that no improvement is necessary at this time. The system has operated in this fashion for years without problems. Serving a lower pressure zone inherently requires burning energy through a PRV, as is the case with the Charbonneau District. This section of pipe (located in the Charbonneau Booster Pump Building) should be monitored for early wear. If this section proves to be problematic, upsizing the 4-inch line or providing an additional supply point to Charbonneau would decrease velocity through the existing 4-inch connection.

One of the largest inefficiencies found in the water system is the independent well, tank, booster facility in the Charbonneau District. These facilities allow the Charbonneau system to operate independently under emergency conditions, but are rarely used because the system typically operates off the single line feed across the I-5 Bridge crossing the Willamette River. The cost of maintaining the Charbonneau facilities could be eliminated by installing a second connection to the Charbonneau District. This connection could be made using a directional bore to install a 16-inch water line connection under the Willamette River from Rose Lane to French Prairie Road. Additional discussion regarding this improvement and the Charbonneau District's water system can be found in Appendix F.

The improvements identified to address these and other deficiencies are discussed generally in Section 3.5.4 *Recommended Improvements*, identified graphically in Figure 4 in Appendix A, and listed individually in the cost estimates found in Appendix E.

3.5.2 Future System Evaluation

Future System Construction

Starting with the calibrated water model, future water infrastructure was added to the model using existing planning information for areas such as Villebois, Coffee Creek, Brenchley Estates, and Frog Pond. Input from the City served as the basis for such facilities as the future Zone B (West side) storage reservoir location, the Sherwood connection at the intersection of Tooze Road and Westfall Road, and the completion of Segment 3B of the 48-inch transmission main in Kinsman Road.

The planned land use for the study area shown in Figure 2 (Appendix A) provided direction for line sizing and arrangement. Water system demands

were allocated to the future areas using available demand estimates for master planned areas and land use acreage based estimates provided in Chapter 2 *Demand Forecasts*.

The City's 2-foot elevation contour dataset was used to identify the pressure zone best suited to serve future areas. Because the ground elevations in future growth areas in the northeast section of the study area are too high to be serviced by any of the existing pressure zones, Pressure Zone D was created. The target hydraulic grade for Zone D is approximately 590 feet. For evaluation purposes, a Zone D booster station has been modeled at the C Level Reservoir.

Future System Fire Flow and Pressures

The future system infrastructure was developed to ensure adequate fire flow and operating pressures to the intended service areas. The model was used to ensure proper line sizing and pressure zone connection. Figure 4 (Appendix A) illustrates the future system layout with recommended line diameters, and Figure 5 identifies the existing and future pressure zones in the water system.

3.5.3 Recommended Improvements

The recommended improvements resulting from the system evaluation are presented in this section by priority. These improvements are necessary to meet the available fire flow standards and provide hydrant coverage. Also included are the development-driven and City-identified capital improvement projects. Prioritization of the improvements was developed in consultation with City staff.

Priority 1A improvements are those that will likely happen within the next five years, while Priority 1B will occur within the next ten years. These may include projects that improve fire flows that are currently less than 1,000 gpm, or projects that are related to current developments and city-led improvements.

Priority 2 improvements are those that will likely happen within the next twenty years. These may include projects that improve fire flows that are currently greater than 1,000 gpm but less than 1,500 gpm. They may also be development-driven or City-led projects that are considered near-term. Hydrants needed for residential area coverage not tied to a Priority 1 improvement are considered Priority 2.

Priority 3 improvements are those that will happen as development or redevelopment occurs. These are implemented as needed or beyond the 20-year planning horizon and may include improvements intended to correct marginal fire flow deficiencies or poor hydrant coverage in developed industrial and commercial areas. Other future improvements are intended to provide water to currently unserviced areas.

Figure 4 (Appendix A) illustrates the priority improvements. The improvement identifiers on the figure correspond to capital improvement cost information provided in Chapter 5 and Appendix E.

3.6 BACKUP WELL SUPPLY

The City owns and maintains eight potable groundwater wells. These wells once supplied all of the City's drinking water. Since the completion of the water treatment facility, these wells serve only as an emergency backup water supply. These wells include Nike, Canyon Creek, Wiedeman, Boeckman, Geshellschaft, Elligsen, and two additional wells located within the Charbonneau District (Charbonneau wells #2 and #3). A detailed evaluation of these well facilities was documented in Technical Memorandum No. 5 (see Appendix B). The location of these well facilities is illustrated in Attachment 1 of the technical memorandum.

Keller Associates reviewed the well conditions, water rights status, availability of standby power, and water quality with City staff to prioritize which well facilities warrant upgrades and continued maintenance, and which ones should be considered for abandonment or conversion to nonpotable wells that could potentially provide local irrigation needs.

Given the potential for the Charbonneau District to become isolated from the remainder of the system during an earthquake, it was felt that the Charbonneau wells should be maintained as a critical backup supply source. Wiedemann and Geshellshaft wells have historically been good producers and should be maintained. Wiedemann should be equipped with standby power in order to be a more reliable source during an emergency event. The City should continue to take steps to certificate the water right at Geshellshaft (currently the largest producing well in the system). Keller Associates recommends that Elligsen be retained because the water right is certificated and because of its proximity to the storage tanks and Zone C. While there have been some concerns about the poor production capacity of Boeckman, recent pump tests show that it has maintained its historic production rate. Given the relatively new facilities at Boeckman and the presence of standby power, Keller Associates recommends that this facility be retained for the 20-year planning period.

Because of the significant expense to upgrade the Canyon Creek well and its questionable capacity, it may be more cost effective to just abandon this well. However, it may be worthwhile to investigate potential local irrigation uses which would not require standby power upgrades nor the same level of service that is required for potable wells.

The Nike well has historically been a large producer and is the City's only flowing artesian well. The well has poor water quality and in recent years has experienced significant declines in production capacity, believed to be from biofouling of the well screens. Keller Associates recommends that the Nike well be preserved for local irrigation purposes.

The backup wells provide more than just a reliable long-term secondary source of drinking water. Groundwater wells that are equipped with emergency generators can serve to offset emergency storage needs. Impacts on emergency storage requirements are summarized in Section 3.3.

The annual costs to upgrade and maintain all but the Nike and Canyon Creek wells are estimated to be about $95,000 to $105,000 per year.

3.7 CHARBONNEAU DISTRICT SUMMARY

The Charbonneau District is located south of the Willamette River and has several unique issues that justify special consideration within this Master Plan. Water supply to the District comes primarily via a single transmission pipeline. Backup wells, a buried concrete storage tank, and a booster facility are maintained to provide a backup supply to the system and to supplement fire demands.

Because of the potential for the District to become isolated from the rest of the City's water system, Keller Associates considered such an isolation event when evaluating emergency water supply and storage needs. The District's backup wells are capable of sustaining average day demands (but not peak summer demands) during an extended isolation event. Additionally, the existing storage and reservoir are capable of providing volume equivalent of approximately 2,500 gpm of fire protection for a duration of 2 hours. The Charbonneau District represents a significant portion of the City's "older" water system assets, and many of these assets have been targeted in this study for replacement within the 20-year planning period. In addition, many of the pipelines were completed when 4-inch and 6-inch pipeline sizes were used to provide residential fire protection. New fire protection standards generally require minimum pipe diameters of 8 inches. Fire hydrant spacing in many areas also does not meet current City standards. Recommendations to address these deficiencies are summarized in the Capital Improvement Plan. For a more complete evaluation of the Charbonneau District system, including facility replacement needs and recommended improvements, please refer to Appendix F.

KELLER associates

4.0 WILLAMETTE RIVER WATER TREATMENT PLANT AND TRANSMISSION PIPELINE

4.1 OVERVIEW

The purpose of this section is to provide a general overview of improvements necessary to attain a 15 mgd treatment capacity at the Willamette River Water Treatment Plant (WRWTP). It is currently anticipated that the total 15 mgd capacity will be divided between the City of Sherwood (5 mgd) and the City of Wilsonville (10 mgd). Under current planning assumptions, a 15 mgd plant production rate is projected to be necessary by 2020. To achieve finish water flows greater than 15 mgd, a more detailed study specific to the WRWTP is needed. In addition to the current plant capacity, the current transmission capacity evaluation results are presented in this chapter.

4.2 WATER TREATMENT PLANT CONSIDERATIONS

The WRWTP was evaluated for both hydraulic and treatment capacity. The following sections summarize the existing capacities and what improvements are necessary to attain a 15 mgd production rate.

4.2.1 Hydraulic Capacity Evaluation

The plant is designed to treat 15 mgd now and up to 70 mgd in the future at the current plant site. Near the existing plant site is a future "upper plant site" which has room to accommodate a 50-mgd plant. Because of these initial design considerations, much of the plant is hydraulically capable of carrying at least 15 mgd and in many cases 70+ mgd. Hydraulic calculations were performed to confirm the original plant hydraulic design as shown on the hydraulic profile. No significant discrepancies were found. The greatest difference was an isolated 1.64 foot difference at the raw water pump station. This comes from the head loss in a check valve on the pump discharge that may have been excluded from the original hydraulic profile. This has only a minor impact with a slight increase in the pumping head condition for the raw water pumps.

The following subsections summarize the hydraulic capacity of the major plant components with respect to the targeted 15 mgd production rate.

Raw Water Intake and Caisson

The caisson is a 48-foot interior diameter containment located directly beneath the raw water pump station. The caisson is approximately 80-feet deep and is fed by a 72-inch diameter river intake line. The intake line extends approximately 350 feet out into the Willamette River and is equipped with two 66-inch diameter intake screens. The rated capacity for the intake screens as presently installed is 70 mgd.

It should be noted that there is some discrepancy on the intake line size. Most of the record drawings indicated the diameter to be 72-inch. However, a 76-inch diameter is reported in the Operations and Maintenance Manual Section 2, as well as on Sheet 2M-1 of the record drawings.

Raw Water Pump Station

The raw water pump station pulls water from the caisson and delivers pressurized water to the plant for treatment. There are presently 4 pumps installed, with pads and piping for an additional 6 pumps in the future. There are three 7.5-mgd pumps and one 4-mgd pump. One of the 7.5-mgd pumps is a constant speed, and the remaining pumps are equipped with variable speed drives. With the largest pump off-line, the raw water pump station can deliver 19 mgd.

Piping

The internal plant piping that conveys water through the treatment process is not a limiting factor in achieving the targeted 15-mgd rate. A typical hydraulic design constraint for piping is to maintain velocities below 8 fps. The pipeline conveying supply from the raw water booster station through most of the plant is a 54-inch diameter line. At flow rate of 15 mgd, the velocity in this line is 1.5 fps. At a flow rate of 70 mgd, the velocity in the line is 6.8 fps. Near the end of the WTP treatment chain, the main pipe diameter increases to 60 inches. This larger size accommodates flows up to 100 mgd before reaching the 8 fps design constraint. The piping is also large enough to eliminate any concern with excessive friction headloss at the design flow rate.

Influent Meter

The influent flow meter is an ABB MagMaster magnetic flow meter. The meter is located immediately downstream of the raw water pump station along the 54-inch in-plant line. As flow approaches the meter, the pipeline is narrowed down to a 24-inch diameter line to increase the velocity and thereby improve the meter's accuracy. Following the meter, the line is expanded back up to a 54-inch diameter. According to the meter manufacturer's specifications, the velocity through the meter should be greater than 1.64 ft/second (or 3.3 mgd) for optimal accuracy. At 15 mgd, the velocity in the 24-inch line segment is over 7 ft/second. The maximum flow rate for the meter is specified by the manufacturer at 64 mgd. Manufacturer documentation can be found in Appendix G.

Coagulation / Ozone Contact Basins

Because the ozone contact basins and coagulation units are for treatment only, the hydraulic capacity is not the limiting factor for flows of 15+ mgd. The flow capacity limitations are dependent on the treatment constraints of these units.

Dual Media Filters

There are four filter beds, each with six feet of granular activated carbon atop one foot of sand. The underdrain is an engineered system made of plastic blocks with an integrated media support cap. The filters are operated with a constant head which is controlled by an upstream overflow and a downstream weir. The control design for the filter system is defined as constant rate – level controlled.

Because filters function as treatment, their capacity is limited by treatment considerations rather than hydraulics. High flow rates could be pushed through the filters from a hydraulic perspective, but the process water may not receive the full benefit of the filters. The associated piping and channeling are all designed to carry at least 15 mgd, which is the filtration system's rated treatment capacity.

Clearwell

Hydraulically, the clearwell provides a buffer between variations in the plant's production rate and the City's demand rate. Allowing for 1 foot of freeboard, the usable clearwell volume has been calculated at 2.49 MG using AutoCAD and the original record drawings. There are various volumes reported throughout the available documentation on the clearwell, so some effort was made to calculate the volume more precisely by accounting for the volume of the interior support columns and pipe trough intrusions in the clearwell. This calculated volume also accounts for the design minimum water surface elevation of 103 feet in the clearwell.

At this volume, the pumps can deliver the design rate of 15 mgd for 4.6 hours without inflows from the treatment plant. According to the April 7, 2011 Technical Memo on the Clearwell CT Analysis, the City of Wilsonville's current operational goal is to provide at least 2 hours of emergency storage in the event that plant production ceased.

There are also other storage reservoirs throughout the distribution system that can provide the system's storage need without requiring storage from the clearwell. Refer to the storage evaluation found in Chapter 3 of this report for an in-depth storage analysis for the system.

Treatment constraints which prevent using the full clearwell volume as backup storage are addressed in sub-section 4.2.2 of this report.

High Service Pumps

The high service pump station pulls water from the clearwell and delivers it to the City through a 63-inch diameter transmission line. The pump station consists of four pumps. There is one 4-mgd pump, and three 7.5-mgd pumps. One 7.5-mgd pump is a constant speed pump, and the other pumps are equipped with variable frequency drives. With the largest pump offline, the booster station can still deliver 19 mgd. The high service pump station has plumbing and pads for two future pumps.

In the event of a utility power failure, only one pump (the 4.0-mgd variable speed pump) will be operational. The other pumps are not connected to the plant's emergency power system.

A power failure can also lead to surge conditions if the pumps were to suddenly stop while delivering flows between 12.5 to 15 mgd. More information regarding this surge potential can be found in the City of Wilsonville Hydraulic Transient Analysis technical memorandum dated April 6, 2011. A 750-cubic-foot hydropneumatic tank is recommended for protection against transient surge damage for flows greater than 12.5 mgd.

4.2.2 Treatment Capacity Evaluation

The treatment train in the water treatment plan begins with flash mixing and ends with the clearwell. This section presents the results of a treatment capacity evaluation of the WRWTP. The evaluation is limited to the major plant components and therefore excludes auxiliary systems such as backwash and chemical feed.

Flash Mixing Treatment Capacity

Typical design standards for flash mixing address flow rate, nozzle velocity, and mixing energy to ensure adequate flash mixing performance. The current flash mixing process is adequate and within typical design standards, with the exception of the nozzle velocity.

The recommended nozzle velocity is 20-25 fps. The current maximum nozzle velocity is approximately 11 fps (based on a 1,000-gpm flash-mixing pump rate and a 6.25-inch orifice diameter Distribojet spray nozzle).

If the coagulation and clarification process is working well, no changes are recommended. If some improvement in the coagulation and clarification process is desired, reducing the flash mixing nozzle size may improve the mixing and coagulation conditions.

Coagulation and Clarification Treatment Capacity

This is a proprietary process (Actiflo by Kruger), but is rated by the manufacturer to safely accommodate 15 mgd. The two trains can easily treat 7.5 MG each. According to the manufacturer, one train alone can treat 15 mgd temporarily while the other is out of service. No modifications are anticipated in order to be able reach 15 mgd.

Ozone Treatment Capacity

The treatment plant has two ozone generators, each capable of producing 300 pounds per day (which translates to 2.76 mg/L at a flow rate of 15 mgd). A minimum 95% transfer efficiency is standard design criteria. The transfer efficiency rate is the portion of the ozone produced that actually transfers to the water as a residual concentration. A 95% transfer rate on 2.76 mg/L results in more than enough production to reach the targeted residual of 2.0

mg/L. The generators have a 10:1 turn down ratio, so as little as 30 ppd could be produced to accommodate lower plant flow rates.

The intermediate ozone system is intended to provide additional inactivation of Giardia, viruses, and cryptosporidium beyond what is required by state and federal regulations. Ozone can also help minimize aesthetic pollutants that cause taste and odor.

The current operational goal at the plant is to provide a 1-log inactivation of Cryptosporidium with the ozone. In order to achieve inactivation through disinfection, a specific contact time or CT value is needed (where C=residual disinfectant concentration, and T=contact time). The CT is the disinfectant concentration multiplied by effective contact time. By EPA's current standards, the effective contact time in the CT calculation is the time at which 10% of the inlet concentration is observed at the outlet, or commonly referred to as the T_{10}.

According to the EPA CT tables, a 1-log inactivation can be achieved during the summer (15°C design temp) with a CT of 6.2 and during the winter (4.1°C design temp) with a CT of 17.5. With a target concentration of 2.0 mg/L, the T_{10} summer would need to be 3.1 minutes. The T_{10} winter would need to be 8.75 minutes.

The design hydraulic residence time (HRT) in each of the two contact basin trains is 14.5 minutes at 7.5 mgd per train (for a total of 15 mgd). This means the hydraulic efficiency factor (calculated as T_{10}/HRT) for the basins would need to be at least 0.6 in order to achieve the desired CT.

The hydraulic efficiency factor has not yet been determined for the basins. However, the arrangement of the baffles and the geometry of the basins are such that 0.6 is likely achievable. Regardless, this value should be verified with a tracer study and computer modeling.

In summary, the ozone treatment capacity appears to be sufficient to treat up 15 mgd; however, the T_{10}/HRT factor for each contact basin has yet to be verified. The EPA guidance manual recommends that the highest tracer study test flow rate used to determine hydraulic efficiently be at least 91% of the maximum flow rate anticipated in the clearwell. With this standard in mind, the basins will need to have a tracer study performed at a flow rate of at least 6.8 mgd.

Dual Media Filters Treatment Capacity

There are two bays of two filter beds each for a total of four filter beds. The empty bed contact time is 7.5 minutes at the design flow rate of 6 gallons per minute per square foot (gpm/sf). The filter rate can safely increase up to 8 gpm/sf to accommodate one filter out of service. In pilot testing, the filters reliably treated water to plant operation goals up to 12 gpm/sf. Each filter has a treatment capacity of 4 mgd based on 6 gpm/sf, for a total of 16 mgd for four filters.

Clearwell Treatment Capacity

The clearwell functions both as an operational water storage facility and as a finishing disinfection contact chamber. From the total available storage volume, the clearwell provides operational volume and CT volume. Operational storage is used for backwashing the plant filters, other miscellaneous potable uses at the plant, and distribution system demands beyond the plant's production capacity or to provide water during a plant outage. Under current operations, the storage volume is also used to provide for system demands during the night when the plant is off-line. The current operating policy established by the City requires a reserve volume equal to a minimum of two hours at the design maximum flow rate.

Because the storage volume component fluctuates throughout the day, it cannot be counted on to provide the necessary volume for achieving contact time. Therefore, a minimum CT volume must be maintained at all times in order to achieve the required disinfection.

It is important to recognize that the clearwell is the second disinfection process in the WRWTP. The first disinfection process occurs in the ozone contact chambers discussed in this chapter. By EPA standards, only one of these disinfection processes is necessary. However, Oregon regulations do not recognize disinfection before filtration (OAR 333-061-0050). Therefore, the disinfection provided by the ozone contact chambers located upstream of the filters is not formally acknowledged by Oregon regulations despite the fact that the actual benefit of the disinfection is provided.

Just as it is with the ozone contact chambers, the clearwell's disinfection capacity is measured by CT. The CT in the clearwell was recently evaluated and the results were reported in the *CT Analysis Technical Memorandum* (CT Memo) prepared by MWH dated April 7, 2011.

The analysis in the CT Memo is based on assumptions of total contact volume, operating storage requirements, residual chlorine concentration, finish water pH, and hydraulic efficiency. Each of these factors ultimately determines the treatment capacity of the clearwell, and therefore the production capacity of the plant.

Based on the assumptions stated in the CT Memo (pg. 5), the current clearwell capacity is 15 mgd in the summer and 10 mgd in the winter. These parameters are summarized in Table 4.1.

TABLE 4.1 - CT Analysis 1: Summer and Winter

Parameter	Summer/Winter Value	Units	Comments
Total Available Storage Volume	2.9	MG	Accounts for 1-foot freeboard
CT Required	18/39	mg min/L	Provides 0.5 log Giardia inactivation at given temp (15°C/4°C) and pH (8.0)
C Value	1.0	mg/L	Free chlorine concentration in clear well
Minimum T_{10} Required	18/89	min	Contact time needed to achieve CT
Ratio of T_{10} to HRT	0.16	-	Factor accounts for higher flow rates and conservative assumptions
Minimum HRT Required	111/242	min	Hydraulic residence time needed to achieve CT
Minimum Clearwell Volume	1.16/1.7	MG	Volume in clearwell needed to achieve CT at maximum production rate while meeting operational storage requirement of 2 hours.
Operational Storage Available	1.6/1.1	MG	Volume available to meet the required 2-hour operational storage. (Total available volume-Minimum CT volume)
Operational Storage Time at Maximum Flow Rate	2.5/2.6	hrs	Hours of maximum flow rate available from operational storage
Maximum Flow Rate	15/10	mgd	This is the production capacity of the WRWTP and the treatment capacity of the clearwell

Another analysis presented in the CT Memo (pg. 5) changed the contact time volume to include the volume of the 63-inch transmission line leading from the clearwell to the distribution system turnout at Brockway Drive. Under this analysis, the clearwell capacity is 24.1 mgd in the summer and 15.4 mgd in the winter. As stated in the memo, this would require the installation of a chlorine residual analyzer at Brockway, and temperature and pH probes along the transmission line route. In addition to these items, this option would require the installation of an 8-inch diameter, 1,200-foot return line from the Brockway turnout back to the WRWTP for on-site culinary use.

Yet another analysis presented in the CT Memo (pg. 6) looked at adjusting the finish water pH from the current 8.0 down to 7.5. This would result in a clearwell capacity of 18.6 mgd in the summer and 12.3 mgd in the winter.

Other options presented in the CT Memo for increasing the current clearwell capacity included adding baffling to the clearwell interior to improve the hydraulic efficiency, incorporating UV disinfection after filtration, and pursuing a change to Oregon's post-filtration disinfection regulation which is more stringent than the United States Safe Drinking Water Act.

For the purposes of this master plan, the clearwell assumptions were revisited and analyses were performed using different design assumptions. One of the factors revisited was the total available volume in the current clearwell. After reviewing the original plant record drawings and applying a 1-foot freeboard, it is calculated that the available clearwell volume is approximately 2.5 MG as opposed to the previously assumed 2.9 MG (*Willamette River WTP Operations and Maintenance Manual*, Section 6, pg 6-1).

Another design assumption is the hydraulic efficiency factor or the T_{10}/HRT. A tracer study was completed on the WRWTP clearwell in 2003 to discover how quickly water can pass from the clearwell inlet to the outlet, and therefore how much time the disinfectant in the clearwell has to act on the water. T_{10} represents the time for 10% of the tracer to pass through, while T_{90} is the time at which 90% of the inlet concentration is observed at the outlet. The T_{10} is commonly used as the T in the CT calculation.

The 2003 tracer study resulted in a ratio of the T_{10} over the theoretical residence time (also referred to as the hydraulic residence time or HRT) of 0.16. Previously, this ratio has been used to calculate the required CT volume for flow rates up to 35 mgd, and thereby determine the treatment capacity of the clearwell. However, there are some potential problems with using this ratio in such a manner.

The EPA *Guidance Manual on Disinfection Profiling and Benchmarking* states that the relationship between detention time and flow is proportional but not generally a linear function (USEPA, May 2003, Appendix E.2). In simple terms, this means that the T_{10} ratio will be different for different flow rates. In fact, data from the WRWTP tracer study reveals a T_{10} to HRT ratio of 0.16 at 6,000 gpm, and a T_{10} to HRT ratio of 0.22 at 3,000 gpm. The highest flow rate used to develop the 0.16 factor was 8.6 mgd. Therefore, according to the EPA criteria for tracer study flow rates, the factor of 0.16 T_{10} to HRT should not be applied to flows higher than 9.5 mgd. In order to obtain an acceptable T_{10} to HRT ratio for a design flow of 15 mgd, the tests would need to be performed for flows of at least 9,500 gpm.

Moreover, recent research suggests that using the T_{10} to HRT factor will overestimate the contact time (*Evaluation of Hydraulic Efficiency of Disinfection Systems Based on Residence Time Distribution Curves*, Wilson and Venayagamoorthy, 2010). According to this research, Computational Fluid Dynamic (CFD) modeling will provide the best accuracy in determining the hydraulic efficiency of a clearwell. Alternatively, using at least a T_{10}/ T_{90} ratio will more closely approximate the contact time than the current standard practice. As an example, the original tracer study data on the WRWTP clearwell suggests that the T_{10}/ T_{90} ratio is 0.07, as opposed to 0.16 for the T_{10} to HRT ratio. In short, using the T_{10}/ T_{90} ratio as the hydraulic efficiency factor is more conservative than the current EPA and industry standard of using the T_{10}/ HRT ratio.

Without the benefits of a tracer study at higher flow rates or CFD modeling, it is impossible to determine the actual hydraulic efficiency factor of the clearwell. Analyses were performed using more conservative hydraulic efficiency factors to evaluate the potential impact on the clearwell's capacity, and consequently the WRWTP's capacity.

EPA's minimum hydraulic efficiency factor of 0.10 is defined as typical for unbaffled clearwell conditions such as the clearwell in the WRWTP (EPA *Guidance Manual for Compliance with the Filtration and Disinfection Requirements for Public Water Systems Using Surface Water Sources*, Appendix C, Table C-5).

After accounting for the change in the total available volume and hydraulic efficiency factor, the resulting capacity of the clearwell is 12 mgd for the summer (as opposed to the previously assumed 15 mgd) and 7 mgd for the winter (as opposed to the previously assumed 10 mgd) with a chlorine dose of 1 mg/L and a pH of 8.0. Table 4.2 summarizes the values discussed in this section.

TABLE 4.2 – CT Analysis 2: Summer and Winter

Parameter	Summer/Winter Value	Units	Comments
Total Available Storage Volume	2.5	MG	Accounts for 1-foot freeboard
CT Required	18/39	mg/min/L	Provides 0.5 log Giardia inactivation at given temp (15°C/4°C) and pH (8.0)
C Value	1.0	mg/L	Free chlorine concentration in clear well
Minimum T_{10} Required	18/89	min	Contact time needed to achieve CT
Ratio of T_{10} to HRT	0.1	-	Factor accounts for higher flow rates and conservative assumptions
Minimum HRT Required	180/390	min	Hydraulic residence time needed to achieve CT
Minimum Clearwell Volume	1.50/1.91	MG	Volume in clearwell needed to achieve CT at maximum production rate while meeting operational storage requirement of 2 hours.
Operational Storage Available	1.0/0.59	MG	Volume available to meet the required 2-hour operational storage (Total available volume-Minimum CT volume)
Operational Storage Time at Maximum Flow Rate	2	hrs	Hours of maximum flow rate available from operational storage
Maximum Flow Rate	12/7	mgd	This is the production capacity of the WRTP based on the limiting factors on the clearwell.

An alternative analysis performed in connection with this study evaluated the effect of reducing the operating storage requirement from 2 hours at maximum production rate to a reasonable minimum of what is needed for plant operations only. This allows the gravity controlled reservoirs in the distribution system to provide for system demands during plant outages or peak demands. Relying on distribution system storage for distribution system demands is more efficient and streamlined than pumping storage from the treatment plant's clearwell. All pressure zones in the distribution system currently have the capability to be supplied by a gravity reservoir. The reservoir storage volumes will likely need to be expanded as demands grow, but this will be part of the distribution system improvements and not the water treatment plant improvements.

The largest use for treated operational volume at the treatment plant is filter backwash. Because the clearwell is the source for filter backwash water, the operational storage volume maintained in the clearwell at the plant could be based on the maximum filter backwash rate and duration.

One filter can be backwashed at a time without sacrificing the combined 16 mgd filtration rate, because the flow rate to the active filters can be increased

from 4 mgd to 5.33 mgd for short periods of time. At a plant production rate of 15 mgd, only one filter at a time would require a backwashing. An operations-based storage volume could be as outlined in Table 4.3.

TABLE 4.3 - Plant Operational Volume in Clearwell

Parameter	Value
Backwash Rate 1 (gpm/sf)	6
Backwash Rate 2 (gpm/sf)	18
Backwash Duration for Rate 1 (min)	5
Backwash Duration for Rate 2 (min)	8
Single Filter Area (sf)	463
Backwash Volume for One Filter (MG)	0.08
% Additional Volume for Other Plant Needs (assumed as % of backwash volume)	25
Safety Factor	3
Total Operational Volume in Clearwell (MG)	**0.30**

Under this analysis, the operational storage component is reduced to 0.30 MG from the previously assumed 1.25 MG. Table 4.4 summarizes the impact on the clearwell treatment capacity.

TABLE 4.4 - CT Analysis 3: Summer and Winter

Parameter	Summer/Winter Value	Units	Comments
Total Available Storage Volume	2.5	MG	Accounts for 1-foot freeboard
CT Required	18/39	mg-min/L	Provides 0.5 log Giardia inactivation at given temp (15°C/4°C) and pH (8.0)
C Value	1.0	mg/L	Free chlorine concentration in clear well
Minimum T_{10} Required	18/39	min	Contact time needed to achieve CT
Ratio of T_{10} to HRT	0.1	-	Factor accounts for higher flow rates and conservative assumptions
Minimum HRT Required	180/390	min	Hydraulic residence time needed to achieve CT
Minimum Clearwell Volume	2.5/2.5	MG	Volume in clearwell needed to achieve CT at maximum production rate while meeting operational storage requirement of 0.3 MG.
Operational Storage Available	0.3/0.3	MG	Volume available to meet the required 2-hour operational storage (Total available volume-Minimum CT volume).
Maximum Flow Rate	17.5/8.1	mgd	This is the treatment capacity of the clearwell. The plant may have other limiting factors.

As seen in this analysis, modification of the operational storage requirement frees up storage volume in the clearwell to meet the CT storage requirements despite the more conservative design assumptions of a reduced volume and a lower hydraulic efficiency. With these design assumptions in place, the

targeted 15 mgd plant production rate could be supported with volume to spare in the clearwell.

Other design assumptions that could also affect the clearwell disinfection capacity would include a more conservative hydraulic efficiency factor (T_{10}/ T_{90}), an increased chlorine residual concentration (>0.1 mg/L), and the effects of an internal clearwell mixing machine.

An analysis using the more conservative T_{10}/T_{90} ratio as the hydraulic efficiency factor for the clearwell was not performed due to the tracer study flows being too low to apply to the targeted 15 mgd plant production rate. This may be a possibility after a new tracer study is completed.

Although not commonly used, an internal clearwell mixing machine may be a means of improving the CT. An analysis of an internal clearwell mixing machine would be specific to the device and would be best performed by the manufacturer through modeling or other means. This analysis is similar to the baffling option presented in the CT Memo in that it would improve the T_{10} in the clearwell and effectively raise the hydraulic efficiency factor.

An analysis of increased chlorine was not performed due to the probable aesthetic water quality impacts.

4.3 TRANSMISSION PIPELINE CONSIDERATIONS

The purpose of the transmission line is to convey water to the system with minimal head loss (to avoid excess pumping costs) and moderate velocity (to avoid system surges and undue stress). Typically, velocities should be less than 8 fps and head loss should be as low as possible, but certainly no more than 10 psi from the treatment plant to the distribution system.

The nearly 4,000-foot, 63-inch steel transmission line from the plant to the distribution system can carry 15 mgd with negligible head loss and 1 fps velocity. At 70 mgd (build-out of the lower site), the transmission would lose less than 2 psi and the velocity would be about 5 fps. At 120 mgd (build-out of the upper and lower site), the transmission would lose less than 5 psi and the velocity would be just under 9 fps.

At Wilsonville Road, the 63-inch transmission line from the WRWTP wyes to two 48-inch transmission lines. Each of the 48-inch steel lines has a design capacity of 40 mgd (5-fps velocity). Currently only one of these 48-inch transmission lines is installed. The final connecting section of this transmission line is currently under design. When completed, this line will carry supply northwest to Sherwood and other turnouts to the Wilsonville distribution system.

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5.0 CAPITAL IMPROVEMENT PLAN

5.1 OVERVIEW

The capital improvement plan is presented in this section. Each improvement is recommended as a means for addressing existing or future needs in the water system. The necessary improvements were identified by evaluating the various system components against the evaluation criteria established in Chapter 3 of this report, as well as local, state, and federal standards.

Priority 1A improvements are those that will likely happen within the next five years, while Priority 1B will occur within the next ten years. These may include projects that improve fire flows that are currently less than 1,000 gpm, or projects that are related to current developments and city-identified priority improvements.

Priority 2 improvements are those that will likely happen within the next twenty years. These include projects that improve fire flows that are currently greater than 1,000 gpm but less than 1,500 gpm. They also be development driven or City-led projects that are considered near-term. Hydrants needed for residential area coverage not tied to a Priority 1 improvement, are considered Priority 2.

Priority 3 improvements are those that will happen as development or redevelopment occurs. These may or may not occur within the 20- year planning horizon. These also include improvements intended to correct marginal fire flow failures or poor hydrant coverage in developed industrial and commercial areas. Other Priority 3 improvements are intended to provide water to currently unserviced areas.

Table 5.2 contains the recommended improvements for the system components of supply, storage, and distribution for the respective priorities. The numeric identifier assigned to the improvements corresponds to the capital improvement plan map found in Appendix A, Figure 4. The primary purpose for the recommended improvements is also noted in the capital improvement tables. The following legend (Table 5.1) summarizes the primary purposes.

TABLE 5.1 - Improvement Primary Purpose Legend

Primary Purpose	Explanation Legend
Compliance	An improvement needed to correct an existing condition that is out of compliance with a federal, state, or local regulations
Operations	An improvement that addresses a component's interaction with other components in the system.
Maintenance	An improvement addressing a recurring or chronic maintenance problem. May also be a standard maintenance task.
Replacement	Replacement of a component that is beyond its useful life, undersized, etc.
Growth	Improvements that are necessary due primarily to growth.
Fire Flow	Improvements necessary to provide the targeted fire flow.
Water Quality	Improve the water quality.
Hydrant Coverage	Improve accessibility of fire hydrants to water service area.

The various improvements listed in the capital improvement plan may have a portion of the cost attributed to future growth because they are, at least in part, intended to benefit growth. Where this is the case, the incoming development or redevelopment is responsible for the growth portion of the cost. To assist in future system development charge evaluations, Keller Associates has estimated the portion of the improvement cost that could be attributed to growth.

Each improvement is accompanied by an opinion of probable cost. This is a planning level estimate, based on unit pricing and project budgeting numbers provided by the City. More accurate cost estimates should be obtained at the time of preliminary design for the specific project. Additional details of the cost breakdown for each of the improvements can be found in Appendix E.

Based on the demand projections in this study, water treatment plant expansions may be needed around 2020. However, it should be noted that the capital improvement plan presented in this section contains only those treatment plant improvements necessary to achieve a 15 mgd production rate. For higher rates, a separate master plan is needed, and must be completed before the City's long-range capital improvement plan and associated Rate Study can be determined. These tasks (Treatment Plant Master Plan, and Rate Study) are planned to occur in the next two years.

Additional capital expenses associated with major repairs and replacements of existing water facilities are summarized in Chapter 6.

TABLE 5.2 - Priority Capital Improvements

ID**	Item	Primary Purpose	Total Estimated Cost	Growth Apportionment %	Growth Apportionment Cost	Operating Fund	Additional Annual O&M
Priority 1A Improvements (by 2017)							
Water Supply							
106	Portable Flow Meter (for well tests)	Operations	$ 13,000	0%	$ -	$ 13,000	$ 1,380
Water Treatment and Transmission							
	Surge Tank	Operations	$ 170,000	100%	$ 170,000	$ -	$ 960
	Clearwell Improvements (assume policy change)	Operations	$ -	100%	$ -	$ -	
Water Storage							
121	C Level Reservoir Security and Sampling Improvements	Operations	$ 16,000	0%	$ -	$ 16,000	$ 840
123	Charbonneau Reservoir Chlorine Monitoring	Operations	$ 7,000	0%	$ -	$ 7,000	$ 960
124	Automated Valve at Tooze/Westfall (West Side Tank)	Operations	$ 58,000	100%	$ 58,000	$ -	$ 580
125	3.0 Million Gallon West Side Tank and 24-inch Transmission (in Pre-design)*	Growth	$ 5,840,000	100%	$ 5,840,000	$ -	$ 17,180
126	Elligsen West Tank - Add Altitude Valve	Operations	$ 31,000	100%	$ 31,000	$ -	$ 580
Booster Stations & Turnouts							
140	Charbonneau Booster PRV & SCADA	Operations	$ 22,000	20%	$ 4,400	$ 17,600	$ 920
Water Distribution Piping							
163	16-inch Loop on Barber St. (Montebello to Kinsman)	Growth	$ 371,000	100%	$ 371,000	$ -	$ 320
165	48-inch Transmission on Kinsman St - Barber to Boeckman (in Design)*	Growth	$ 3,960,000	100%	$ 3,960,000	$ -	$ 3,000
	Total Priority 1A Improvements		$ 10,436,000		$ 10,436,400	$ 55,600	$ 28,400
Priority 1B Improvements (by 2022)							
Water Supply							
110	Nike Well Telemetry & Misc. Improvements	Operations	$ 35,000	32%	$ 11,300	$ 23,700	$ 420
111	Wiedeman Well Generator & Telemetry	Operations	$ 98,000	12%	$ 11,300	$ 86,700	$ 2,460
112	Boeckman Well Telemetry Upgrade	Operations	$ 26,000	43%	$ 11,300	$ 14,700	$ 420
113	Gesellschaft SCADA & Instrumentation	Operations	$ 32,500	35%	$ 11,300	$ 21,200	$ 420
114	Elligsen Well Instrumentation	Operations	$ 20,000	29%	$ 5,700	$ 14,300	$ 120
Booster Stations & Turnouts							
143	Charbonneau Booster Flow Meter Vault	Replacement/ Operations	$ 29,000	54%	$ 15,700	$ 13,300	$ 380
Water Distribution Piping							
160	8-inch Upgrade on Jackson St.	Fire Flow	$ 84,000	0%	$ -	$ 84,000	$ 100
161	8-inch Upgrade on Evergreen St.	Fire Flow	$ 83,000	0%	$ -	$ 83,000	$ 200
162	8-inch Loop N. of Seely St.	Fire Flow	$ 8,000	0%	$ -	$ 8,000	$ 100
164	10-inch Extension on Montebello St.	Growth (School)	$ 217,000	100%	$ 217,000	$ -	$ 400
166	8-inch Loop between Boberg St. & RR (north of Barber)	Fire Flow	$ 78,000	0%	$ -	$ 78,000	$ 200
167	8-inch Loop on Boones Ferry (north of Barber)	Operations	$ 19,000	0%	$ -	$ 19,000	$ 100
168	10-inch Loop (Appts E. of Canyon Creek/Burns)	Fire Flow	$ 41,000	0%	$ -	$ 41,000	$ 100
169	8-inch Loop between Vlahos & Canyon Creek	Fire Flow	$ 42,000	0%	$ -	$ 42,000	$ 100
170	8-inch Upgrade on Metolius cul-de-sac	Fire Flow	$ 54,000	0%	$ -	$ 54,000	$ 100
171	8-inch Loop on Metolius private drive	Operations	$ 20,000	0%	$ -	$ 20,000	$ 100
172	8-inch Upgrade on Middle Greens	Hydrant Coverage	$ 68,000	0%	$ -	$ 68,000	$ 200
173	Fairway Village Hydrant on French Prairie	Hydrant Coverage	$ 10,000	0%	$ -	$ 10,000	$ 100
175	16-inch Willamette River Crossing to Charbonneau District	Displace Charb. Tank	$ 1,532,000	0%	$ -	$ 1,532,000	$ 3,600
	Total Priority 1B Improvements		$ 2,476,500		$ 283,800	$ 2,192,700	$ 9,820

* Needed projects previously identified in 2002 Water Master Plan but not yet completed

** Colored/Bold ID #s are mapped on Figure 4 in Appendix A for reference

NOTE: Costs are in 2012 dollars

TABLE 5.2 – Priority Capital Improvements (Continued)

ID**	Item	Primary Purpose	Total Estimated Cost	Growth Apportionment %	Growth Apportionment Cost	Operating Fund	Additional Annual O&M
Priority 2 Improvements (by 2030)							
Water Supply							
203	Gesellschaft Well Generator	Operations	$ 78,000	0%	$ -	$ 78,000	$ 2,160
205	Charbonneau Well Mechanical Building	Operations	$ 81,000	0%	$ -	$ 81,000	$ 1,800
	Video Surveillance (various wells)	Operations	$ 22,000	0%	$ -	$ 22,000	$ 3,000
Booster Stations & Turnouts							
241	Meter Valve at Wilsonville Rd turnout	Operations	$ 118,000	0%	$ -	$ 118,000	$ 980
Water Distribution Piping							
260	10-inch Extension on 4th St. (E. of Fir)	Fire Flow	$ 69,000	7%	$ 4,900	$ 64,100	$ 200
261	8-inch Loop - Magnolia to Tauchman	Fire Flow	$ 59,000	0%	$ -	$ 59,000	$ 100
262	8-inch Upsize on Olympic cul-de-sac	Fire Flow	$ 44,000	0%	$ -	$ 44,000	$ 100
263	8-inch Loop near Kinsman/Wilsonville	Fire Flow	$ 36,000	0%	$ -	$ 36,000	$ 100
264	10-inch Loop near Kinsman/Gaylord	Fire Flow	$ 82,000	8%	$ 5,200	$ 76,800	$ 200
265	8-inch Upsize on Lancelot	Fire Flow	$ 100,000	0%	$ -	$ 100,000	$ 200
266	Fire Hydrants (main City)	Fire Flow	$ 119,000	0%	$ -	$ 118,000	$ 200
267	Fire Hydrants (Charbonneau)	Fire Flow	$ 46,000	0%	$ -	$ 46,000	$ 100
268	8-inch Loop near Kinsman (between Barber & Boeckman)	Fire Flow	$ 126,000	0%	$ -	$ 126,000	$ 200
269	8-inch Upsize near St. Helens	Fire Flow	$ 26,000	0%	$ -	$ 26,000	$ 100
270	8-inch Loop near Parkway Center/Burns	Fire Flow	$ 66,000	0%	$ -	$ 66,000	$ 100
271	8-inch Loop near Burns/Canyon Creek	Fire Flow	$ 110,000	0%	$ -	$ 110,000	$ 200
272	10 & 8-inch Loop near Parkway/Boeckman	Fire Flow	$ 315,000	4%	$ 12,600	$ 302,400	$ 500
273	12-inch Loop crossing Boeckman	Water Quality	$ 18,000	0%	$ -	$ 18,000	$ 100
274	8-inch Loop at Holly/Parkway	Water Quality	$ 58,000	0%	$ -	$ 58,000	$ 100
275	8-inch Upsize on Wallows	Fire Flow	$ 62,000	0%	$ -	$ 62,000	$ 100
276	8-inch Upsize on Miami	Fire Flow	$ 88,000	0%	$ -	$ 88,000	$ 200
277	8-inch Extension for hydrant coverage on Lake Bluff	Hydrant Coverage	$ 63,000	0%	$ -	$ 63,000	$ 100
278	8-inch Upsize on Arbor Glen	Hydrant Coverage	$ 92,000	0%	$ -	$ 92,000	$ 200
279	8-inch Loop at Fairway Village	Fire Flow	$ 42,000	0%	$ -	$ 42,000	$ 100
280	8-inch Extension for fire flow - private drive/Boones Bend	Fire Flow	$ 18,000	0%	$ -	$ 18,000	$ 100
281	8-inch Upsize on East Lake	Fire Flow/Hydrant	$ 187,000	0%	$ -	$ 187,000	$ 300
282	8-inch Extension for fire flow on Armitage Pl	Fire Flow	$ 55,000	0%	$ -	$ 55,000	$ 100
283	8-inch Upsize on Lake Point Ct	Hydrant Coverage	$ 56,000	0%	$ -	$ 56,000	$ 100
284	8-inch Loop - Franklin St to Carriage Estates	Water Quality	$ 94,000	0%	$ -	$ 94,000	$ 200
285	8-inch Upgrade on Boones Ferry Rd (south of 2nd St)	Replace/Upsize	$ 44,000	0%	$ -	$ 44,000	$ 100
288	Valves at Commerce Circle & Ridder Rd/Boones Ferry I-5 Crossing	Operations	$ 44,000	0%	$ -	$ 44,000	$ 100
	Total Priority 2 Improvements		$ 2,384,000		$ 22,700	$ 2,371,300	$ 13,140
Priority 3 Development Dependent Improvements (by Build-out)							
Water Distribution Piping							
381	Zone D Booster Station at C Level Tank	Growth	$ 609,000	100%	$ 609,000	$ -	$ 11,000
382	Upsize costs (greater than 8 inches) for future distribution piping	Growth	$ 9,659,000	100%	$ 9,659,000	$ -	$ 39,120
	Total Priority 3 Improvements		$ 10,268,000		$ 10,268,000	$ -	$ 50,120
	TOTAL CAPITAL IMPROVEMENTS (Priority 1-3)		$ 25,628,500		$ 21,008,700	$ 4,619,800	$ 98,560

* Needed projects previously identified in 2002 Water Master Plan, but not yet completed

** Colored/Bold ID #s are mapped on Figure 4 in Appendix A for reference

NOTE: Costs are in 2012 dollars

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6.0 OPERATIONS, MAINTENANCE, AND REPLACEMENT RECOMMENDATIONS

6.1 OVERVIEW

The City of Wilsonville was recently designated by the Oregon Health Authority, Drinking Water Program as an Outstanding Performer. Keller Associates also acknowledges the efforts of City staff to maintain a quality system.

This section highlights operational and maintenance related recommendations intended to improve or maintain the level of services as it pertains to the City's water distribution system, including booster pumping facilities, PRV stations, storage facilities, pipelines, valves, hydrants, well facilities, and controls. This section also summarizes major repairs and replacements anticipated within the 20-year planning period and provides recommended budgets for annual/recurring maintenance related activities. Operation and maintenance recommendations for the treatment plant are not included in this evaluation.

6.2 MAJOR REPAIRS AND REPLACEMENTS

In addition to the capital improvement projects identified in Chapter 5, Keller Associate identified several major repairs and replacements which are summarized in Table 6.1 (see also Figure 4, Appendix A). These have been organized by priority based on when the improvements are needed.

6.3 ONGOING AND ANNUAL MAINTENANCE COSTS

There are several larger routine maintenance activities, recurring system management related projects, and ongoing replacement/rehabilitation activities that are recommended on an annual or recurring basis. These activities are summarized in Table 6.2. Additional discussion about operational and maintenance activities is presented in the following sections.

TABLE 6.1 - Major Repairs and Replacements

ID#*	Item	Primary Purpose	Total Estimated Cost
Priority 1A (by 2017)			
Water Supply			
100	Nike Well Rehab & Misc. Maintenance	Maintenance	$ 30,000
101	Canyon Creek Well (assumes potential abandonment)	Maintenance	$ 28,000
102	Wiedeman Well Misc. Maintenance	Maintenance	$ 24,000
103	Boeckman Well Rehab Pump	Maintenance	$ 20,000
104	Gesellschaft Building Maintenance	Maintenance	$ 4,500
105	Elligsen Well Compressor & Controls	Maintenance	$ 8,000
Water Storage			
120	Elligsen Res. - Replace Ladder Fall Protection System	Replacement	$ 12,000
123	Charbonneau Reservoir Reseal between Roof and Wall	Maintenance	$ 4,000
Booster Stations & Turnouts			
141	B to C Booster Replacements	Replacement	$ 21,000
142	Painting & Safety Nets at Turnouts	Maintenance	$ 22,000
Priority 1B (by 2022)			
Water Storage			
127	Replace Sealant at Base of C Level Reservoir	Maintenance	$ 7,000
Booster Stations & Turnouts			
144	Replace Cover on Burns PRV	Replacement	$ 8,000
Priority 2 (by 2030)			
Water Supply			
200	Nike Well New Roof and Trim, Paint	Maintenance	$ 13,000
201	Wiedeman Well Replace Metal Siding	Maintenance	$ 20,000
202	Boeckman Well Pump Motor & Replace Roof and Trim	Replacement/ Maintenance	$ 21,000
203	Gesellschaft Well Roof Maintenance	Maintenance	$ 4,000
204	Elligsen Well MCC Replacement & Building Maintenance	Replacement/ Maintenance	$ 22,000
Water Distribution Piping			
287	Replace service lines - Parkway Ave	Replacement	$ 77,000
288	Replace service lines - Wilson cul-de-sacs	Replacement	$ 227,000
289	Replace service lines - Mariners Drive	Replacement	$ 22,000
290	Replace service lines - Old Town	Replacement	$ 15,000
Water Storage			
220	Paint Elligsen Reservoirs (interior)	Maintenance	$ 460,000
221	Paint C Level Reservoir (interior)	Maintenance	$ 180,000
Booster Stations & Turnouts			
240	Relocate Parkway PRV out of Elligsen Rd Intersection	Replacement	$ 75,000
Future (beyond 2030)			
Water Supply			
300	Nike Well - Replace MCC	Replacement	$ 15,000
301	Wiedaman Well MCC & Building Maintenance	Maintenance	$ 18,000
302	Gesellschaft Well Building Maintenance	Maintenance	$ 5,000
Water Storage			
320	Paint Elligsen Reservoirs (exterior)	Maintenance	$ 310,000
321	Paint C Level Reservoir (exterior)	Maintenance	$ 115,000
	TOTAL MAJOR REPAIRS AND REPLACEMENTS		**$ 1,788,500**

* Colored/Bold ID #s are mapped on Figure 4 in Appendix A for reference

NOTE: Costs are in 2012 dollars

TABLE 6.2 - Recurring Maintenance Costs

Activity	Budget	Frequency
Wash exterior of aboveground tanks	$5,000/each	Every 5 years
Clean and inspect interior of tanks	$5,000/each	Every 10 years
Pipeline and valve replacement (coordinate with planned street improvements, 1725 feet/year)	$ 173,000	Annual recommended budget for 20-year planning period
Meter replacement (250 meters/year)	$ 50,000	Annual recommended budget (assumes 20-year life)
Hydrant replacement (10 hydrants/year)	$ 30,000	Annual recommended budget
Well hole and facility upgrades/maintenance	$95,000-$105,000	Annual budget (includes 6 wells)
GIS and water model updates	$ 6,000	Recommended annual budget for 3rd party support
Water Master Plan update	$ 150,000	Every 5 years
Water Management and Conservation Plan (WMCP)	$ 20,000	Every 10 years, beginning 2022
WMCP progress reports	$ 5,000	Every 10 years, beginning 2017

6.4 BOOSTER PUMP STATIONS

The B to C Level Booster Pump Station is relatively new (constructed in 1999) and appears to be well maintained. Operation and maintenance related improvements include replacing the exhaust system for the generator and eventually upgrading the chlorine injection pump system to current model (refer to Technical Memorandum No. 1, Appendix B for additional details). Keller Associates recommends that the operations and maintenance manual be periodically updated and that the manufacturer's recommendations be followed for all equipment. Additionally, the City should ensure that each pump is exercised at least monthly and that pump performance is monitored.

The Charbonneau Booster Pump Station is much older than the B to C Level Booster Pump Station. The SCADA system does not currently turn on the booster pumps in the event of a low-pressure event (such as a fire). Automating this process would ensure that water would be provided in the event that the supply pipeline from the distribution system is out of service or not adequate to supply peak fire demands. Keller Associates recommends that the SCADA controls be upgraded to allow this flexibility and that this "alternate" control scenario be periodically tested. This improvement should be coordinated with the recommendation to provide a pressure relief to the pressure zone. The proposed new flow meter and system pressure readings should be integrated into the City's SCADA system. The meter readings should periodically be compared to the total of the individual water meters to quantify unaccounted for water within the District service area.

6.5 TANK FACILITIES

Maintenance recommendations for the tank facilities were also identified in Technical Memorandum No. 1. The exterior of each of the three aboveground reservoirs should be cleaned about every 5 years. Interior cleaning and inspection of each of the four reservoirs should occur every 10 years. Capital improvements recommended in the Technical Memorandum No. 1 will also ensure that the City's assets are maintained.

Keller Associates further recommends that the City look closely at controls in planning and designing the new West Side tank. During portions of the year, the City may want to increase the volume between pump on and off set points. This will ensure a higher tank turnover which will reduce the potential for water stagnation. Because of differences in locations, size and transmission piping, it is likely that the new water tank will not fill at the same rate as the Elligsen tanks. Altitude valves may be needed at the new tank site and potentially at the existing Elligsen tanks. Special care should be taken so that any added control valves would be installed in such a way as to mitigate the potential of creating system pressure surges.

6.6 DISTRIBUTION SYSTEM

Flushing

The City currently has an active flushing program. The program could be enhanced by developing a directional flushing program, which is a systematic approach to exercising valves and hydrants in a way that encourages water to be flushed from one side of the system to the other.

Valve Exercise

All valves should be exercised at least annually.

Pressure Reducing Valves

Pressure reducing valve settings should be checked every 6 to 12 months. The valves should also be refurbished every 2 to 5 years as needed.

Leak Detection

The City currently has an active leak detection and elimination program which should continue as long as unaccounted for water loss exceeds 10 percent of the City's total finish water production.

Meter Testing Program

The City should continue their program of regularly testing and replacing (as required) large diameter flow meters on a 3-year cycle. The City should also begin testing residential meters beginning with 100± meters per year. Records should be kept reporting meter ID, age, and accuracy. The frequency and number of residential meters to be tested should be adjusted based on meter testing results.

Pipeline, Valve, Hydrant and Meter Replacement Programs

The City has been proactive in their replacement programs. Replacement budgets for pipelines, valves, hydrants, and meters were developed in Technical Memorandum No. 1. Replacing older infrastructure will result in less unaccounted for water and continued high levels of service. Emphasis should be given to replacing pipelines in areas with lower levels of fire protection, and where older, more problematic cast iron pipelines exist as reflected on the Priority Improvements Map (Figure 4, Appendix A). Wherever possible, replacements should be coordinated with planned street improvements to minimize construction costs.

Remaining infrastructure life and replacement budgets should be reevaluated every five years.

Unaccounted for Water

Keller Associates recommends that the City continue to track and investigate unaccounted for water. A special, stand-alone study may be needed to fully resolve lingering issues with meter accuracy and unmetered uses. Emphasis should be given to the volume of water, rather than just the percent. Unaccounted for water should be tracked monthly to allow development of winter/summer and 12-month moving averages. Efforts to isolate portions of the City to investigate water loss for geographic regions could be spearheaded by City staff and will take coordination between engineering, water, and billing departments.

6.7 WELL FACILITIES

The well facilities are intended to serve as a backup supply, but have not been used with regularity since the new water treatment plant came on line several years ago. The wells are exercised on a weekly basis for a short period of time, but the operational time is inadequate to ensure the wells can operate in production mode, if needed. To ensure that these facilities are in proper working order for emergency supply, several capital improvements were identified in Technical Memorandum No. 5 (Appendix B). The technical memorandum also identified several operational improvements which include:

- Regular well pump exercise, for longer periods of time, including exercising the pump against back pressures similar to what they would experience if they were to pump into the distribution system.
- Training of operations staff and periodic simulations of emergencies (every 6-12 months). Ideally, these wells could actually be pumped into the system, even if the system is temporarily valved off and the flow is discharged via a nearby hydrant. This will ensure that the facilities are ready when they are needed.
- Upgrades to the SCADA system.
- Annual monitoring of flow capacities, and periodic well casing cleaning/refurbishing to preserve pump delivery capacities.
- Continued servicing of generators.

6.8 MISCELLANEOUS

The City's GIS database and AutoCAD (engineering) database contained different, conflicting and missing data (pipe age, pipe material, meter IDs, etc.). Keller Associates compared and updated the mapping to include a GIS-based map that captured the most updated and accurate data. This file should serve as the starting point for future mapping updates and provide the basis for a single database to be used by engineering and GIS staff. Keller Associates further recommends that the unique water meter ID for every water meter be used both in the billing system and within the GIS. This will allow the City to accurately allocate demands spatially

within a system, which can be helpful in identifying areas where higher water loss may occur and can facilitate future upgrades to the City's water model.

The City's SCADA system should be continually updated to include reporting, trending, alarm features, etc. as needed.

Keller Associates recommends that the City's water model be updated annually and that this water master plan be updated every 3 to 5 years, depending on growth. Additionally, the City's Water Management and Conservation Plan (WMCP), is required by the Oregon Administrative Rules to be updated every ten years, with progress reports completed five years after each WMCP. The current (2004) WMPC is being updated, with completion scheduled for summer/fall 2012. Completing these planning documents in a timely manner will be important in ensuring that future water rights are protected and infrastructure is planned and scheduled to provide for the City's future needs.

6.9 STAFFING AND BUDGET IMPLICATIONS

The scope of this study did not include a rate study or an evaluation of existing and future staffing needs. However, the City should be aware that many of the recommendations may require additional staff time and materials or reallocation of resources. Specific activities anticipated to affect staffing requirements include: additional tracking of unaccounted for water usage, GIS mapping, residential meter testing, developing a directional flushing program, servicing pressure reducing valves, and rehabilitation and replacement of the distribution systems.

In completing any future rate analysis, the City should account for the items identified in the Capital Improvement Plan (Table 5.2), the list of Major Repairs and Replacements (Table 6.1), and the Recurring Maintenance Costs (Table 6.2). Increased staffing and operations and maintenance requirements will also occur as a result of normal growth, and this document assumes the City intends to provide a slightly increased level of service going forward. However, policy decisions made during the annual budget process or during the development of the rate study, or both, will ultimately determine acceptable staffing and budget levels, and the associated timing of certain improvements.

KELLER associates

7.0 POLICIES AND IMPLEMENTATION MEASURES

The City's Comprehensive Plan provides the context within which the water master plan has been developed. Efforts have been made to solicit citizen input and coordinate with other agencies and organizations consistent with Comprehensive Plan Goal 1:2. Planning for the area within the Urban Growth Boundary has been completed consistent with Comprehensive Plan Goal 2.1. This section summarizes recommended policies and implementation measures relative to the water system. Where the 2011 Comprehensive Plan appears to pre-date the January 2002 Water System Master Plan, this section incorporates applicable policy and implementation measures previously recommended. The primary goal of the water master plan is derived from Wilsonville's Comprehensive Plan Goal 3.1 providing for infrastructure in general and is as follows:

> **To assure that good quality public facilities and services are available with adequate capacity to meet community needs, while also assuring that growth does not exceed the community's commitment to provide adequate facilities and services.**

The Comprehensive Plan also provides the following policies that were used to guide this master plan update:

> **Comprehensive Plan Policy 3.1.1.** The City of Wilsonville shall provide public facilities to enhance the health, safety, educational, and recreational aspects of urban living.
>
> **Comprehensive Plan Policy 3.1.2.** The City of Wilsonville shall provide, or coordinate the provision of, facilities and services concurrent with need (created by new development, redevelopment, or upgrades of aging infrastructure).
>
> **Comprehensive Plan Policy 3.1.3.** The City of Wilsonville shall take steps to assure that the parties causing a need for expanded facilities and services, or those benefiting from such facilities and services, pay for them.
>
> **Comprehensive Plan Policy 3.1.5.** The City shall continue to develop, operate and maintain a water system, including wells, pumps, reservoirs, transmission mains and a surface water treatment plant capable of serving all urban development within the Incorporated City limits, in conformance with federal, state, and regional water quality standards. The City shall also continue to maintain the lines of the distribution system once they have been installed and accepted by the City.

Policy 3.1.5 provides the most specific direction relative to the water system and includes the following implementation measures:

Implementation Measure 3.1.5.a The City shall review and, where necessary, update the Water System Master Plan to conform to the planned land uses shown in the Comprehensive Plan and any subsequent amendments to the Plan.

Implementation Measure 3.1.5.b All major lines shall be extended in conformance to the line sizes indicated on the Master Plan and, at a minimum, provisions for future system looping shall be made. If the type, scale and/or location of a proposed development negatively impacts other existing properties or warrants minimum fire flows above that currently available to the development, the Development Review Board may require completion of looped water lines, off-site piping, and/or pipeline replacement in conjunction with the development.

Implementation Measure 3.1.5.c Extensions shall be made at the cost of the developer or landowner of the property being served. When a major line is extended that is sized to provide service to lands other than those requiring the initial extension, the City may:

1. Authorize and administer formation of a Local Improvement District to allocate the cost of the line improvements to all properties benefiting from the extension; or
2. Continue to utilize a pay-back system whereby the initial developer may recover an equitable share of the cost of the extension from benefiting property owners/developers as the properties are developed.

Implementation Measure 3.1.5.d All water lines shall be installed in accordance with the City's urban growth policies and Public Works Standards.

Implementation Measure 3.1.5.e The City shall continue to use its Capital Improvements Program to plan and schedule major water system improvements needed to serve continued development (e.g., additional water treatment plant expansions, transmission mains, wells, pumps and reservoirs).

Keller Associates recommends modifying Implementation Measure 3.1.5.b as follows:

Implementation Measure 3.1.5.b All major lines shall be extended in conformance to the line sizes indicated on the Master Plan and, at a minimum, provisions for future system looping shall be made. If the type, scale, and/or location of a proposed development negatively impacts operating pressures or available fire flows to other properties as determined by the City Engineer, the Development Review Board may require completion of looped water lines, off-site facilities, pipelines, and/or facility/pipelines to achieve or maintain minimum pressures or fire flows as a condition of development approval.

Additional recommended policies and implementation measures are presented below. These policies were developed previously as part of the 2002 Water Master Plan, but are not incorporated into the current (January 2011) Comprehensive Plan Update.

Proposed Policy 3.1.6 The City of Wilsonville shall continue a comprehensive water conservation program to make effective use of the water infrastructure, source water supply and treatment processes.

Proposed Implementation Measure 3.1.6.a The City will track system water usage through production metering and service billing records and take appropriate actions to maintain a target annual average unaccounted for water volume of less than 10% of total production.

Proposed Implementation Measure 3.1.6.b The City will maintain other programs and activities as necessary to maintain effective conservation throughout the water system.

Proposed Policy 3.1.7 The City of Wilsonville shall maintain an accurate user demand profile to account for actual and anticipated demand conditions in order to assure an adequately sized water system.

Proposed Implementation Measure 3.1.7.a The City will track system water usage through production metering and service billing records and take appropriate actions to maintain a target annual average unaccounted for water volume of less than 10% of total production.

Proposed Implementation Measure 3.1.7.b The City will maintain other programs and activities as necessary to maintain effective conservation throughout the water system.

Proposed Policy 3.1.8 The City of Wilsonville shall coordinate distribution system improvements with other CIP projects, such as roads, wastewater, and storm water, to save construction costs and minimize public impacts during construction.

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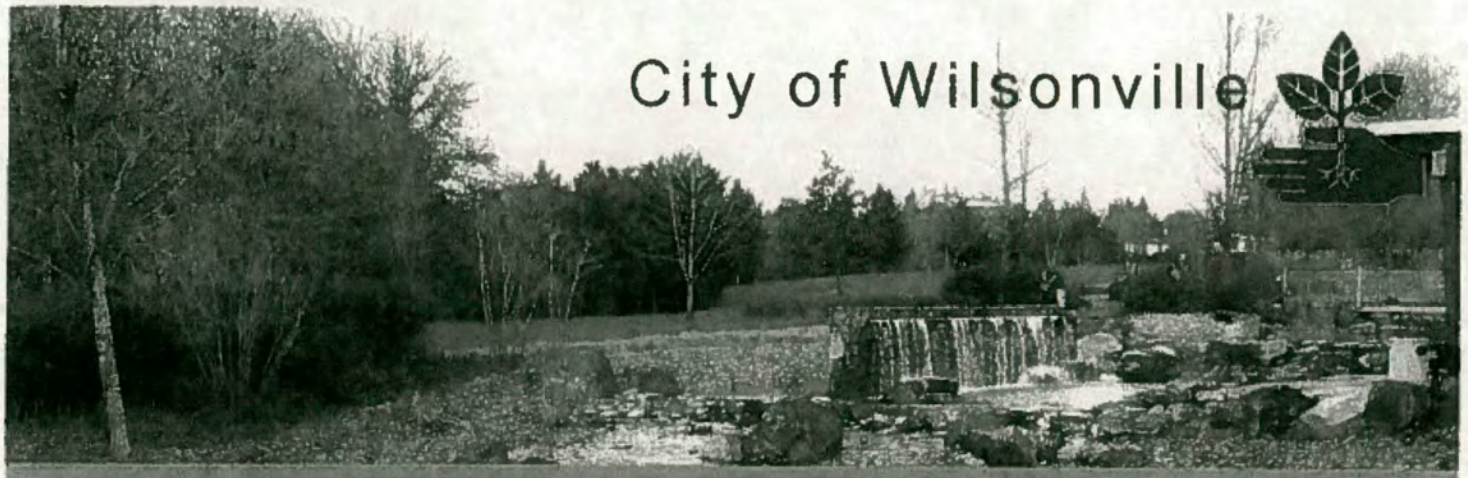

City of Wilsonville

KELLER associates

APPENDIX A – FIGURES

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Figure:	Title:		Prepared for:	
1	Existing City Distribution System	WATER MASTER PLAN	CITY OF WILSONVILLE, OR	KELLER associates

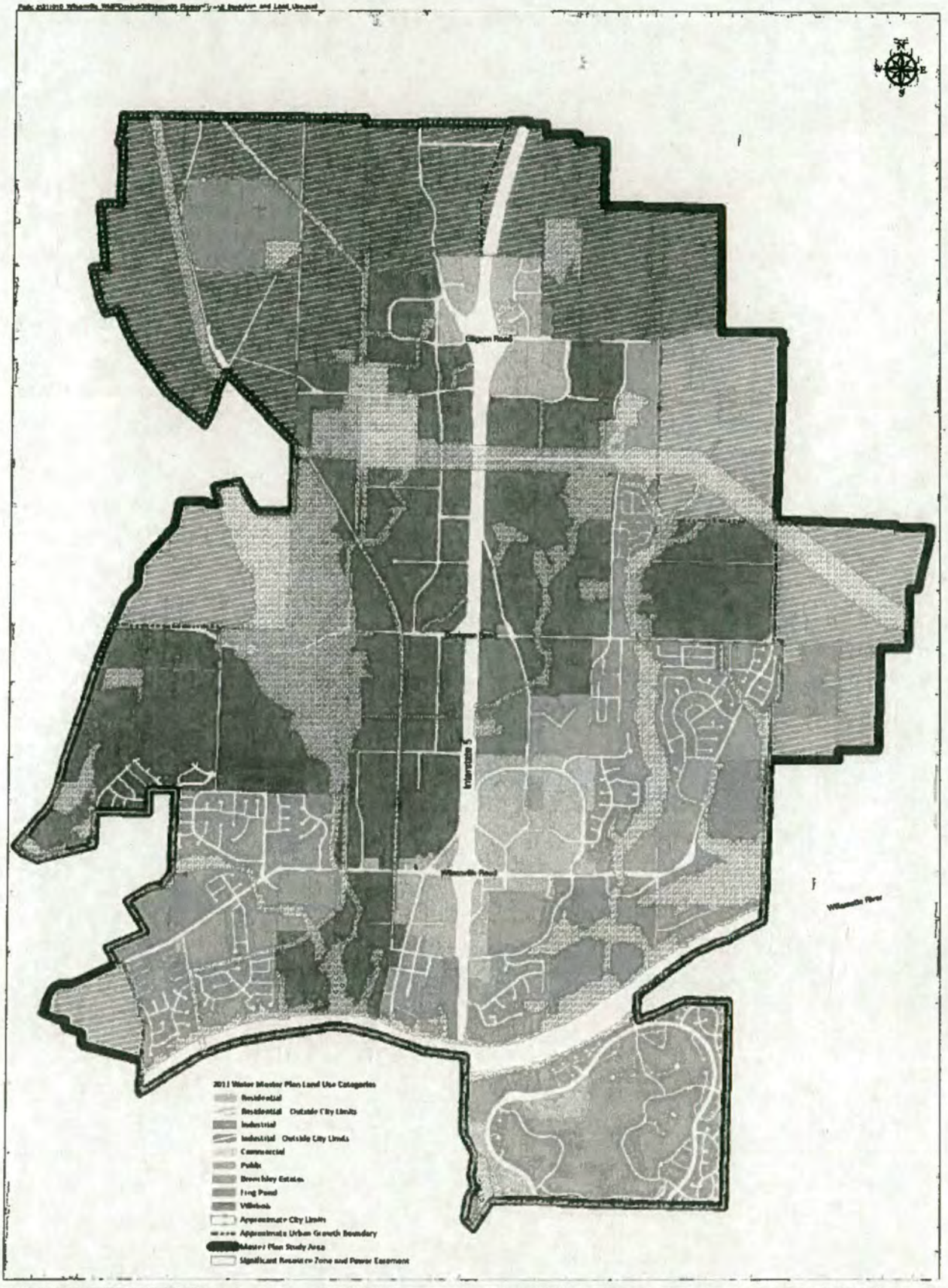


Figure:	Title:		Prepared for:	
2	Study Area & Land Use	WATER FACILITIES MASTER PLAN	CITY OF WILSONVILLE, OREGON	KELLER associates

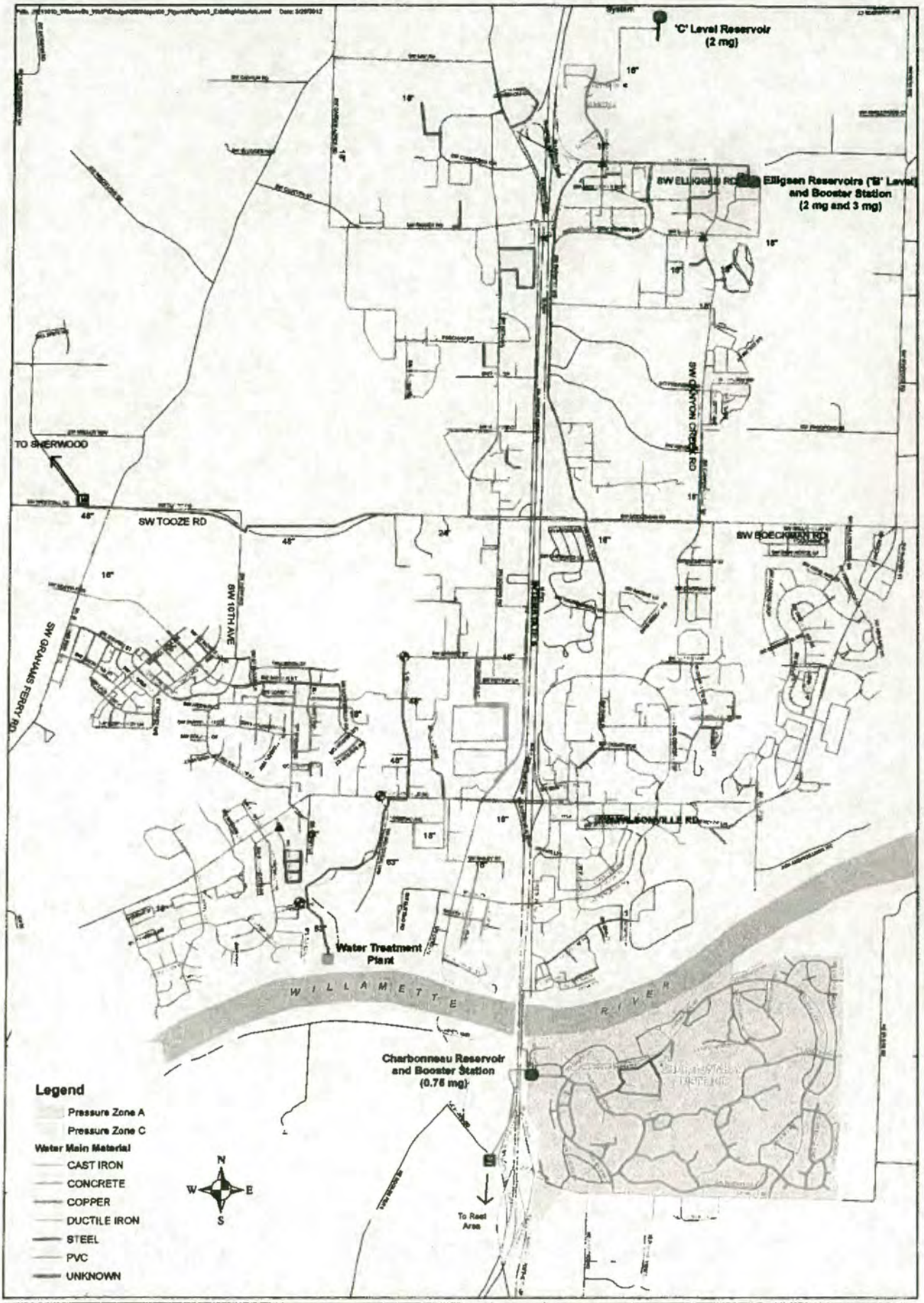


Figure:	Title:		Prepared for:	
3	Existing System: Pipe Materials	WATER MASTER PLAN	CITY OF WILSONVILLE, OR	KELLER associates

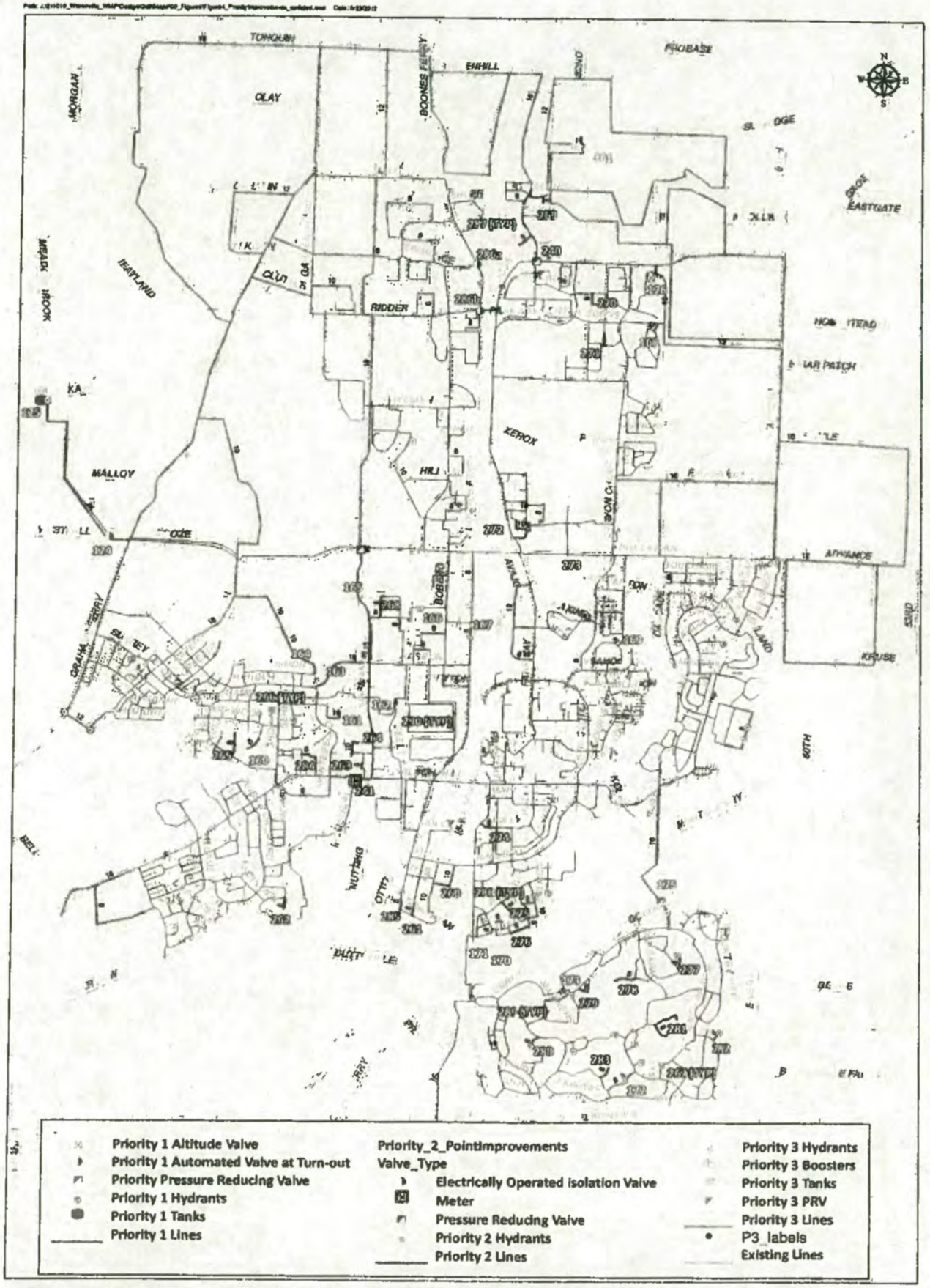
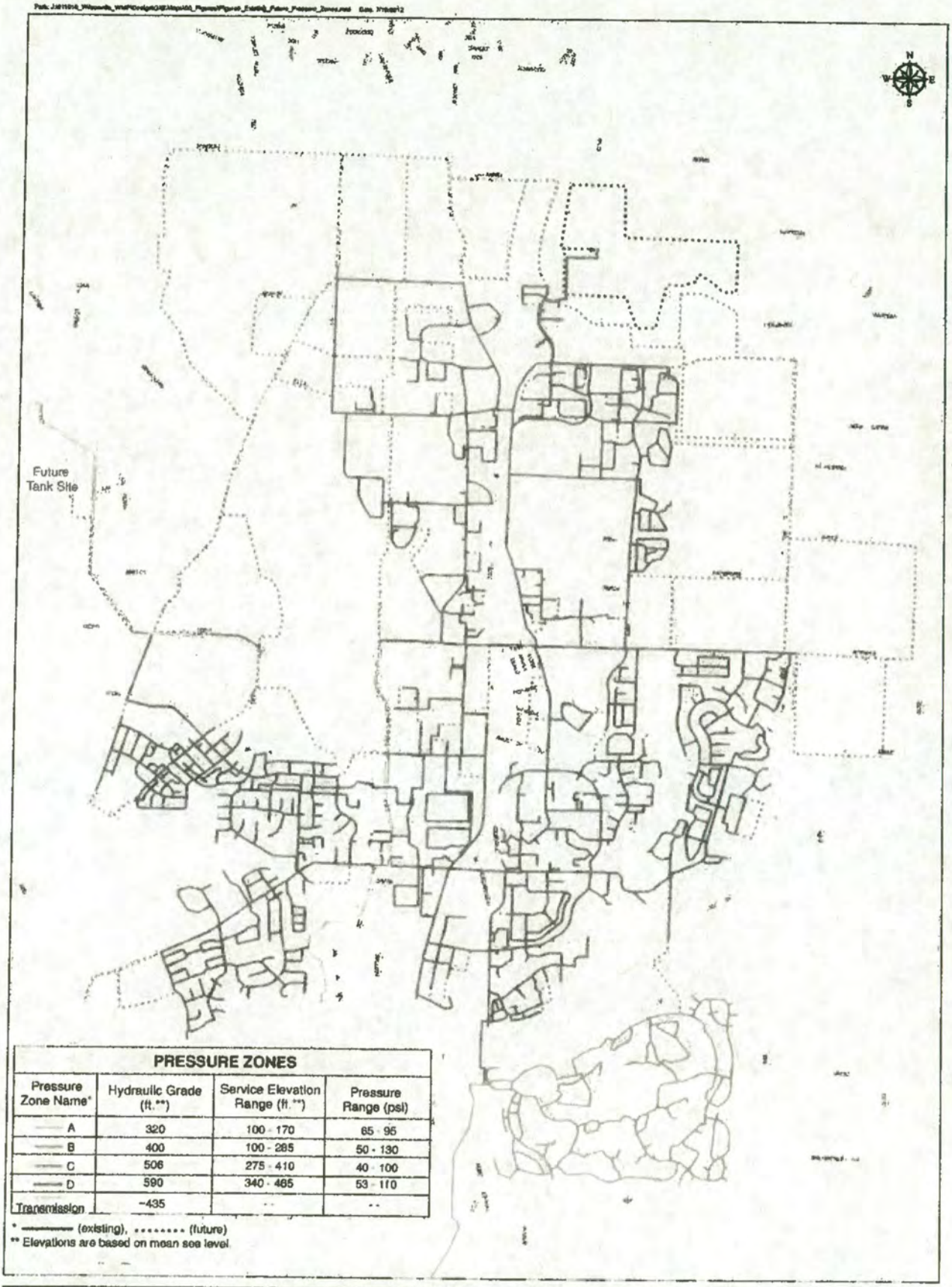


Figure:	Title:		Prepared for:	
4	Priority Improvements and Replacements	**WATER FACILITIES MASTER PLAN**	**CITY OF WILSONVILLE, OREGON**	KELLER associates



PRESSURE ZONES			
Pressure Zone Name*	Hydraulic Grade (ft.**)	Service Elevation Range (ft.**)	Pressure Range (psi)
A	320	100 - 170	65 - 95
B	400	100 - 285	50 - 130
C	506	275 - 410	40 - 100
D	590	340 - 465	53 - 110
Transmission	~435	--	--

* ——— (existing), ... (future)
** Elevations are based on mean sea level.

Figure:	Title:		Prepared for:	
5	Existing and Future Pressure Zones	WATER FACILITIES MASTER PLAN	CITY OF WILSONVILLE, OREGON	KELLER associates

NOTICE OF DECISION

PLANNING COMMISSION

RECOMMENDATION OF APPROVAL TO CITY COUNCIL

FILE NO.: **LP12-0002**

APPLICANT: **City of Wilsonville**

REQUEST: **Update of the City's Water System Master Plan that documents current water demand, evaluates current system deficiencies, estimates future water demands over a 20-year growth horizon, and estimates the capital and operation costs needed to meet these future demands.**

After conducting a public hearing on July 11, 2012, the Planning Commission voted to recommend this action to the City Council by passing Resolution No. LP12-0002.

The City Council is scheduled to conduct a Public Hearing on this matter on August 20, 2012, at 7:00 p.m., at the Wilsonville City Hall, 29799 SW Town Center Loop East.

For further information, please contact the Wilsonville Planning Division, 29799 SW Town Center Loop East, or telephone (503) 682-4960.

LP12-0002
Water System Master Plan Update
Planning Commission Record Index

Planning Commission Actions from the July 11, 2012 public hearing:

- Notice of Decision
- Resolution No. LP12-0002
- Motion
- Minutes (DRAFT)

Distributed at the July 11, 2012 Planning Commission public hearing:

Exhibit E:	An email from Eldon Johansen, dated July 8, 2012, regarding Water System Master Plan
Exhibit F:	A letter dated July 9, 2012 from Stanley Wallulis, with attachments.
Exhibit G:	Paper copy of the PowerPoint, *Water System Master Plan*, shown at the meeting

Staff Report dated July 3, 2012, for a July 11, 2012 Planning Commission Public Hearing including:

Exhibit A:	Water System Master Plan Final Draft dated June 26, 2012 *(Located in the Planning Division.)*
Exhibit B:	CD with Water System Master Plan Final Draft and Appendices dated June 26, 2012.
Exhibit C:	Proposed Changes to Existing Comprehensive Plan Policies
Exhibit D:	An email dated June 21, 2012, from Sherry Oeser of Metro, regarding Wilsonville Water System Master Plan.

LP12-0002
Water System Master Plan Update
Planning Commission Record Index

Planning Commission Actions from the July 11, 2012 public hearing:

- Notice of Decision
- Resolution No. LP12-0002
- Motion
- Minutes (DRAFT)

NOTICE OF DECISION

PLANNING COMMISSION

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PLANNING COMMISSION
RESOLUTION NO. LP12-0002

A WILSONVILLE PLANNING COMMISSION RESOLUTION RECOMMENDING THAT THE CITY COUNCIL ADOPT AN UPDATE OF THE CITY'S WATER SYSTEM MASTER PLAN (PLAN) THAT DOCUMENTS CURRENT WATER DEMAND, EVALUATES CURRENT SYSTEM DEFICIENCIES, ESTIMATES FUTURE WATER DEMANDS OVER A 20-YEAR GROWTH HORIZON, AND ESTIMATES THE CAPITAL AND OPERATION COSTS NEEDED TO MEET THESE FUTURE DEMANDS.

WHEREAS, the Wilsonville Planning Director submitted proposed Ordinance amendments to the Planning Commission, along with a Staff Report, in accordance with the public hearing and notice procedures that are set forth in Sections 4.008, 4.010, 4.011 and 4.012 of the Wilsonville Code (WC); and

WHEREAS, the Planning Commission conducted work sessions on March 14, 2012 and May 9, 2012, and after providing the required notice, held a Public Hearing on July 11, 2012 to review the proposed update to the Water Systems Master Plan and to gather additional testimony and evidence regarding the Plan; and

WHEREAS, the Commission has afforded all interested parties an opportunity to be heard on this subject and has entered all available evidence and testimony into the public record of their proceeding; and

WHEREAS, the Planning Commission has duly considered the subject, including the staff recommendations and all the exhibits and testimony introduced and offered by all interested parties; and

NOW, THEREFORE, BE IT RESOLVED that the Wilsonville Planning Commission does hereby adopt the Staff Report along with the findings and recommendations contained therein and, further, recommends that the Wilsonville City Council approve and adopt the Water System Master Plan update as hereby approved by the Planning Commission; and

BE IT RESOLVED that this Resolution shall be effective upon adoption.

ADOPTED by the Planning Commission of the City of Wilsonville at a regular meeting thereof this 11th day of July, 2012, and filed with the Planning Administrative Assistant on July 12, 2012

Ben Altman

Wilsonville Planning Commission

Attest:

Linda Straessle, Administrative Assistant III

SUMMARY of Votes:

Chair Altman:	Aye
Commissioner Postma:	Aye
Commissioner Dvorak:	Absent
Commissioner Hurley:	Aye
Commissioner Levit:	Aye
Commissioner McGuire:	Aye
Commissioner Phelps:	Aye

PLANNING COMMISSION
WEDNESDAY, JULY 11, 2012
6:00 P.M.

Wilsonville City Hall
29799 SW Town Center Loop East
Wilsonville, Oregon

MOTIONS

VI. PUBLIC HEARING

A. **LP12-0002 - Water System Master Plan update.** The Plan documents current water demand, evaluates current system deficiencies, estimates future water demands over a 20-year growth horizon, and estimates the capital and operation costs needed to meet these future demands. **The Planning Commission action is in the form of a recommendation to the City Council.** (Mende)

The following exhibits were entered into the record:

- Exhibit E: Email from Eldon R. Johansen dated July 8 2012 regarding concerns about how the Water System Master Plan ties into the City planning process and to any pending water rate and SDC study update.
- Exhibit F: Letter from Wallulis & Associates dated July 9, 2012 along with six pages of review notes responding to the Water System Master Plan with resume attached.

Commissioner Postma moved to adopt the Staff Report, with the amended Implementation Measure 3.1.5.b, as stated by Mr. Dan Pauly, and to recommend approval of the Water Master Plan, with modifications of multiple items as follows:

- **Consolidate and simplify the cost benefit analysis for available options to address Charbonneau's short- and long-term supply and flow issues as discussed and addressed by Commissioner Phelps.**
- **Include the note with regard to the chart on Page 17 of the draft Water System Master Plan (Exhibit A) for large capital items listed in Priority Items 1A that were previously included in the prior Master Plan as indicated by Commissioner McGuire.**
- **Include the suggested revisions or corrections as addressed by Commissioner Levit.**
  - * **Correct the third line under ES.2.5 on Page ES.6 to state "(TVWD)".**
  - * **Include Motor Control Center (MCC), used in Table ES.4 for Items 300 & 301, in the table of acronyms.**
- **Include the cost benefit of abandoning versus maintaining wells as noted by Commissioner Hurley.**
- **Include the correction of typographical errors addressed by Mr. Wallulis in Exhibit F.**

Commissioner Hurley seconded the motion, which passed unanimously.

Commissioner Postma moved to adopt Resolution LP12-0002 with the adopted Staff report as amended. Commissioner Hurley seconded the motion, which passed unanimously.

Respectfully submitted,

By Paula Pinyerd of ABC Transcription Services, Inc. for
Linda Straessle, Planning Administrative Assistant

PLANNING COMMISSION
WEDNESDAY, JULY 11, 2012
6:00 P.M.

Wilsonville City Hall
29799 SW Town Center Loop East
Wilsonville, Oregon

Minutes Excerpt

I. CALL TO ORDER - ROLL CALL

Chair Altman called the meeting to order at 6:02 p.m. Those present:

Planning Commission: Ben Altman, Ray Phelps, Eric Postma, Al Levit, and Peter Hurley. Marta McGuire arrived after Item VII.B Commissioner Comments. Amy Dvorak was absent.

City Staff: Barbara Jacobson, Daniel Pauly, Eric Mende and Steve Munsterman

VI. PUBLIC HEARING

A. **LP12-0002 - Water System Master Plan update**. The Plan documents current water demand, evaluates current system deficiencies, estimates future water demands over a 20-year growth horizon, and estimates the capital and operation costs needed to meet these future demands. **The Planning Commission action is in the form of a recommendation to the City Council.** (Mende)

Chair Altman read the Legislative Hearing procedures into the record.

Barbara Jacobson, Assistant City Attorney, noted that the land use notice sent to numerous property owners pursuant to ORS 227.186, notifying people of the public hearing, was properly dated with today's date, but the date in the body of the notice incorrectly stated that this public hearing had taken place on June 13, 2012, which should have been corrected. The only applicable date is July 11, 2012.

Chair Altman called for the Staff report.

Daniel Pauly, Associate Planner, stated the last update to the Water Systems Master Plan was in 2002 and Staff has gathered a large amount of utility data and data from the Public Works crews to gain a comprehensive look at the existing water systems in the community. Forecasting data was also gathered from Metro and past efforts by the City, which included urban reserve areas, to determine the future development needs in each area. The Master Plan update considered maintenance and capital improvements to the current system in light of that forecasted growth, so the Plan would guide water system projects in the community for many years.

Eric Mende, Deputy City Engineer, introduced the Water System Master Plan, noting the extensive community and public involvement prior to the hearing, which included two briefings to the Planning Commission, a public open house held at the Water Treatment Plant and one City Council briefing. Another briefing was scheduled for City Council on July 16, 2012. Staff had taken the required steps to notify the public and obtain significant input on the Master Plan.

- He reviewed the changes made following direction received from the Planning Commission at the last work session as follows:
  - The Executive Summary had been revised to be more friendly and readable for the general public and included a list of acronyms and abbreviations. The Executive Summary also included more focus on the positive aspects of the existing distribution system.
  - Additional text and stronger recommendations for addressing unaccounted for water is included in Chapter 2.3 and Chapter 7 under proposed Policy 3.1.6.
  - Revisions were made to the Capital Improvement Program (CIP) to breakout repair and replacement projects from growth-related capital improvement projects. The capital improvement priority list was also revised to include a category that matches the general 5-year CIP process. This information was included in the Executive Summary as well as in Chapter 5.
  - Additional text was added to Section ES 2.4 of the Executive Summary and Section 3.6 in the main document to reflect the Commission's strong recommendation not to abandon any water rights associated with any wells.
  - Figure 3.1 Localized Fire Flow Deficiencies was corrected to show the short falls as a percentage with the red dots replaced by smaller yellow, orange and purple dots.

Jeff Bledsoe, Keller & Associates, presented the Water System Master Plan via PowerPoint with the following key additional comments and addressed questions from the Commission as noted:

- Overall, Wilsonville's current water system is in very good condition, and probably one of the best systems he has seen, which was a testament to City Staff as well as those involved in previous water system planning efforts for the City.
- A Master Plan update was required because the existing Plan is outdated and the new Water Treatment Plant created major changes to the demands in the system. Residents no longer have to deal with moratorium conditions, declining aquifers, or water use restrictions. Updating the Master Plan also met the Comprehensive Plan Goal 3.1 to assure good quality facilities and services are available.
- Full development of all the City's build out areas were considered, using both population and commercial growth projections, to predict corresponding water flows and demands.
- The City currently has more than 100 miles of distribution piping, most of which is relatively new in the last 30 years. Three main pressure zones provide water to the citizens: a small pressure zone in the north, the main pressure zone, referred to as Level B and the third zone is in the Charbonneau District.
- He confirmed that even with the water treatment plant, the four storage reservoirs are still needed for emergency storage and handling peaks that occur throughout the day.
- Substantial data was used in the water usage analysis, which considered how water usage varies throughout the seasons, times of the day, and according to land use.
  - Wilsonville has a lot of commercial water usage, which reflected the type of land use in the community. Compared to other cities similar in size, Wilsonville had a disproportionate amount of commercial water usage.
  - The difference between the water sold and the water produced, shown on Slide 5, indicated the unaccounted for water, which has been between 15% and 17% over the last couple of years. Typically, unaccounted for water should be below 10%.
  - The consultants have worked with the City in trying to identify the sources for the unaccounted for water. One potential source was the large meter that meters the water leaving the water treatment plant, which may account for as much as 3% of the unaccounted for water. Addressing other identified sources could bring the amount of unaccounted for water down to about 13.5%. The Master Plan identifies specific steps the City should take to reduce unaccounted for water further.
- He agreed irrigation might be related to a large portion of the unaccounted for water. The study found a large account with a meter that was not working and had not been recording the water usage for some time. That account also had a lot of irrigation water usage. With increased water usage in the summer, there is a larger potential for more unaccounted for water in the summer.

- Mr. Mende added that most of the system is metered, including most of the irrigation usage. Larger commercial and industrial properties have both a domestic meter and an irrigation meter, which was why meters were looked at specifically as a potential large source of the errors being seen. As far as irrigation usage, both single- and multi-family properties, except large apartment complexes, do not have individual irrigation meters.

Commissioner Hurley asked if the City would consider physically looking at smaller commercial accounts by hand to see if their water usage made sense. Comparing usage to five or ten years ago might reveal some obvious discrepancies. The city was small enough that a hand tally should only take a week to complete.

- Mr. Bledsoe stated the larger meters are being checked and calibrated. Often, problems are tied to larger meters, such as the meters being oversized. These ideas have been discussed with the City, which had a good vision about how to move forward.
- Mr. Mende said discussions would return to the issue of unaccounted for water when finances, capital improvements and operating costs are discussed. Steve Munsterman from Public Works could address any specific technical questions.

Commissioner Levit noted the apparent spike in the summer with irrigation was proportionally no different from water usage in April or May. Water usage was consistent through the year in terms of a percentage.

- Mr. Bledsoe explained another recommendation was that the City track usage as a volume, not necessarily just as a percentage, and to do a 12-month moving average. Water usage in April and May is almost identical to water usage in October. Sometimes billing cycles do not match the demand. Therefore, a 12-month moving average provides a better picture of actual water loss.

Commissioner Phelps:

- Asked how unaccounted for water compared to other metered services like gas and electricity. Having unaccounted for water at 15 to 17 percent was surprising and seemed high. He questioned if there could be a quality issue related to meter maintenance.
  - Mr. Bledsoe replied he did not know about the losses related to gas and electric, but 10 percent was the standard for unaccounted for water established by State. Some formulas establish the lower limit that a city could really attain. Considering the City's system pressures, the miles of pipe and the number of service lines some leaks have to be anticipated; even pinhole leaks on 107 miles of pipe add up. The analysis for Wilsonville showed a lower limit of about 5 percent, so getting below 10 percent is the target, but getting below 5 percent was not very realistic. Some communities are much worse than Wilsonville, such as Stayton, which was at 35 percent; Amity at 40 percent and Gates at 20 percent.
- Noted the rate payers were paying for that 17 percent loss, so the City should probably be more aggressive to reduce the loss to 10 percent or less.

Mr. Bledsoe continued his presentation, discussing the methodology used to project water system demands for the future and noting the average daily demand could potentially grow from 2.2 million gallons per day (mgd) to 28 mgd, which also included Sherwood. Excluding Sherwood's use, Wilsonville's demand would be about 8 mgd for build out.

- He confirmed that the 2.9 and 3.5 percent reflected the compound annual residential and nonresidential growth rates, respectively. Sherwood was factored in because of the demand placed on Wilsonville's water system in terms of the main transmission pipeline from the plant and the plant itself.
- Mr. Mende explained that the City of Sherwood currently owns only 5 mgd, but the City projects Sherwood would purchase additional water rights, which are available for purchase through the Tualatin Valley Water District. The City of Wilsonville owns 20 mgd of water rights. The source of water would still be the Willamette River at the Treatment Plant, where the water would still be treated and then transmitted through the 48- or 63-inch transmission line to Sherwood's pipeline, which does have the capacity. He confirmed that Tualatin Valley Water District was not currently drawing any water.

Commissioner Levit confirmed that a linear growth model was used because nothing better was available and noted the report said that things had changed below what the previous expectations were possibly due to conservation measures. He asked if a substantial amount would be gained by future conservation measures, notwithstanding the unaccounted for water.

- Mr. Mende explained the study did assume a linear growth rate by averaging or taking the data from 2000 to 2010 and turning it into a linear growth rate. The growth rate that was estimated in the 2002 master plan was significantly higher and showed water usage in 2010 at an average of 8 to 9 mgd; however, the city was currently using about 3.1 mgd. The previous growth assumptions were very aggressive and did not hold true, so the methodology was changed to use actual growth rate numbers. While the last few years have been a bit of an economic downturn for growth of Wilsonville, those years were preceded by boom growths. Based on averages, Staff was comfortable with the growth assumptions.
- Mr. Bledsoe added the projected population for 2030 was consistent with other planning documents adopted by the City. He explained that some reduction in demands per capita could be achieved through conservation. However, the study did not assume any reductions moving forward to be conservative. It is common for communities to achieve 5 percent to 15 percent reduction based on education, improved irrigation practices, etc. Conservation is encouraged and is one of the recommended Comprehensive Master Plan policies.
- Mr. Mende explained the previous per capita usage estimates were changed based on what has occurred over the last ten years. The significant amount of conservation due to water saving measures, conservation and low water usage toilets and showerheads, was taken into account, but no additional conservation measures were assumed.
- Mr. Bledsoe noted increased water rates are the most effective means of reducing water consumption; however, a rate analysis was not part of this study. Many communities have inclining blocks of rates that encourage conservation.

Mr. Bledsoe explained that as the distribution system was evaluated, a model was created using GIS that linked demands to parcels throughout the system, resulting in a highly accurate distribution of those demands and a very good calibration of the system, meaning field conditions were matched very well to the model conditions.

- The system had no pressure deficiencies, even in peak hour conditions.
- Less than 5 percent of the pipelines, node or junctions had fire flow deficiencies. The desired amounts were 1,500 gallons per minute (gpm) for residential areas and 3,000 gpm for commercial and industrial areas.
  - The deficient areas with a greater than 50 percent shortfall were shown in magenta on Figure 3.1 Localized Fire Flow Deficiencies (Slide 7). Many of these areas were close to other areas that meet fire criteria. Localized improvements could be completed to bring the entire system up to standard.
- In terms of water storage, the water treatment plant should be designed to handle only a high average or daily peak demand. Any extra demand that might occur, like when everyone turns their sprinklers on or when people get home in the evenings, should be handled by peaking storage.
- Operating storage is the difference between the on and offset points in the tank, and 10 percent is good to encourage circulation in the tanks. Fire storage is governed by the fire authority for the City of Wilsonville, which is 3,000 gpm for four hours, in addition to the emergency storage. For Wilsonville, emergency storage was calculated using two days of average day demand instead of three, because Wilsonville has backup wells that provide an alternative source of water. Wilsonville also has a state of the art treatment plant with a lot of redundancy and backup built within it. Sherwood and Tigard also have comparable emergency storage requirements.
- Using the capacity of the backup wells was recommended as a lower cost alternative to building additional storage to reduce the projected future storage requirements. Maintaining and keeping the wells in service would lower the demand for new storage from about 9 million gallons to a little more than 2 million gallons.
  - With the planned construction of 3 million gallons of additional storage, the City would be in position to meet the 20-year projected need.

    - Mr. Mende noted Table 3.1 of the Master Plan showed the planning criteria that drove the entire evaluation of the water system. Every community had the same general pressure requirements, as well as a 1,500-gpm fire flow requirement for residential areas. All the communities were in the same general ballpark as far as the gpm required for fire flow in commercial areas, the differences could be due to engineering preferences.
- Following the wells' evaluation, the team recommended that the City continue to maintain the wells currently in service, however, a couple wells were questionable in terms of future production. It was recommended that the City repurpose some of those wells instead of abandoning them. Water rights would need to be considered regarding any changes to ensure that those rights were retained.

Commissioner Phelps asked if the City could afford this much redundancy or backup.

- Mr. Bledsoe explained that in this case, the 20-year projected cost would be about $100,000 per year to maintain the wells, which is a lower cost alternative compared to constructing a six million gallon storage tank. The City would have the benefit of having backup in more than one location. Wells are indefinite; if something happened that resulted in no service for up to five days, as long as power could be provided to the wells, which would have backup generators, the City could provide some level of service. He confirmed the needed capital improvements were reflected in the $100,000 average cost per year.

Commissioner Postma asked if rights to the wells included an element to maintain the wells for the sake of maintaining the water rights. The $100,000 cost could be considered as maintenance of water rights that the City might lose if the wells were abandoned.

- Mr. Bledsoe agreed, adding the City had to do certain things to retain the water rights, which might not ever be perfected unless the wells were put into full production. One purpose of the Water Management and Conservation Plan was to retain the water rights.

Mr. Bledsoe returned to his presentation, stating that the water treatment plant evaluation identified a couple item that require more exploration as the City moved forward later with a Water Treatment Plant Master Plan.

- Some policy decisions could affect the capacity of the clearwell storage facility. A tracer study was recommended that might influence the rate of capacity of clearwell storage. Minor modifications could address the concern to provide a full 15 mgd capacity at the plant.
- Providing a surge tank would avoid a water hammer when pumps are turned off, which could create negative pressure that is hazardous for large pipes. As demands in the system increase, this improvement would need to be implemented.
- The Charbonneau District was evaluated more closely in light of some specific concerns seen within the district.
    - A disproportionate amount of pipeline problems were associated with the cast iron pipe and some lines need to be replaced, particularly those constructed in the early 1970s.
    - The District is isolated from the rest of the city with one supply line and a backup system that consists of a couple of wells, a booster station and a tank. A seismic evaluation revealed that the tank was at risk and had the potential to settle up to eight inches in an earthquake. While settling would not cause a catastrophic failure, it would make the tank useless. An earthquake could result in the loss of the pipeline supply across the bridge.
    - The two recommended options to provide backup included rehabilitate or replace the tank or constructing a secondary pipeline under the Willamette River to supply to the Charbonneau District, which was the more cost-effective option based on a 20-year lifecycle analysis.
    - He confirmed that burrowing a pipeline beneath the river would be more reliable than hanging the pipeline from the I-5 Bridge, since the pipeline would not be subject to issues regarding the bridge itself. A new pipeline would be conducted with HDP (high density polyethylene) material. HDP is black plastic that is very resilient and highly flexible, making it much more reliable in an earthquake.

Commissioner Postma asked if the eventual abandonment of the current storage facility was being recommended, adding the pipeline and then a new storage facility for Charbonneau at some point in time.

- Mr. Bledsoe explained that 2 million gallons was still needed within the 20-year planning period. Constructing 3 million gallons, as is currently planned, and abandoning the tank would still meet projected future needs. If a line broke, no storage would exist under this scenario on that side of the river. The wells would always be retained as backup, which provide about 350 gpm, which is enough water to meet minimal in-house demand, not irrigation.

Chair Altman confirmed the intention would be to keep the line on the bridge and disconnect the reservoir, which would create a loop system to Charbonneau that did not currently exist.

- Mr. Mende added that in addition to Option 1 and Option 2, there were Options 1A and 1B. Replacing the tank and rehabilitating the existing tank were both considered. Both of those options were more expensive than drilling a new pipeline under the river. The pipeline would eventually replace the tank over time. The wells would stay. There would be no reason to disconnect the tank until it was no longer usable. The line over the bridge would stay as well. The analysis assumed that if a large enough earthquake did occur, it would break the existing pipe across the Boone Bridge.

Commissioner Postma:

- Asked how long the district would have storage if a large earthquake did occur.
  - Mr. Mende explained that a 6.7 earthquake would damage the tank beyond repair. The seismic analysis showed Wilsonville could get a 7.1 earthquake, so the City was relying on the wells regardless. The City can either rely on the wells completely with no pipeline under the river, or the replace tank to make it seismically safe, or put a pipeline under the river. He noted this was a technical evaluation, the large earthquake might never happen but the policy or financial decision still needed discussion.
- Understood if a catastrophic event occurred prior to building a new pipeline under the river, the City would be relying on the wells in Charbonneau, which would keep a minimal amount of water flowing.
  - Mr. Bledsoe agreed the recommendation was a risk reduction. If the tank were up to current seismic code or if the pipeline were in place, the City would have the additional redundancy as well as fire protection. The purpose of the tank improvement was to provide the same level of service being provided everywhere else in the community for that type of event.
  - Mr. Mende explained if there were a major fire, the wells could not put out enough water to satisfy fire flow demands in Charbonneau and also supply limited day-to-day usage of the residents without a tank in place.
- Stated it seemed odd that those larger events in Charbonneau were lower on the capital improvement priority list than other concerns.
  - Mr. Bledsoe explained that after seismic report was completed, the issue was moved up to a Priority 1B, which was within the first ten years. It would take time to get permits, designs, and get it built. Even if started today, the entire process, including construction, might take five years.

Mr. Bledsoe continued the PowerPoint presentation, noting the minor revision made to Comprehensive Plan Policy 3.1.5.b regarding the City's authority to request offsite improvements, and reviewing the three additional policies that were recommended. These policies addressed conservation, tracking water usage throughout the season, and coordinating with other infrastructure improvements. He agreed coordinating the storm water and water infrastructure improvements in Charbonneau made sense.

Mr. Pauly noted Implementation Measure 3.1.5.b had been revised and was different from the measures noted in the PowerPoint and on Page 2 of 11 in the Executive Summary. He read the revised Implementation Measure 3.1.5.b into the record as follows, "All major lines shall be extended in conformance to the lines sizes indicated in the Master Plan and, at a minimum, provisions for future system looping shall be made. If the type, scale, and/or location of a proposed development negatively impacts operating pressures or available fire flows to

other ***existing*** properties ~~or warrants off-site improvements to achieve or maintain minimum pressures or fire flows~~ ***as determined by the City Engineer,*** the Development Review Board may require completion of looped water lines, off-site facilities, pipelines, and/or facility/pipeline~~s upgrades in conjunction with the development~~ ***to achieve or maintain minimum pressures or fire flows as a condition of development approval.***"

Chair Altman said that was consistent with the concurrency policy structure. He inquired if requiring that adequate fire flows be available prior to issuance of construction permits could also be an option. This would enable the applicant to either add adequate fire flow themselves or coordinate with the City. Identifying a system deficiency and doing offsite improvements that might be beyond the demand created by the applicant was a concern. A secondary edit would allow the Development Review Board (DRB) to add a condition to require the fire flow, and then work out whether the applicant fronts the cost with a payback or uses the other options available in the process. Such an edit would avoid simply attaching a condition to a specific development to do offsite improvements.

- Ms. Jacobson stated the newly revised language of Policy 3.1.5.b provided that the DRB "may" consider the requirement. At the time of application, the proportionality and Dolan findings would have to be reviewed, but the DRB would have the flexibility to do it or suggest something else.

Commissioner Levit confirmed these policies were automatically adopted into the Comprehensive Plan and no further action would be required.

Mr. Bledsoe and Mr. Mende continued with the presentation and displayed the Water Facilities Master Plan map indicating the future improvements for the City of Wilsonville, which were color coded by priority. Improvement projects shown in blue would be completed in coordination with development. Projects shown in orange were Priority 1 projects and those indicated by small purple dots primarily regarded fire protection.

- Capital improvements recommended for the first ten years were organized into Priority 1A and Priority 1B categories. Many minor distribution piping improvements were in Priority 1B with the pipeline to the Charbonneau District being the big ticket item. Priority 1A's big ticket items included the 48-in transmission line and the new 3 million gallon reservoir, which would provide for the City's 20-year need. The 48-in transmission line was in the design stage, and both items had been carried forward as part of the previous master plan. Land for the reservoir would be purchased within the next couple of months and the design would start in the next couple of years. The vast majority of the Priority 1A capital improvements were already planned and budgeted, and built into the rate structure and system development charges (SDCs) equations. Once the Priority 1A items were completed, very few big ticket items remained Capital improvements moving forward were very nominal compared to many other communities.
- Priority 2 Improvements slated for 2020 to 2030 were mostly pipeline projects with a few other minor improvements at some of the pumping facilities.
- Recurring maintenance costs included maintaining wells, replacing pipes and meters, and inspection programs to ensure the facilities continue the same level of service. The City would need to consider the identified costs and the current budget when doing the rate analysis. Currently, very little was being allocated for some of the well maintenance, so keeping those facilities going would be an added cost. Very little was also being allocated toward pipeline replacement. Being proactive and replacing the pipelines on an ongoing basis would save the City money in the long run.
- Mr. Mende clarified that the recommended $365,000 maintenance replacement budget in the Master Plan reflected the total budget, not the increase in the maintenance budget. Many maintenance and replacement items were already being implemented. The annual increase would be between $65,000 and $80,000 per year, which was about an 8 percent annual increase in the water distribution budget.

Commissioner McGuire believed it was important to identify the two major CIP projects carried forward and being implemented from the previous master plan with a different color and a footnote to clarify that they were

not new projects. Some people would look at the updated Master Plan without any prior knowledge of all of the planning and efforts that occurred before.

Chair Altman believed clarifying that the $365,000 was not new costs was important for Council, the Budget Committee as well as citizens.

Commissioner Hurley suggested revising page 13 of the Executive Summary to add a section under Water Supply to show the costs if the City did and did not abandon the Canyon Creek Well. The potential cost for abandonment was $26,000, so adding a section that identifies the cost if the well is not abandoned might be a good idea. This information would be good for Council and the Budget Committee.

- Mr. Bledsoe noted that making the well usable would cost more than $300,000.

Commissioner Postma noted some things were not in the CIP. He was glad to see the revisions made to the fire flow deficiencies chart, but some neighborhoods had a large percentage of needed improvements to address fire flow issues. He asked where correcting fire flow issues fit into the CIP and what the plan was for those issues.

- Mr. Bledsoe explained that with each dot on the chart, the consultants, Mr. Mende, and Interim City Engineer Steve Adams looked at the land use; the proximity to another hydrant with adequate flow; the potential for some type of redevelopment and then gave a higher priority to commercial over residential because commercial demands are higher. Based on those criteria, the decisions regarding when the improvements should be made was determined for each individual area. Most of the fire-related improvements were not health hazard concerns, so they did not usually make the Priority 1A list. The Oregon Department of Water Resources and Drinking Water Division would not require the City to provide a certain level of fire protection, so the more urgent fire protection improvements were included in Priority 1B, and the rest were in Priority 2. All the improvements were included on the CIP charts. The items identified in purple on Figure 4 (Slide 13) addressed the dots on the fire flow deficiencies chart.

Commissioner Levit noted the designation of radius for each hydrant was fine in an open field, but asked how that translated into a street network.

- Mr. Bledsoe explained that circles were used to evaluate proximities and then each dot was reviewed with City Staff to determine what areas were not covered. For example, if a structure was not being covered, they considered the structure's proximity to a hydrant when determining if a new hydrant was needed. In light of the street network, the structure could be within the 300-foot radius, but it might take 400 feet of hose to go around structures. That level of detail was not considered in the Master Plan.
- Mr. Mende believed the fire department standard was a 300-foot hose lay. Some locations were considered where hydrants were 500 feet apart, but they were on either side of a major building, so the fire standard was met and those dots were removed from the deficiency chart.

Commissioner Hurley asked if the City had some kind of constrictive rate structure for higher water use.

- Mr. Mende replied that an inverted block structure on water rates was included in the Master Plan that differed for both commercial and residential customers. As residential customers use more water, residents would still pay less than commercial water consumers. The base rate for commercial was also higher. The esoteric nature of the rate structure was one reason the rate study was not included within this technical document.

Commissioner Levit:

- Noted at the top of Page ES.5 the draft talked about replacing the cast iron pipe and some of the steel pipe. Approximately 32,800 feet of pipeline was in the second line; however, the draft stated 34,500 feet needed to be replaced.
  - Mr. Bledsoe confirmed 1,700 feet of steel pipe was included in the 34,500 feet.
- Noted that the third line on Page ES.6 under ES.2.5 should state (TVWD); the V was missing.

- Recognized that two different priorities were being addressed in Priority 1 on Page ES.8, which regarded increasing fire flows currently less than 1,000 gpm, and later discussion about improving to between 1,000 gpm and 1,500 gpm.
- Noted Items 300 & 301 in Table ES.4 used MCC and asked what that meant.
  - Mr. Bledsoe replied MCC meant Motor Control Center, which would be added to table of acronyms.
- Asked if the first paragraph in Table 2.6 on Page 2-9, which stated the water bottling plant gets its water at an irrigation rate, was correct.
  - Mr. Bledsoe did not know if the plant was billed at an irrigation rate, but the plant has an irrigation account because it did not contribute to the sewer. The City did not have a separate billing structure for customers that fully consume water. The estimated irrigation usage was not assumed in Table 2.6 for those four months. Irrigation usage was not based on the irrigation accounts, but on the total system demand as opposed to the winter demand because a huge number of residents have irrigation demands but no separate irrigation meter.
- Noted someone on his street was taking small tanker loads of water from the hydrant for dust control at a horse farm. Tanker after tanker of water had been being taken for weeks and weeks. He was not sure how that usage was accounted for by City. The City said it was aware of this when it was happening a couple years ago.
  - Mr. Mende explained anyone taking water out of City hydrants is supposed to have a bulk water permit issued from Public Works, which allows for payment of the water. A meter is issued to the permit holder as part of the bulk water permit.
- Noted that Table 3.1 on Page 3-2 discussed velocities and the maximum for pipes under 12 inches as 10+ feet per second; however, Charbonneau's 4-inch pipe flow was 12½ feet per second.
  - Mr. Bledsoe agreed Charbonneau's pipe did exceed the maximum, which was something the consultants recommended the City monitor. The pressure regulating valve needed higher flows to maintain pressures. The valve was in a pipe segment located inside a building, making it easy to monitor. He noted the 10 feet per second was a guide, but 20+ feet per second was needed for fire conditions. The goal was to avoid having a pipeline in the distribution system that regularly exceeds 10 feet per second, which indicates that a parallel line or larger pipeline was needed. Water flow became more turbulent, velocities increase, and there was potential for surge and water hammer problems. It was also a flag for a lot of head loss or efficiencies in the system. High velocities would let indicate the need for more transmission, but Wilsonville had a lot of transmission capacity.
- Asked if laminar flow, not turbulent flow, was used to measure flow, and was that a factor when trying to calibrate some of the pumps.
  - Mr. Bledsoe stated every meter was a bit different. A guideline was used for upstream and downstream pipe segments. Turbulence might be less critical for certain types of meters. Usually, laminar flow was recommended, but it would not be a factor in measurement problems. Turbulence is usually introduced when going through fittings and turns.
- Inquired about the City maintaining lines at more than 80 psi. Most homes operate better at less than 80 psi, so are residents advised to install pressure regulating valves?
  - Mr. Bledsoe replied the City requires pressure regulators when the pressures are higher; much of the system has pressure regulators. He was not sure if the pressure regulators are located in the meter vault or in residents' homes. It is not uncommon for cities to have large areas with pressures above 80 psi and every resident has a pressure regulator on their system. Some communities make pressure regulators a policy, regardless of the system pressure, to transfer risk to the homeowner.
  - Steve Munsterman, Public Works Supervisor - Water, clarified that the pressure regulating valves used by homeowners and business owners could be placed anywhere from a garage to right outside the meter vault. People are encouraged and builders know that pressure regulators need to be installed. Residents do not always know they have them, which can create problems when the pressure drops or increases and they realize the regulators have to be replaced. Pressure regulators are also used in the system to control pressure differences due to elevation changes. The City owns and maintains these pressure

regulators. Older homes should all have pressure regulators. Homeowners could tell a regulator is needed if they have singing pipes, surging water pressure or other issues.

Mr. Pauly entered the following exhibits into the record:

Exhibit E: Email from Eldon R. Johansen dated July 8 2012 regarding concerns about how the Water System Master Plan ties into the City planning process and to any pending water rate and SDC study update.

Exhibit F: Letter from Wallulis & Associates dated July 9, 2012, along with six pages of review notes responding to the Water System Master Plan, and his resume.

Chair Altman opened public testimony regarding the Water System Master Plan Update at 7:35 p.m.

Stanley Wallulis, 7725 SW Village Green Circle, Charbonneau, reviewed the comments and concerns presented in his letter to Mr. Mende dated July 9, 2012 (Exhibit F) and discussed his work experiences in other jurisdictions and how other communities resolved water issues. He noted the availability of water in Charbonneau that could be used to fill fire trucks should there be a major fire, as well as meeting water demands.

Chair Altman:

- Understood Mr. Wallulis' written testimony and oral presentation primary focused on the proposals for Charbonneau and that he believed the City could provide water to Charbonneau through less expensive means than what was proposed.
  - Mr. Wallulis agreed. He cited Item 4 in Appendix H on Page 24 and noted the City would not only have the river crossing, but would also have to build another reservoir.
- Clarified the Master Plan already included providing an additional reservoir on the west side of town, not in Charbonneau, that would provide the needed replacement storage. If the Charbonneau tank ultimately went away, the new reservoir that was already planned would replace it.
  - Mr. Wallulis stated additional testing was needed and should be budgeted to determine the subsurface conditions under the reservoir in case the City considered doing repairs and improving the tank. This should be done before deciding to abandon the tank. Charbonneau would not grow; it was maxed out, so he did not believe a lot of expense was necessary to service the Charbonneau District.

Commissioner Phelps asked if Mr. Wallulis was suggesting the second pipe not be built and that the wells were sufficient regardless of the level of catastrophic events.

- Mr. Wallulis confirmed that was his opinion. He explained that the present tank and booster pumps were adequate if minor adjustments were made to bring them up to Code. There were two additional wells by the tank. If it was really a question of getting more supply, he suggested building wells in Charbonneau, which would be a lot less expensive.

Chair Altman confirmed Mr. Wallulis was suggesting that the ponds on the golf course, which are fed by river water, could be tapped to provide an adequate emergency supply that was not considered in the Master Plan.

- Mr. Wallulis noted that other areas build ponds to serve as fire protection and many ponds already exist in Charbonneau.

Clifford Engel, 8180 SW Fairway Dr. Wilsonville, noted the Water Usage Analysis chart showing the difference between what was being metered and what was being used. Charbonneau had many 35- and 40-year old irrigation systems used for the residences as well as the common areas. The common area between his condominium and the one next door uses much more water than it takes to put an inch of water on the lawn because the area is a swamp in the middle of summer.

- He suspected that while the residences in Charbonneau were metered, the District itself might not be metered. He suggested the City try to find these unmetered irrigation systems. There could be many broken pipes, which would be less expensive to fix than continuing to pump water that was not needed. Because the common areas are not metered, the wasted water was not being accounted for and the residents pay for this with higher rates.
- He noted how high his water bill was when he incorrectly installed a watering system in his backyard. A lot of water can be wasted in a very short time.

There was no further public testimony.

Chair Altman inquired about Exhibit E. He understood Mr. Johansen wanted to make sure the City was still covering development requirements, and Chair Altman believed the policy structure being added might address his concerns.

Mr. Mende stated he would address Exhibits E and F. He thanked Mr. Engel for pointing out the issue with the common areas in Charbonneau and confirmed it was another potential source for unaccounted for water. The irrigation system in Charbonneau was not considered and would definitely be researched further. Most of the irrigation in Charbonneau was on a private district, but it was still an issue worth considering.

Mr. Bledsoe added one recommendation in the Master Plan was to partition the City up and use meters to see if certain areas were more subject to water loss than other areas. One recommendation was to meter the water going to Charbonneau, so the City could compare the amount of water sent to the district to the sum of all of the individual meters in Charbonneau to determine what water loss might be occurring.

Commissioner McGuire asked if Villebois was set up the same way. Like Charbonneau, Villebois has a number of privately-owned common spaces, some of which would transition to the City. She asked if Villebois had a general meter for entire development and noted common areas in Villebois were overwatered as well.

- Mr. Bledsoe explained that it was not uncommon for a homeowners association (HOA) to have their own account. The City would bill a HOA with its own meter and homeowners' HOA dues typically include water.
- Mr. Munsterman stated that to the best of his knowledge, every water service in the city was metered. Villebois was an area the City had the best handle on because it was all new. The City has had Staff members on the water crew for 16 and 25 years who have a good idea about the metering system. If there is a green spot in an area with no meter, it is pretty simple to figure it out. All City accounts are metered as well, in fact, the City bills the City for water.
  - Charbonneau's irrigation district previously only provided water to the golf course, but that changed to cover the cost of replacement so the burden was not totally on the golf course members and the HOA is being charged. While areas inside one's private courtyard might be watered off the home system, the area outside the courtyard is watered off a common system. The golf course is watered off another section, but any use of City water is metered.

Mr. Engle explained if a condition caused by a gradual leak had been occurring for sometime, the City might not see much difference because the measurements are based on prior leaks during the heavy watering season.

- Mr. Munsterman stated it was not always possible to know what is leaking when there was no separate irrigation account. The City is happy to help people figure what might be causing a leak if their bill doubles.

Mr. Engle suggested the City send a notice to Charbonneau stating the City would begin assessing individual homes to pay for leaks if they could not be found; he assured the City would get many reports in just one week.

- Mr. Munsterman noted leak detection was covered in the main document. The City contracts with a leak detection company that surveys a one quarter to one third of the City's system every year and not a lot of

leaks are found. The City was fairly good at finding and repairing leaks and no active leaks exist at this time. The City surveys all new construction and everything still under warranty so leaks can be repaired by the builder.

- Mr. Bledsoe added that of the 30 water studies he has done, Wilsonville was the most proactive with regard to leak detection and elimination.

Mr. Mende addressed the comments and concerns discussed in Exhibits E and F as follows:

- Exhibit E regarded Mr. Johansen's concerns, which included how to meet demands, how the DRB evaluates demands, and the requirements the City places on a development to ensure specific capacities. He cited Mr. Johansen's email stating, "In general, the statements on water and sewer were casual until we approached capacity. Then, we provided specific capacities and previously approved water requirements." This was a true statement and the City would like to keep it that way.
  - In the analysis, the City looked at current conditions, and the water needed to accommodate the growth rate over a 5- to 20-year period, which provided a macro view of the water demand over the long term without looking at each individual development. If the City had enough water for the forecasted growth of 2.9% residential and 3.5% commercial, the water supply would be accurate.
  - A hydraulic model has been prepared to study individual developments, such as a large industrial user like Coca-Cola. Specific nodes within that distribution system could be taken into account to ensure the City did have the capacity, flow and pressure.
- Mr. Johansen's second concern regarded the water SDCs; however, a rate study component was not included in this Master Plan for a couple of reasons.
  - First, this Master Plan was primarily intended to be a technical document that did not get into the economics of different alternatives but recommend, from an engineering and technical standpoint, what was the best and most economical way to move forward and maintain the current system.
  - The second reason was that this distribution system was only half of the equation; to fully develop a rate study, the Water Treatment Plant improvements would need to be built into the rate study. The Master Plan for the Water Treatment Plant was last updated in 2004. A long-term look was needed to determine improvements for the Water Treatment Plant. Short-term improvements were addressed on an interim basis to achieve 15 mgd for both Wilsonville and Sherwood. The Water Treatment Plant Master Plan update would involve multiple entities, including the Tualatin Valley Water District and the City of Sherwood.
  - He clarified that an 18-in line was installed across the wetlands along the Montebello alignment. An additional 18-in line was planned to follow the Barber St alignment that would hang from the bottom of the bridge and connect directly to the 18-in Barber Street line, which goes out to Graham's Ferry and then north. The parallel 18-in line was needed after the reorganization of Villebois for the new school to ensure that section of town is looped.
- With regard to Mr. Wallulis' letter (Exhibit F), he had addressed comments about SDCs and the rate study, which paralleled Mr. Johansen's.
  - Most comments on the first couple of pages regarded the Executive Summary, and Mr. Wallulis did find a couple typos, such as Item 2 having to do with annual demand, which should be daily.
  - He clarified that Proposed Policy 3.1.7, in Item 19, was the tracking system and metering data for all the billing data, which was discussed as part of the unaccounted for water, as well as the City's approach for addressing the issue and maintaining an accurate profile of water usage.
  - Item 16 are in regards to system development charges.
- Mr. Wallulis' comments on the Executive Summary requested quite a bit of significant technical detail, but the Planning Commission had asked that the technical detail be removed from the Executive Summary to make it more readable for the public. Most all the detail requested by Mr. Wallulis was located in the main text of the document, but would not be included in the Executive Summary.
- Mr. Wallulis' comments noted in red regarded the 16-in water line crossing to Charbonneau and his suggestion that additional economic analysis be considered. Mr. Mende believed the basis of the economic

analysis had been covered as a comparison to repairs or replacements of the tank and well system. Mr. Wallulis' evaluation of the upgrade costs did not consider the cost of seismic retrofit, which was a late addition that was not incorporated into the earlier Master Plan draft.

- Mr. Bledsoe noted that rehabilitating the tank would cost $1.8 million and when added to the $265,000, it became quite a bit more costly to keep the status quo and meet current Code.

Commissioner Phelps:

- Stated the recommended, most cost effective way to serve Charbonneau did not add up. There were concerns about putting the pipeline through the river because the City might lose the bridge, yet the bridge supposedly has been retrofitted for earthquakes. Then, the Commission has heard that plenty of standby water exists on the golf course. He did not oppose the current recommendation, but wanted to know if service in Charbonneau could be maintained by taking advantage of what already exists in Charbonneau, or putting the water line across the river and reducing the reliance on wells.
  - Mr. Bledsoe explained there were two scenarios. The first scenario was to provide the same level of service in Charbonneau that the City targets for the rest of the community, which included fire protection and demand in an emergency event, and the second was to have secondary supply sources. To provide the same level of service, the following options were considered: replace the tank at Charbonneau, rehabilitate the tank at Charbonneau or put in the pipeline.
    - The lifecycle analysis in Appendix E showed that building the pipeline and some extra storage would cost the same as rehabilitating the tank at 20 years. With a 40-year lifecycle cost, the tank would cost even more; therefore, the pipeline was more cost effective over a 40-year span. The pipeline was longer-term investment than 20 years. The breakeven point of fixing the tank versus installing the pipeline was about 20 years out, when the annual cost savings would pay for the investment.
- Understood the investment now would benefit the community for more than 20 years, but the City would breakeven at 20 years. The tank might last 20 years, then the pipeline would take over and become more cost efficient after that 20th year. Doing nothing for 20 years would only delay installment of the pipeline, which could cost more money in 20 years.
  - Mr. Bledsoe noted there would be some cost because doing nothing for 20 years would require more investment in the booster station to keep it going, etc. The cost breakdown was added to Appendix E.
  - Mr. Mende added the main premise of the analysis was to treat Charbonneau the same as other parts of the city. If the decision was made that Charbonneau was to have a less secure system than the rest of the city, then the City could save money.
- Responded less secure was in the eye of the beholder and becomes art rather than science at some point. He wanted to know where this recommendation is cost beneficial. The cost benefit question would be raised at future conversation levels and he wanted to know how that question would be addressed. He was not able to get at the information he needed to address his question.

Commissioner Levit confirmed the ponds would be not be used for potable water, only for fire protection, so if the tank was not usable, the wells would not be adequate.

Commissioner Hurley understood the other part of the question was what if the tank was not rehabilitated and the pipe was not built, but more was invested to recharge the wells only in Charbonneau.

- Mr. Bledsoe responded it would be hard to get adequate production if any new wells were like the existing wells, one well put out 80 gpm and another, 300 gpm. Residential fire protection requires 1,500 gpm and larger facilities require 2,500 gpm, which would require a lot of big wells. The study did not consider using the ponds anywhere in the system.
- Mr. Mende noted the ponds were privately owned and an agreement would be required between the City and private owners with the water rights, which was possible.

Commissioner McGuire commented that the logistics of getting water from a pond versus a direct source would affect fire protection.

- Mr. Bledsoe explained commercial entities that use ponds as their source must maintain the ponds and make sure water was in the pond year round. In addition, there was usually a direct connection to a hydrant that puts the pond water within proximity of the structure as directed by the fire department, such as that a 300-ft radius. Water in a pond a quarter mile away could still be hauled, but it would not meet the same level of service provided to other areas of the community.

Commissioner Levit believed there might be an impact on fire insurance rates for homeowners dependent on a pond rather than a full hydrant system.

- Commissioner Postma replied that insurance companies did not do that type of independent analysis.
- Mr. Bledsoe added the ISO ratings for a neighborhood were not that specific.

Mr. Mende concluded his responses to items in Exhibit F with these comments:

- Many comments regarded terminology, like turnouts, and the acronyms and abbreviations would be modified accordingly.
- He clarified that the footages associated with various improvements were included in the estimates in the appendices and that the summary tables in Chapters 5 and 6 only looked at projects and costs, so adding that level of detail would not be included in those chapters.
- He believed the remaining Mr. Wallulis' comments were addressed during the Staff report and questions.

Chair Altman closed the public hearing at 8:27 p.m. and called for Commission discussion.

Ms. Jacobson advised the Commission about procedural process given the discussion regarding the recommended changes. She noted Commissioners McGuire and Hurley each made changes that could easily be incorporated, as well as the language revision by Mr. Pauly. Some of the responses to issues raised in the letter would not necessarily result in changes to the Staff report, but were just explanations. She suggested the Commissioners indicate which comments they would like addressed tonight, adding the Commission had the option to request another version of the Staff report.

Commissioner Postma understood Mr. Mende intended to incorporate some typographical/correction items raised by Mr. Wallulis and asked how best to differentiate those for the sake of clarification based on the laundry list of suggested changes.

- Mr. Mende stated Ms. Jacobson addressed two or three specific changes requested by the Planning Commission. While Staff had presented the analysis, Commissioner Phelps also wanted clarification about the least cost option for Charbonneau.

Commissioner Postma:

- Suggested addressing Commissioner Phelps concern by stating that additional discussion of a cost benefit analysis of multiple options for Charbonneau be included in the recommendation for approval. The technical corrections made by Commissioner Levit were easy to include because of specific indications already on the record; however, Mr. Mende did not confirm which specific changes should be made from Mr. Wallulis' notes and which were questions; the discussion became a bit confusing.
  - Mr. Mende clarified the typographical errors and other fixes did not need to be stated as a condition.
- Recommended stating, "Mr. Willulis' comments based upon typographical errors or corrections that need to be made" as opposed to comments.

Commissioner Phelps stated he would like to see the cost benefit analysis as characterized by Commissioner Postma.

Commissioner Postma agreed it was not easily digestible. There should be a pros discussion of the different options that were considered and that the recommended option was the best cost benefit analysis because of X, Y, and Z.

- Mr. Bledsoe reiterated the cost benefit analysis was already included, but information was spread throughout the document.

Chair Altman understood the need was to consolidate that cost benefit analysis information into the Staff report that would go forward to Council.

Mr. Mende understood that the Staff report would then include a cost benefit analysis for providing fire flow service to the Charbonneau District using both public and private water ownership and both underground and surface sources.

Commissioner Phelps:

- Explained that he wanted the cost benefit of no new water line versus a new water line. He would like all of that information in one place where it was easy to see.
  - Mr. Mende explained that with his suggested language, any source of water could be used and wells and ponds could be built in to do a new cost benefit analysis that would go beyond the one already done for the pipeline versus –
  - Mr. Bledsoe interjected, asking if the analysis should involve just the pipe versus the tank.
  - Ms. Jacobson believed Commissioner Phelps wanted a cost benefit analysis to determine if it was more cost beneficial to have a pipe or use what exists and not have a pipe.
- Agreed Ms. Jacobson's summary was correct; all he wanted to know was whether the City needed a pipe.

Commissioner Postma thanked the team, City Staff and Consultants, for making the Master Plan more readable. The City had an obligation to its citizens to make sure the Master Plan could be read and understood by anyone. The changes made for a better document, which was incredibly useful.

- He agreed with Commissioner Phelps on the issue of Charbonneau. More discussion about the cost benefit analysis was important because it would show which items the Commission believes the Council should consider.
- The lost water issue had been discussed ad nauseum. Discussion at a previous work session included the idea that the cost of unaccounted for water was not necessarily passed on to certain residents or businesses and he disagreed. Lost water had to be accounted for and there would be an increase for everyone because the system as a whole must pick up the slack in order to cover that production. Sherwood would now have to share in the lost water expense, despite the fact that Sherwood has a brand new facility. Eventually, Sherwood would speak up about having to pay for the City's water loss. Even though the City is aggressive in preventing and repairing leaks, the lost water issue still needed to be resolved because that loss was paid for by everyone. It was hard to hear that the City was doing great with leaks and meters, so Staff did not think it was a problem. It was important to track down where the lost water was going. He did not know where those costs fit into the equation, but he believed the City should continue to be sensitive the issue.

Commissioner Levit believed the team did a pretty thorough job of trying to evaluate the water system, which was not an easy task because the system is underground. It was important to understand what would be checked. However, City Council would have to follow up on those things if the Commission approved the changes tonight.

- His one concern was focusing on just one cost benefit analysis when a case could be made for doing or not doing every item on the list, though that level of justification was unwarranted, not that it should not be done, but the Commission was not focusing on each and every item.

Chair Altman noted that specific testimony was given raising the issue and proposing alternatives that were never addressed. The Commission had heard the comments and Staff was looking at the issue, which seemed to be the cost benefit of making those improvements to Charbonneau and the best way to do so. He was comfortable with that approach. The only reason the analysis was being done was that specific testimony raised the issue; no other testimony was given about other areas in town.

Commissioner Phelps confirmed he was concerned about the cost benefit analysis before, but the public testimony solidified his concerns. He noted the biggest cost elements in the Master Plan revolved around Charbonneau. The City needed to make sure that much money must be spent in order to do the job right.

Chair Altman echoed his appreciation for the revised and simplified Executive Summary, and particularly the fire flow exhibit.

Commissioner Postma moved to adopt the Staff Report, with the amended Implementation Measure 3.1.5.b, as stated by Mr. Dan Pauly, and to recommend approval of the Water Master Plan, with modifications of multiple items as follows:

- **Consolidate and simplify the cost benefit analysis for available options to address Charbonneau's short- and long-term supply and flow issues as discussed and addressed by Commissioner Phelps.**
- **Include the note with regard to the chart on Page 17 of the draft Water System Master Plan (Exhibit A) for large capital items listed in Priority Items 1A that were previously included in the prior Master Plan as indicated by Commissioner McGuire.**
- **Include the suggested revisions or corrections as addressed by Commissioner Levit.**
- **Correct the third line under ES.2.5 on Page ES.6 to state "(TVWD)".**
- **Include Motor Control Center (MCC), used in Table ES.4 for Items 300 & 301, in the table of acronyms.**
- **Include the cost benefit of abandoning versus maintaining wells as noted by Commissioner Hurley.**
- **Include the correction of typographical errors addressed by Mr. Wallulis in Exhibit F.**

Commissioner Hurley seconded the motion, which passed unanimously.

Commissioner Postma moved to adopt Resolution LP12-0002 with the adopted Staff report as amended. Commissioner Hurley seconded the motion, which passed unanimously.

Mr. Mende stated that he expected someone to ask why Technical Memos 1, 3 and 5 were included in Appendix B, but not Technical Memos 2 and 4, and explained that they were rolled into Technical Memos 1, 3 and 5.

Commissioner Levit noted that the Commission just approved changes with a cost benefit analysis, but no recommendation was made about how the cost benefit analysis was to be utilized.

- Mr. Bledsoe reiterated that the cost benefit analysis had already been completed, but only needed to be summarized in a way that was easy to follow. He confirmed that the Master Plan recommended the pipeline versus the reservoir.
- Mr. Mende added that the Master Plan now goes to Council where other considerations, in addition to the technical basis behind the improvements, were being recommended, such as a future rate study. The timing for the recommended improvements might be changed.

LP12-0002
Water System Master Plan Update
Planning Commission Record Index

Distributed at the July 11, 2012 Planning Commission public hearing:

Exhibit E: An email from Eldon Johansen, dated July 8, 2012, regarding Water System Master Plan

Exhibit F: A letter dated July 9, 2012 from Stanley Wallulis, with attachments.

Exhibit G: Paper copy of the PowerPoint, *Water System Master Plan*, shown at the meeting

Mende, Eric

From: Eldon R. Johansen <erjohansen5@comcast.net>
Sent: Sunday, July 08, 2012 4:30 PM
To: Mende, Eric
Subject: Water System Master Plan

Exhibit E

Eric, I thank you for pointing out that the Water System Master Plan was on the City web site. I have briefly reviewed the draft document and want to provide my initial impressions. My overall impression is that the engineering analysis is thorough and presented very well. My concerns are about the way this document ties to the City planning process and also to the update of any pending Water Rate and Systems Development Charge Study.

What are demands? The planning approval process may have changed since I was involved, but prior to a project receiving Stage II approval The Community Development Director or an Engineering Representative had to state that after the developer fulfilled his conditions of approval there would be sufficient traffic level of service, water supply, sewer service and storm drainage facilities. In general the statement on water and sewer were casual until we approached capacity and then we provided specific capacities and previously approved water requirements. We would recommend disapproval if capacity was not available. In most cases we would get to this level before we could prove to Council and the community that added capacity needed to be provided. In calculating the demands on the system we included the following:

Capacity being used at that time,

Approved agreements to provide capacity. I think this included Coca Cola and the Department of Corrections.

Water for facilities that had meters, but no water use at that time and could begin using water at any time.

Water for any project with prior Stage II approval which did not have meters in place.

In looking at Table ES.2 Future Water Demands and the backup tables that were used to develop Table ES-2, it appears that the table includes water production which would be expected to actually occur in the projected year. As development continues, without the other demands there is no easy way to tell where the City stands now on storage and for future specific development approvals and when we will trigger a need for added storage or production. If the rules for Stage II approvals have changed this may not be a factor any longer.

Relationship of Water Systems Development Charges to Water Systems Master Plan. Identifying projects which are classified as all or in part capacity related has helped when it comes time to develop SDC's. The last time I checked the city had separate categories for single family, multi-family, commercial, industrial and irrigation with government and churches generally lumped into the commercial category. The single family residential category includes irrigation water. Multi-family, commercial and industrial do not. There are five separate peaking factors to make sure each category SDC represents the demand on the system for that category. The grouping into residential and non-residential works fine for the Water Systems Master plan, but not for the System Development Charge. If possible please include a disclaimer on Table ES.2 mentioning that a more detailed refinement will be done for Systems Development Charges.

Other. I am glad you had more current figures to determine the peaking factors. I am sure yours are more realistic figures than our figures from the mid 80's which was about the only time we had records when water restrictions were not in place.

I also recognize the earlier projections for water consumption on future commercial and industrial developments need to come down. When we looked at the figures from an even earlier study it appeared that the figures were high to minimize future requirements for parallel lines as the area developed beyond the original planned area. On industrial

developments we were concerned that developments could convert from warehouse to light manufacturing and only dropped about 20%. On commercial developments we thought that commercial developments in Wilsonville would gradually acquire the characteristics of more urban commercial areas with increased water use and also dropped the figure by a relatively small percentage.

My memory is again hazy, but I thought we had put in an 18 inch water line from the vicinity of Montebello and Barber to Kinsman a block or so south of Barber to provide capacity to continue development in Villebois. This is listed on Table ES.3 as Project 163 and seems to serve the same purpose as the previously installed line. It seems like when I retired, Michael Bowers was left with getting the final agreement on payment worked out with the developers.

Eric, thank you for the opportunity to review the document and provide a little bit of historical perspective. My memory of the ties between the water moratorium, the Water Systems Master Plan and the Water rate and SDC Study are hazy and I hope I got it right.

Eldon Johansen
503-682-8721

Exhibit F

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REGISTRATIONS, CERTIFICATIONS
OREGON: ENVIRONMENTAL ENGINEER
CIVIL ENGINEER
CONTROL ENGINEER
WATER RIGHTS EXAMINER
ENERGY AUDITOR
LAND SURVEYOR
PREVIOUSLY REGISTERED AS PROFESSIONAL ENGINEER IN:
WASHINGTON, ALASKA
CALIFORNIA & FLORIDA

July 9, 2012

Mr. Eric Mende, Deputy City Engineer
29799 SW Town Center Loop E
Wilsonville, Oregon 97070

Re: Update of the City of Wilsonville's Water Systems Master Plan

Dear Mr. Mende,

As you may recall, I called you last Thursday about the "Notice of Public Hearing" on the above captioned subject inquiring about the apparent conflict of a hearing on June 13, 2012. You informed me that this was a misprint.

I have subsequently downloaded the captioned Plan. By placing many other commitments on the "back burner" I started a review to provide requested input on the Plan which contains 176 pages of printed material. I have done this by squeezing in some time on longer than normal days, at different intervals to at least scan the Plan. This effort was made to enable me to ASAP convey my input to you, other city staff, Planning Commission and consultant prior to the hearing this coming Wednesday. I don't appreciate being "blind sighted" and I am sure others do not either. Please include copies of this letter and notes for the Planning Commissioners for the meeting, and if they have not had the agenda sent to them yet, include it with the agenda.

First of all the Plan contains a wealth of information and innovative ideas. To extol them would not have allowed me time to address the concerns that I had in the limited time and provide this input.

The first thing I noticed was that the Consultant was not retained to provide information on how the proposed improvements are going to be paid for. In these types of Plans funding is one of the very significant plan elements that all parties normally **want to know how much up front**: e.g. water rates, sinking funds, bond issues, grants, etc.

I cannot recall a single master plan that my Firm prepared which did not include this element, except when it had been commissioned to some other entity to prepare it simultaneously. Whenever possible, time permitting, we would recommend the sinking fund approach. Other times it was necessary to prepare: bond schedules for different scenarios e.g. probable range of interest rates; different retirement periods; plus water rate scheduling (timing and rates) for the required funding.

(over)

Unfortunately this City has adopted a process where the Planning Commission is charged with responsibility of making recommendations on major future projects without any knowledge on how the project would be funded and its effects on water rates. This does limit the breadth of open discussion, but reminds me of Nancy Pelosi, previous leader of the Senate, when she said about the Abama-Care: we have to pass this 2,700 +/- page bill to know what is in it (paraphrased). The Democratic House and Senate passed the bill with the overwhelming majority of the members voting for it, had never having read the bill in its entirety.

I am attaching 6 pages of notes taken from perusing the Plan. These notes contain considerable duplication reducing actual amount of actual input. Unfortunately the time between receiving the notice and the hearing did not permit time for a more in depth review of 176 pages of material in the Plan. While there is nothing in the Plan about funding there is enough information about costs that they should be red flagged.

In reviewing the Plan, the comments in the attached notes were made in the same manner, as I previously have done when reviewing draft plans prepared by one of my staff engineers.

The review will show that I personally have some strong preferences for some terminology that others may not share. Other than that caveat, the notes are based on info taken from the draft plan and inferences that can rise from that data. I made more suggestions in the Executive Summary then the other segments, because it is targeted for a broader audience, that may not be accustomed to reading engineering reports and the terminology used.

In the past when major projects of this type were considered by the City, there has been a group of engineers and scientists here in Charbonneau that reviewed and commented on such projects. I did not have the free time to contact or schedule meetings with any of these fellow professionals. I will not be able to contact any of them until I take care of issues and prior commitments that were placed on the "back burner" four days ago and need urgent addressing.

It took me three and a half days to review the 176 pages in the Plan and you have 3 days to review only 6 pages with a lot of duplication in it. I have provided you with a proportionally a lot more time to review my 6 pages of notes than I had reviewing the 176 page Plan. There are areas that I feel need to be opened up for discussion and modification, in my notes, these are **highlighted in red print** .

I am also including a copy of my resume, to provide some documentation about my current and previous experience and qualifications as a professional in different disciplines.

Very truly yours,

Stanley Wallulis

Stanley Wallulis, P.E. P.L.S., W.R.E, E.A.

Encl. Wilsonville Water Master Plan - my notes, 6 pages.
My Resume

cc: File -Wilsonville Proposed Water Master Plan

WILSONVILLE WATER STUDY BY KELLER ASSOCIATES

Review notes by Stanley Wallulis in response to requested input. -- July 9, 2012.

EXECUTIVE SUMMARY

1. Pg. 2 - Clearwell – "or add baffles" – query: baffles for CT ?
2. Pg. 2 - Chart states **annual** demand; should be **daily,** plus add: 1 cubic foot. = .748 gal.
3. Pg. 2 - Residential water demand – demographics, river water irrigation ?
4. Pg. 3 – "delivery points ("turnouts")." vs. branch connections (tees, crosses, etc.)
5. Pg. 4 - Hydraulic model, modeling on what data? 1 sentence of info would be helpful.
6. Pg. 4 – City's 4 reservoirs includes Charbonneau tank?
7. Pg. 4 – Service levels should identify different msl elevations (upper/lower) for each zone.
8. Pg. 5 - Problems with cast iron pipe? A general explanation would be enlightening.
9. Pg. 5 – Meter testing 100 meter annually sampled vs Implementing a 7 +/- year cycling of all meters for system accuracy (unaccounted waters) including large meters which have failed significantly; and equitably generating more revenue.
10.
11. Pg. 6 – Hydrant spacing 300' how rigid is this distance, number required.
12. Pg. 6 – Identify Cities wells w/undesirable characteristics, e.g. odor, taste, yield, remedies, etc.
13. Pg. 7 - hydropneumatic tank, 750 cubic feet = 5,620 gal; should be identified as a surge tank as later identified in add typical size dia. & height to convey physical size.
14. Pg. 7 - Charbonneau tank at risk from earthquake. Foundation soils have lots of clay, seismic basis documented ?
15. Pg. 7 - Charbonneau tank – abandon tank (size ?) & booster station, why – justification ???
16. Pg. 8 - Some improvements justify "system development charges" – Philosophically originally (SDCs) were targeted at the influx of newcomers coming into the city. In reality studies have shown in several cases, the majority of sales in new or upscale areas, are to existing residents in the community upgrading to better homes. It is my personal opinion, that in the interests of equity, a policy should be made to eliminate these charges for existing residents moving to better homes and levied at the time of sales (homes only) against the truly new residents.
17. Pg. 9 – Chart ES-3 without quantities is meaningless as to the scope.
18. Pg. 10 - Continuation of Chart ES-3 , same as above.
19. Pg. 11 – What does the **"Proposed Policy 3.1.7"** maintain accurate demand profile consist of??
20. Pg. 13 - What does line 142 in the chart on this page "safety nets" mean/include.
21. Pg. 13 -Chart on this page also needs quantities to be meaningful e.g. number of services, etc.

CHAPTER 1 - **EXISTING SYSTEM DESCRIPTION**

1. Pg. 1 – "turnouts" what are these: branches to the existing distribution system; or connection points for other future entities, etc. Turnouts are a terminology usually used when removing/closing side gates along open flowing irrigation ditches, or gates on dams.

2. Pg. 2 – Pressure zone levels A, B, C, & D should identify the areas served by delineating the (upper & lower elevations) of each zone and identified on a map.

3. Pg. 2 – "Turn outs" in lieu of this terminology I prefer either: "junction" or "branch" and a indicative of a more continuous/permanent connection with the use of a cross (partial), tee, wye, fittings, etc.

4. Pg. 2 – Are the blow offs at hydrants operated manually or are they pressure relief valves that release water automatically and how is the water disposed of?

CHAPTER 2 - **DEMAND FORECASTS**

1. Pg. 10 – Water Losses of 17.5% too high. What is the history of meter maintenance, system monitoring techniques?

2. Pg. 12 – "turnouts" already stated previously.

3. Pg. 13 - "turnouts" already stated previously.

4. Pg. 14 - "turnouts" already stated previously.

CHAPTER 3 - **SYSTEM ANALYSIS**

1. Pg. 1 – "City is able to deliver water during high demand periods even when **one of the pumps servicing the area is off-line**". Should I interpret the above underlined to mean – [any one of the system pumps servicing any, or all of the areas is offline]?

2. Pg. 2 – Add "PDD" under the listed abbreviations.

3. Pg. 3 – "Dummy pipes" should be defined.

4. Pg. 4 - "turnouts" already stated previously.

5. Pg. 5 – Paragraph 2 "below 80 psi" should read above 80 psi.

6. Pg. 12 – Chart 3.2 (map) – lines delineating pressure zones would be a nice addition. No area on the map shows locations with pressure less than 40 psi.

7. Pg. 15 – **Need a lot more info to buy into the proposed 16" water line river crossing to feed Charbonneau.**

8. Pg. 15 – 2nd paragraph is "590 feet" a msl datum or some other datum.

CHAPTER 4 - ---- TREATMENT PLANT AND TRANSMISSION PIPELINE

1. Pg. 6 – Last paragraph. The addition of "effective" to the clear well (before) **storage size** would be beneficial to ordinary inquisitive citizen reading the entire Plan.

2. Pg. 7 – -"turnouts" already stated previously.

3. Pg. 11 -"turnouts" already stated previously.

CHAPTER 5 - CAPITAL IMPROVEMENT PLAN

1. Pg. 3 - Table 5-2. Twice - "turnouts" already stated previously.

2. Pg. 3 - **Table 5-2. 16" intertie line river crossing to Charbonneau – at a cost of $1,532,000 is a very questionable project.**

3. Pg. 4- Table 5-2. "turnouts" already stated previously.

4. Pg. 4 - Table 5-2. Water Distribution Piping – adding footages would help in conveying scope.

CHAPTER 6 - OPERATIONS, MAINTENANCE, AND REPLACEMENT ------

1. Pg. 2 - Table 6.1 - "turnouts" already stated previously.

2. Pg. 2 – Table 6.1 - Water Distribution Piping – adding quantities would help in conveying scope.

3. Pg. 3 – "6.4" Are there plans to incorporate Charbonneau's wells into the SCADA system?

4. Pg. 4 – Meter testing. Suggest a more aggressive testing of all meters e.g. 7 year +/- cycle.

CHAPTER 7 - POLICIES AND IMPLEMENTATION MEASURES – NO COMMENTS

APPENDIX A – MAPS AND FIGURES

1. Presently there was limited time to review in depth the maps and figures and provide input prior to the July 11th meeting. I did notice the following 2 items in a quick scan as follows in #2 & #3 below.

2. Pg. 6 – Figure #5 gives numerical values for pressure zones A, B, C, & D but does not:
   a). identify the datum or give ranges as of upper and lower for surface elevations or
   b) for the hydraulic head operating ranges.

3. Pg. 6 – Figure 5 - **The proposed 16" future intertie is shown in this figure and I doubt that this is the best available option and that there are better scenarios.**

APPENDIX B - EXISTING DISTRIBUTION SYSTEM CONDITIONS EVALUATION

TECHNICAL MEMORANDUM #1

1. Pg. 2 - "turnouts" already stated previously, **but additionally defined this time as "delivery points".**

2. Pg. 5 – Water meter testing cycle of 20 years. Where did this cycling basis come from?

3. Pg. 7 – C level reservoir overflow elevation duly noted as 507.5 feet assumed msl, OK??.

4. Pg. 8 – Suggest adding "by a PRV valve" after **"break head" or** state to raise/lower pressure with a PRV.

5. Pg. 9 – A seismic analysis has not been performed for the Charbonneau Reservoir duly noted.

6. Pg. 11 - "turnouts" already stated previously.

7. Pg. 13 - "turnouts" already stated previously, **but now includes PRV valves & flow meters and on pg. 14 other configurations.**

TECHNICAL MEMORANDUM #3

1. Pg. 21 – City's very conservative storage duly noted. "For this planning effort, a recommended emergency storage volume equal to twice the average day demand was used. City staff **recommended that this volume not be "nested" or overlapping with fire storage, but that it be provided in addition to the other storage components." Plus City staff insistence on excluding the use of City's wells that are equipped with standby power.**

2. Pg 22 – Use of City's wells to meet emergency conditions in lieu of above storage:
   Use of the City's 8 wells reduces required of 2.16 MG of storage & reduces capital costs by: $4,000,000.
   Other scenarios, even using fewer wells in an emergency would save millions of $.
   Plus if the wells are renovated to their previous yields all additional storage requirements would be eliminated, resulting in saving approximately $ 8,000,000 +/-. Since the City has essentially stopped using the wells the regional well water table levels has been reported to have risen significantly. This could result in higher yields for short durations with acceptable levels of drawdown than when they were used as the sole principal source.
   The intertie with the City of Tualatin should also be factored in this Plan the possibility of another way of meeting supply to all the City's zones in an emergency.

3. Pg. 24 – Based on the above, how can the expenditure of $ 5,800,000 for the proposed reservoir at Booze Road, be justified.

This raises the question; has the City staff purposely insisted on and manipulated (raised) storage requirements and insisted on not including the available supply from the City's 8 wells was to provide an artificial basis for justifying the Booze Road expenditures or just Empire Building? If so are there other areas where staff input has resulted in bloating the immediate need for projects and their attendant costs?

Combining the two above highly questionable project's costs (in bold figures in red), we have a total of +/- $ 13,800,000. By adding the highly questionable cost of constructing a Willamette River crossing intertie to Charbonneau from Table 5-2 above at a cost of $ 1,533,200, the total cost for all the highly questionable projects becomes $ 15,332,000. Hey this isn't "chump change".

TECHNICAL MEMORANDUM #5

1. Pg. 27 – "Telemetry". Why is it required to manually open a valve on the discharge line instead of controlling backflow by a check or control valve ?

2. Pg. 33 – Nike Well – Hydrogen sulfide can usually removed by a simple aeration facility.

3. Pg. 34 – Pump Test – Is the stated back pressure stated herein the pressure at which the drawdown stabilizes?

4. Pg. 43 – **Description of all 8 pumps:** the Geshellshaft Well from the abbreviated description is vertical line shaft turbine pump; the two Charbonneau well pumps are described as submersible pumps; the other 5 are described only as "well pump" settings and could be interpreted as either submersibles (with motors immediately above the pump bowls) or line shaft turbines (with pump bowls only).

APPENDIX D – MODEL MAP IS NOT REPRODUCIBLY READABLE

APPENDIX E – COST ESTIMATES (LABLED AS APPENDIX F) THERE IS NO APPENDIX E.

1. Pg. 1 – "break head" recommend change to: "reduce (or increase) pressure through a pressure reducing valve(s)".

2. Pg. 5 – Table 2 – Would like more info on 234 feet of 12" dia. concrete pipe.

3. Pg. 8 – Chart #3 – Should add a legend for the different colors.

4. Pg. 9 – Chart #4 – Complete replacement of undersized feed lines to fire hydrants is not necessary. Only a sufficient length of 8" should be used to replace undersized pipe to reduce the friction losses (pressure) enough to provide the minimum required flow. This will not only reduce the cost but also the disruption to abutting homes and the mess.

5. Pg. 9 – Comments about a new 16" intertie line in red print shown below is commendable and should be redundantly stated in other places where the 16" intertie line is discussed.
To do – life cycle analysis for both options – look at risk costs (potential new well drilling /rehab, potential major tank upgrades . . .)

6. Pg. 9 – "1.4 SUMMARY OF RECOMMENDATIONS AND COSTS - In summary, the Charbonneau District has adequate well supply, storage, and booster pumping capacity to meet existing and future needs."

7. Pg. 10 – **Chart #3 – The recommended present and future estimated costs to up date the presently supply source to Charbonneau is $264,000 vs the estimated cost of the proposed 16" intertie line (river crossing) to Charbonneau is $ 1,533,200.**

In the process of designing and building of our home in Charbonneau over 24 years ago, I did conduct a research on the geology of the area. There was a woeful lack of information on the existence of faults (cracks in the underlying formations). The underlying basalt formations were too deep to economically provide foundation support for the home, so I designed concrete reinforced with steel, foundations.

In 1993 an earthquake centered near Scott Mills, Oregon was recorded with a magnitude of 5.6 and I felt it here in Charbonneau. I was reading the morning paper in our home at the time when it hit, I continued to sit in my chair, confident our home would ride out the quake in fine shape, my wife however from another part of the house bolted out to the back yard. The quake at our home felt similar to sitting in boat on a placid lake and a large fast boat went by and caused swells. My first response to the quake was to check for any leaks in the water and gas service lines and then for cracks on the exterior of our all brick home. Everything checked out just fine.

The upshot of this is the present reservoir servicing Charbonneau and the freeway bridge across the river experienced the same affects of the quake without any damage. The freeway bridge has since had additional improvements made to make it even more quake proof. The proposed 16" intertie across the river, of course not being built, has not been so tested, and with the lack (assumed still) of geological information on existing faults in our area it may have failed if built.

RÉSUMÉ OF

STANLEY G. WALLULIS, P.E., P.L.S., W.R.E., & E.A.

7725 SW Village Greens Circle, Wilsonville, OR 97070

Phone: 503-694-1309, Cell 541-429-1725

1. PROFESSIONAL STATUS.

Active Registrations in the State of Oregon:

- **Professional Engineer, Civil, Environmental & Control Engineering #3758.**
- **Registered Professional Land Surveyor #1326.**
- **Certified Water Rights Examiner, State of Oregon #138.**
- **Certified Energy Auditor by the Oregon Department of Energy.**

Retired Registrations in good standing.

- **Professional Engineer in the State of California #040095.**
- **Professional Engineer in the State of Alaska #5924.**
- **Professional Engineer in the State of Washington. #6792.**
- **Professional Engineer in the State of Florida #35933.**

2. FORMAL EDUCATION.

Graduate of Oregon State University, with a Bachelor of Science Degree.

3. TECHNOLOGY TRANSFER SEMINARS AND SYMPOSIUMS.

Meeting ongoing "Continuing Professional Education Requirements" by attending one or more:

Seminars and symposiums sponsored by state, federal, and qualified voluntary associations for water, wastewater, streets, roads, and related engineering disciplines.

4. PARTICIPATION IN PROPOSED REGULATORY ENACTMENTS.

Attendance at public workshops and hearings, where governmental agencies request public comments on their proposed rules and regulations that have an impact on water, wastewater, streets, municipal infrastructure and land use.

5. PROFESSIONAL MUNICIPAL EXPERIENCE.

Two years as Assistant City Engineer for the City of Pendleton, Oregon.

Three years Utility Engineer (water & wastewater) for City of Corvallis, Oregon & metro area. Directed a staff of 60 professional, technical & clerical personnel with annual budgets in the millions.

6. PROFESSIONAL PRIVATE PRACTICE EXPERIENCE, 51 years.

Responsibilities as the owner/president of a consulting engineering firm servicing public and private clients on several types of diverse projects.

- **a. Client contact,**
- **b. Project presentations at public hearings,**
- **c. Act as client representative before state and federal agencies,**
- **d. Prepare and author municipal comprehensive plans,**
- **e. Public work projects from conception through completion and start-up,**
- **f. Preparation of project cost estimates,**
- **g. Determination of debt service requirements,**
- **h. Propose revenue financing alternatives,**
- **i. Project scheduled replacement costs,**
- **j. Project annual operational costs,**
- **k. Prepare operation and maintenance manuals, and**
- **l. Supervision of professional supporting disciplines, technical and clerical staff.**

(OVER)

7. GRANT EXPERIENCE AND ADMINISTRATION WITH PUBLIC AGENCIES:

A variety of State and Federal grant funding programs have been utilized in the construction of several public works projects. Grant funded projects have been constructed for the cities of Pendleton, Hermiston, Pilot Rock, Prairie City, Boardman, Echo, Lostine, and Elgin.

Agencies that have provided or administered grant funding on the above and other projects include:

- **Federal Department of Transportation**
- **Oregon Department of Transportation**
- **U.S. Public Health Service**
- **U.S. Economic Development Administration**
- **U.S. Environmental Protection Agency**
- **U.S. Bureau of Reclamation**
- **Farmers Home Administration**
- **Federal Housing Administration**
- **Federal Housing and Urban Development**
- **Federal Department of Energy**
- **Oregon Department of Environmental Quality**
- **Oregon Water Resources Department**
- **Oregon Department of Labor**
- **Oregon Department of Health**
- **U.S. Army Corps of Engineers.**

8. CIVIC INVOLVEMENT HISTORY.

- **City of Pendleton Fringe Area Planning Committee.**
- **Pendleton Community Hospital Fund Raising Committee.**
- **City of Pendleton Building Appeals Committee.**
- **City of Pendleton Budget Committee.**
- **Blue Mountain Community College Curriculum Advisory Committee.**
- **Director of the Eastern Oregon Chapter of AWWA.**
- **Chairman of Umatilla County Planning Commission.**
- **City of Pendleton Off Street Parking Committee.**
- **For State of Oregon Water Resources Commission: Umatilla Sub-basin Committee.**

9. LETTERS OF COMMENDATION.

***Hermiston Projects -- Tom Harper, former City Manager**
Hermiston Project — EPA Project Liaison Officer on Artificial Recharge Project.

***Pendleton Projects -- Joe Mclaughlin, former Mayor**
***Pendleton Projects -- Gerald (Jerry) Odman, Former Public Works Director**

***Prairie City Projects – Zelma Woods, former City Recorder**

Pilot Rock Projects -- Duane R. Cole, former Administrator
Lostine Project -- Marthanne Stone, former City Recorder

City of Corvallis Utility Engineer -- Alton R. Andrews, former Utility Engineer
City of Corvallis Utility Engineer -- Floyd W. Collins, former Utility Director

Schroeder Construction – Jim Schroeder, Owner, Developer & Builder

***Multiple letters from same client for different projects.**

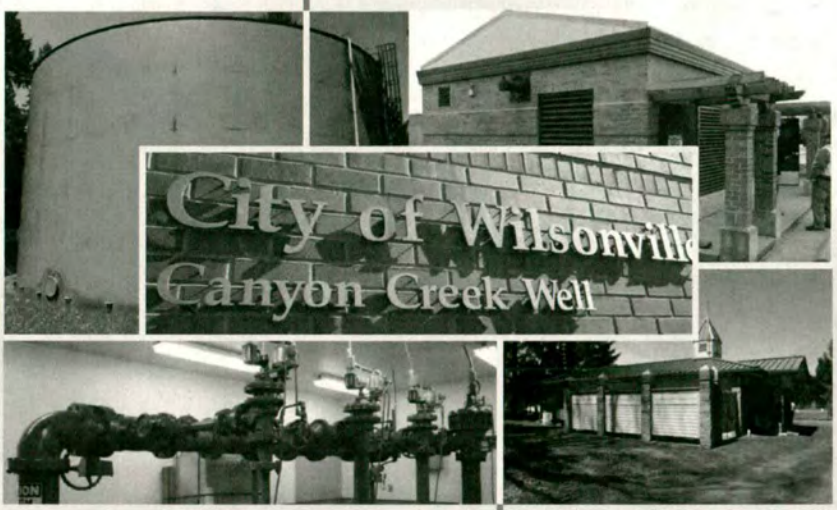
Copies of the above letters are available upon request. Additional letters are also available.

Exhibit G

WATER SYSTEM MASTER PLAN

PRESENTED TO: CITY OF WILSONVILLE PLANNING COMMISSION
PUBLIC HEARING

July 11, 2012



KELLER associates

211010/3/12-251

Purposes of Water Master Plan

- Meet Comprehensive Plan / City Council Goals and Policies
  - Goal 3.1 "**To assure that good quality public facilities** and services are available with adequate capacity to meet community needs, while also assuring that growth does not exceed the community's commitment to provide adequate facilities and services."
- Update Previous Planning Efforts
  - Previous plan is 10 years old
  - Previous plan predates the water treatment plant

Exhibit G

Study Area / Land Use

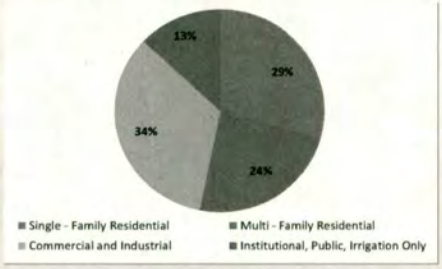
- Includes urban growth area (UGA)
- Includes Urban Reserve Areas (URA)
- 20-year and build-out projections
- Special resource areas and utility corridors not included

Current Water System Overview

- Water treatment plant (15 mgd)
- Four storage reservoirs (total 7.6 mg effective storage)
- Two booster stations
- Three pressure zones
- Distribution system piping (107 miles)
- **Overall system is in good condition!**

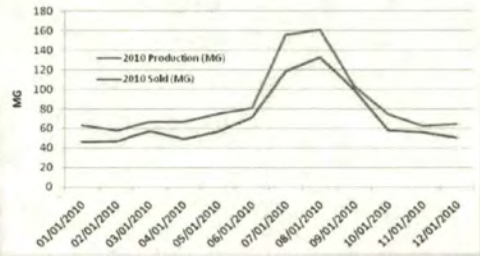
Water Usage Analysis

- Residential, commercial, industrial usage
- Irrigation estimated separately
- Water loss (unaccounted for water) exceeds 10%



Water Loss (Unaccounted For Water)

	2005	2006	2007	2008	2009	2010
Water Produced	1,016	1,130	1,153	1,143	1,120	1,030
Water Sold	938	1,060	1,000	961	919	846
Other Uses	3.5	3.5	3.5	3.5	4.1	3.4
Unaccounted	74	67	150	179	197	181
% Unaccounted	7.3%	5.9%	13.0%	15.7%	17.6%	17.5%



Source of Unaccounted for Water	Potential
Unmetered water users	Low
Water theft	Low
Leaky pipes/valves/hydrants/services	Moderate
Older individual water meters	Moderate
Meter inaccuracies	High

Water Demand Methodology

- Used 2005-2009 average per capita demands to establish baseline 2010 demand (average 3.20 mgd)
- Growth assumptions based on census data
  - Residential growth rate of 2.9%
  - Nonresidential growth rate of 3.5%
  - Additional industrial reserve of 1 mgd
- Distributed existing demands using meter data
- Distribute future demand using land use
  - Flows per household for residential
  - Flows per acre for nonresidential

Future Demand Projections

Scenario	2010	2015	2020	2025	2030	Build-out
Population	19,525	22,525	25,986	29,979	34,585	52,400
Households	**7,873**	**9,083**	**10,478**	**12,088**	**13,946**	**21,129**
RESIDENTIAL						
Average, mgd	1.70	1.96	2.26	2.60	3.00	4.21
Peak Day, mgd	3.62	4.17	4.82	5.56	6.41	8.74
Peak Hour, mgd	6.16	7.10	8.19	9.45	10.9	14.86
NONRESIDENTIAL						
Acreage*	1129	1314	1499	1718	1979	2372
Average, mgd	1.50	1.79	2.12	2.52	2.99	3.09
Peak Day, mgd	3.08	3.66	4.35	5.16	6.13	6.35
Peak Hour, mgd	5.24	6.23	7.40	8.79	10.4	10.80
OTHER MISCELLANEOUS						
3 Future Large Industries	0.00	0.50	0.75	1.00	1.00	1.00
Sherwood	0.00	5.00	5.00	10.0	10.0	20.0
TOTAL SYSTEM						
Average, mgd	3.20	9.24	10.1	16.1	17.0	28.3
Peak Day, mgd	6.70	13.3	14.9	21.7	22.5	36.1
Peak Hour, mgd	11.4	18.8	21.3	29.2	32.3	46.7

*Includes commercial and industrial acreage; excludes public acreage

Distribution System Evaluation

- Good system pressures
- Generally good pipe age / conditions
- Localized fire flow deficiencies in some locations
  - Less than 5% of area
  - Undersized pipelines
  - Inadequate looping
- An additional 35 hydrants are recommended to meet current hydrant coverage standards

Localized Fire Flow Deficiencies

Water Storage Evaluation

- **Existing and future storage needs** (no wells)

Storage Component	Year 2010	Year 2030
Operating Storage[1] (MG)	0.87	1.17
Peaking Storage[2] (MG)	0.98	1.75
Fire Storage[3] (MG)	0.72	0.72
Emergency Storage[4] (MG)	6.40	14.00
Total Storage Required (MG)	8.97	17.64
Less Storage Available (MG)	-8.70	-8.70
Storage Need (MG)	0.27	8.95

1. Operating storage recommendation is 10% of effective volume. For year 2030, it includes an additional 10% storage for the currently proposed 3 MG new tank.
2. Based on Wilsonville demand pattern, assumes supply equals max day demand.
3. Assumes 3000 gpm for 4 hours.
4. Assumes City desires to provide 2 times the average day demand

- **Emergency storage requirements could be reduced by 6.9+ MG with existing backup wells**
- **Recommendations**
  - Construct additional 3.0 MG storage near intersection of Tooze Road and Baker Road (currently planned)
  - Retain functionality of back-up wells where cost-effective

Well Evaluation

- Eight wells
- Prior to water treatment plant, wells provided City's potable water supply
- Wells have been maintained in good condition, but need upgrades
- Production capacity has declined in most wells—need rehabilitation
- Wells serve important role as long-term backup supply
- Consider repurposing use of Nike Well.
- Investigate transfer of Canyon Creek Well water right.

Water Treatment Plant Evaluation

- **Evaluation limited to review of hydraulic and process capacities**
  - Treatment plant master plan update - 2014
- **Facilities largely capable of handling 15+ mgd**
  - Tracer study
  - Clearwell / disinfection modifications after 12 mgd
  - Surge protection on transmission line after 12.5 mgd
- **Water rights (20 mgd) are more than adequate for build-out**

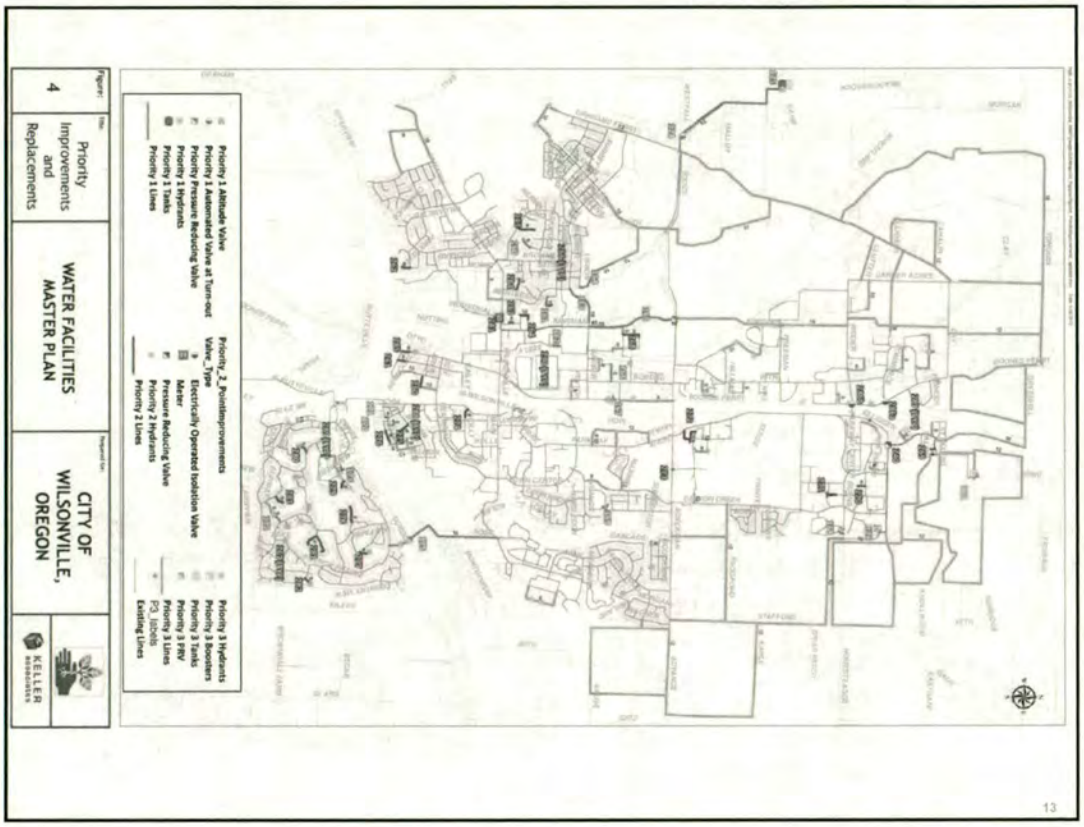
Charbonneau District

- **Predominately cast iron piping which is 40+ years old and needs replacement**
- **District is at risk of becoming isolated from City during major earthquake**
  - Current wells, storage, and pumping capacities meet District needs
- **Seismic evaluation shows Charbonneau tank structure is also at risk during major earthquake**
  - Two long-term options to address seismic risk
  - Option 1 – replace or rehabilitate tank; maintaining existing wells and booster pump station
  - Options 2 – construct secondary pipeline under Willamette River

Goals / Policies / Implementation Measures

- Recommended clarifying text for implementation measure 3.1.5.b
- Recommended three additional policies
  - Policy 3.1.6 - The City of Wilsonville shall continue a comprehensive water conservation program to make effective use of the water infrastructure, source water supply and treatment processes.
  - Policy 3.1.7 - The City of Wilsonville shall maintain an accurate user demand profile to account for actual and anticipated demand conditions in order to assure an adequately sized water system.
  - Policy 3.1.8 - The City of Wilsonville shall coordinate distribution system improvements with other CIP projects, such as roads, wastewater, and storm water, to save construction costs and minimize public impacts during construction.

Exhibit G



Capital Improvement Plan

Priority 1A Improvements (by 2017)

WATER SUPPLY (BY 2017)		
106	Portable Flow Meter (for well tests)	$13,000
WATER TREATMENT AND TRANSMISSION		
	Surge Tank	$170,000
	Clearwell Improvements (assume policy change)	--
WATER STORAGE (BY 2017)		
121	C Level Reservoir Security and Sampling Improv.	$18,000
123	Charbonneau Reservoir Chlorine Monitoring	7,000
124	Automated Valve at Tooze/Westfall (West Side Tank)	58,000
125	3.0 Million Gallon West Side Tank & 24-inch Transmission	5,840,000
126	Elligsen West Tank – Add Altitude Valve	31,000
BOOSTER STATIONS AND TURNOUTS		
140	Charbonneau Booster PRV & SCADA	$22,000
WATER DISTRIBUTION PIPING		
163	18-inch loop on Barber St. (Montebello to Kinsman)	$371,000
165	48-inch Transmission on Kinsman St. – Barber to Boeckman (in design)	3,960,000
	TOTAL PRIORITY 1A IMPROVEMENTS	**$10,490,000**

Priority 1B Improvements (by 2022)

WATER SUPPLY		
110	Nike Well Telemetry & Misc. Improvements	$35,000
111	Wiedeman Well Generator & Telemetry	98,000
112	Boeckman Well Telemetry Upgrade	26,000
113	Gesellschaft SCADA & Instrumentation	32,500
114	Elligsen Well Instrumentation	20,000
BOOSTER STATIONS & TURNOUTS BY (BY 2022)		
143	Charbonneau Booster Flow Meter Vault	$29,000
WATER DISTRIBUTION PIPING (BY 2017)		
160	8-inch Upgrade on Jackson Street	$64,000
161	8-inch Upgrade on Evergreen Street	83,000
162	8-inch Loop North of Seely Street	8,000
164	10-inch Extension on Montebello Street	217,000
166	8-inch Loop between Boberg St. & RR (N. of Barber)	78,000
167	8-inch Loop on Boones Ferry (north of Barber)	19,000
168	10-inch Loop (Appts E. of Canyon Creek/Burns)	41,000
169	8-inch Loop between Vlahos & Canyon Creek	42,000
170	8-inch Upgrade on Metolius cul-de-sac	54,000
171	8-inch Loop on Metolius private drive	20,000
172	8-inch Upgrade on Middle Greens	68,000
173	Fairway Village Hydrant on French Prairie	10,000
175	16-inch Willamette River Crossing to Charbonneau District	1,532,000
	TOTAL PRIORITY 1B IMPROVEMENTS	**$2,476,500**

Capital Improvement Plan (continued)

Priority 2 Improvements (by 2030)

WATER SUPPLY		
203	Gesellschaft Well Generator	$78,000
205	Charbonneau Well Mechanical Building	81,000
	Video Surveillance (various wells)	22,000
BOOSTER STATIONS AND TURNOUTS		
241	Meter Valve and Wilsonville Rd Turnout	$118,000
WATER DISTRIBUTION PIPING		
260	10-inch Extension on 4th Street (E. of Fir)	$69,000
261	8-inch Loop – Magnolia to Tauchman	59,000
262	8-inch Upsize on Olympic Cul-de-sac	44,000
263	8-inch Loop near Kinsman / Wilsonville	36,000
264	10-inch Loop near Kinsman / Gaylord	82,000
265	8-inch Upsize on Lancelot	100,000
266	Fire Hydrants (main City)	119,000
267	Fire Hydrants (Charbonneau)	46,000
268	8-inch Loop near Kinsman (between Barber & Boeckman)	126,000
269	8-inch Upsize near St. Helens	26,000
270	8-inch Loop near Parkway Center / Burns	66,000
271	8-inch Loop near Burns / Canyon Creek	110,000

WATER DISTRIBUTION PIPING (CONTINUED)		
272	10 & 8-inch Loop near Parkway / Boeckman	$315,000
273	12-inch Loop Crossing Boeckman	16,000
274	8-inch Loop at Holly / Parkway	56,000
275	8-inch Upsize at Wallowa	62,000
276	8-inch Upsize on Miami	68,000
277	8-inch Extension for Hydrant Coverage on Lake Bluff	63,000
278	8-inch Upsize an Arbor Glen	92,000
279	8-inch Loop on Fairway Village	42,000
280	8-inch Extension for Fire Flow – Private Drive / Boones Bend	18,000
281	8-inch Upsize on East Lake	187,000
282	8-inch Extension for Fire Flow on Armitage Place	55,000
283	8-inch Upsize on Lake Point Ct.	56,000
284	8-inch Loop Franklin St. to Carriage Estates	94,000
285	8-inch Upgrade on Boones Ferry Road (S. of 2nd St.)	44,000
286	Valves at Commerce Circle and Ridder Road / Boones Ferry I-5 Crossing	44,000
	TOTAL PRIORITY 2 IMPROVEMENTS	**$2,394,000**

Priority 3 improvements (not shown) include development related projects such as pipeline upsize costs and Zone D booster station

Recurring Maintenance Costs

- Identified approximately $1.8 million in specific repair/replacement projects
- Recommended recurring maintenance budgets

Activity	Budget	Frequency
Wash exterior of aboveground reservoirs*	$5,000 / each	Every 5 years
Clean and inspect interior of reservoirs*	$5,000 / each	Every 10 years
Pipeline and valve replacement (1,725 ft/year)*	$173,000	Annual recommended budget for 20-year planning period
Meter replacement (250 meters/year)*	$50,000	Annual recommended budget (assumes 20-year life)
Hydrant replacement (10 hydrants/year)*	$30,000	Annual recommended budget
Well hole and facility upgrades/maintenance*	$95,000-$105,000	Annual budget (includes 6 wells only)
GIS and water model updates*	$6,000	Recommended annual budget for 3rd party support
Water Master Plan update	$150,000	Every 5 years
Water Management and Conservation Plan (WMCP)	$20,000	Every 10 years, beginning 2022
WMCP progress reports	$5,000	Every 10 years, beginning 2017

*Recommended maintenance and replacement annual budget of about $365K/year

LP12-0002
Water System Master Plan Update
Planning Commission Record Index

Staff Report dated July 3, 2012, for a July 11, 2012 Planning Commission Public Hearing including:

Exhibit A:	Water System Master Plan Final Draft dated June 26, 2012 *(Located in the Planning Division.)*
Exhibit B:	CD with Water System Master Plan Final Draft and Appendices dated June 26, 2012.
Exhibit C:	Proposed Changes to Existing Comprehensive Plan Policies
Exhibit D:	An email dated June 21, 2012, from Sherry Oeser of Metro, regarding Wilsonville Water System Master Plan.

City of
WILSONVILLE
in OREGON

PLANNING COMISSION MEETING
STAFF REPORT

Meeting Date: July 11, 2012	**Subject:** Update of the City's Water System Master Plan **Staff Member:** Chris Neamtzu, Planning Director and Amanda Hoffman, Assistant Planner **Department:** Community Development
Action Required	**Advisory Board/Commission Recommendation**
☐ Motion ☒ Public Hearing Date: 7/11/12 ☐ Ordinance 1st Reading Date: ☐ Ordinance 2nd Reading Date: ☐ Resolution ☐ Information or Direction ☐ Information Only ☐ Council Direction ☐ Consent Agenda	☐ Approval ☐ Denial ☐ None Forwarded ☒ Not Applicable **Comments:** The Planning Commission action is in the form of a recommendation to the City Council

Staff Recommendation:
Staff respectfully recommends that the Planning Commission conduct the public hearing on the proposed Master Plan, and forward a recommendation of approval to the City Council.

Recommended Language for Motion:
The Planning Commission recommends approval of the Water System Master Plan to the City Council (with or without specific changes).

PROJECT / ISSUE RELATES TO:		
☒Council Goals/Priorities B. Ensure efficient, cost effective and sustainable development and infrastructure.	☒Adopted Master Plan(s) Update to the 2002 Water System Master Plan	☐Not Applicable

ISSUE BEFORE THE COMMISSION:
The Commission is reviewing an update to the 2002 Water System Master Plan. The purpose of this Master Plan Update is to document current water demand, evaluate current system deficiencies, estimate future water demands over a 20-year growth horizon, and estimate the capital and operation costs needed to meet future demands. The current Plan is a major revision and update to the 2002 Master Plan which was completed before the Willamette River Water Treatment Plant began operation.

Overall, the City Water System is in very good shape. Most of the distribution system is less than 30 years old, there are adequate storage facilities for emergencies, more than adequate water rights for the long term, and the water treatment plant is state-of-the art. The biggest concerns are: keeping up with growth, what to do with the existing wells – which have not been adequately maintained over the last ten years, improving fire hydrant coverage and fire flows in selected parts of the City, and addressing a number of systemic issues in the Charbonneau District.

The Master Plan has been re-organized based on Planning Commission input. A user-friendly section on acronyms and abbreviations has been added to provide important information for the casual reviewer. A succinct executive summary highlighting key categories has been added bringing all of the critical themes together into one easy to read section. Project lists have been compiled for repairs, replacements, maintenance and Capital Improvements. Lastly, a section on the proposed Comprehensive Plan policies has been included.

There are a number of policy issues that are included with this Master Plan update that warrant mention.

1. This Master Plan uses a methodology to estimate growth in water demand that is not consistent with the methodology used by METRO for estimating growth in population and employment, which is in turn used by METRO and the City for Urban Growth Planning and Transportation Master Planning. The METRO methodology was found to be overly conservative, resulting in unrealistic future water demand estimates, and correspondingly higher future Capital and O&M requirements.
2. Four changes are recommended to *Comprehensive Plan* Goal 3.1. (see Chapter 7):
    a. The Plan recommends a text addition to Implementation Measure 3.1.5.b to include the completion of <u>off-site facilities or upgrades</u> as potential Conditions of Approval for developments if the development negatively impacts fire flows to existing properties.
    b. The plan recommends a new Policy 3.1.6 to continue the City's existing water conservation program.
    c. The Plan recommends a new Policy 3.1.7 to maintain an accurate user demand profile via metering of actual usage.
    d. The Plan recommends a new Policy 3.1.8 to coordinate distribution system improvements with other CIP projects to save construction costs and minimize public impacts.

The strikethrough and bold version of the Comprehensive Policies can be found as Exhibit C. When finally adopted, the Water System Master Plan will become a sub-element of the City's Comprehensive Plan.

EXECUTIVE SUMMARY:
The City of Wilsonville authorized Keller Associates, Inc. to complete a Water System Master Plan in February 2011. The previous master plan was completed in 2002. Over the course of the last decade, many changes have occurred to the water system, including the completion of the state-of-the-art surface water treatment plant that has displaced the City's groundwater wells as the primary water supply. The primary purpose of the planning effort includes the following:

- Update water system demands and demand projections for an expanded study area, including water sales to the City of Sherwood.
- Update the planning criteria used to evaluate system performance and prioritize improvements.
- Update the existing water distribution system hydraulic computer model.
- Evaluate the current condition of the City's water system assets.
- Identify existing and anticipated future deficiencies.
- Update the City's capital improvement plan as it pertains to the water distribution system (pipelines, wells, booster stations, and tanks).
- Provide a review of existing water treatment facilities and identify potential bottlenecks that would need to be addressed to reach a 15 million gallon a day (mgd) treatment capacity.
- Propose new Comprehensive Plan policies.

EXPECTED RESULTS:
The purpose of the Master Plan is to document the current condition and demand of the Water System, predict future demand, and evaluate the cost and timing of necessary operational, maintenance, and capital improvements over the next twenty years. Adoption of the Master Plan will allow the project team to advance into a rate study later this year or next year.

TIMELINE:
Planning Commission Work Sessions March 14, 2012 and May 19, 2012
Planning Commission Public Hearing July 11, 2012
City Council Work Sessions March 19 and July 16, 2012
City Council Hearing and Adoption-August and/or September
Rate Study-After Council Adoption

CURRENT YEAR BUDGET IMPACTS:
Creation and adoption of the Water System Master Plan is an approved Capital Project (#1082).

FINANCIAL REVIEW / COMMENTS:
Reviewed by: _____ Date: _____

A lower Capital Improvement Estimate could reduce SDC and User Fee calculations contained in a revised Rate Study – to be performed late 2012 or in 2013. The Capital Plan is minimal ($9.5M of $13M 10 year CIP is already budgeted for West Side Reservoir and Segment 3b line).

LEGAL REVIEW / COMMENT:
Reviewed by: _____ Date: _____

COMMUNITY INVOLVEMENT PROCESS:
The following community involvement process was conducted:

- Planning Commission Work Session on March 14th and May 9th.
- External technical reviewers include the City of Sherwood, Tualatin Valley Water District, and Veolia Water.
- Open House was held on May 9, 2012
- Public input is being solicited through the City's website.
- City Council Work Session March 19th and scheduled for July 16, 2012
- Articles were published in the Boones Ferry Messenger
- Direct mailing was done to the Chamber and the 30 largest water users in the City.
- City-wide Ballot Measure 56 notice was provided (>4,500 notices)

Following the Ballot Measure 56 notice there were approximately 8 inquiries both by phone, and in person. Citizens generally sought to understand the legalistic language required to be included at the heading of the notice. To date, no specific comments have been provided for the Commission's consideration related to the Master Plan and there appears to be no areas of controversy. Affected external agencies (Metro, TVWD, Veolia, and the City of Sherwood) were also provided the opportunity to review and comment. At the time of preparation of this staff report, specific comments had not been provided.

POTENTIAL IMPACTS or BENEFIT TO THE COMMUNITY (businesses, neighborhoods, protected and other groups):
Not included with this Master Planning effort is a future rate study that could have an effect on future water rates either negative or positive. A current Master Plan provides the City and its customers with important information about the condition of this critical infrastructure segment. A complete snapshot of system needs allows for important Capital Improvement project prioritization and execution. The Water System Master Plan will improve or maintain the level of services as it pertains to the City's water distribution system and extends the planning period to 2030.

ALTERNATIVES:
Utility Master Plans should be updated no later than every 10 years due to rapidly changing conditions in the community. While doing nothing was an alternative, it would not have been in the best interest of the community's healthy welfare or safety.

CITY MANAGER COMMENT:

EXHIBITS:

Exhibit A: Water System Master Plan Final Draft dated June 26, 2012 (included under separate cover)

Exhibit B: CD with Water System Master Plan Final Draft and Appendices dated June 26, 2012.

Exhibit C: Proposed Changes to Existing Comprehensive Plan Policies

Exhibit D: An email dated June 21, 2012, from Sherry Oeser of Metro, regarding Wilsonville Water System Master Plan.

CONCLUSIONARY FINDINGS

STATEWIDE PLANNING GOALS

Statewide Planning Goal #1 - Citizen Involvement (OAR 660-015-0000(1)): *To develop a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the planning process.*

Response: Work sessions were held with both the Planning Commission and City Council. Staff also conducted a public open house. A web page was created specifically for the purpose of collecting comments on the draft Master Plan. The City of Wilsonville has provided notice of public hearings before the Planning Commission consistent with the Planning and Land Development Ordinance requirements. Such notices were posted in the newspaper, and were provided to 4,511 property owners within the City limits, a list of interested agencies, emailed to 7 people, and were posted in three locations throughout the City and on the website. The City has conducted an extensive public involvement process. To date, there has been minimal interest in the Plan and there appears to be no major areas of controversy. At the upcoming public hearing, the public will be afforded an opportunity to provide public testimony to the Planning Commission as part of deliberations on this matter. The City Council will also hold a public hearing on this proposal. **This goal is met.**

Statewide Planning Goal #11 – Public Facilities and Services (OAR 660-015-0000(11)): *It is the purpose of Goal 11 to plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development. Cities are required to develop public facilities plans for their UGBs.*

Response: The development of a Water System Master Plan is consistent with the requirements for a water system under Statewide Planning Goal 11. This update will document the current condition of the water system, predict future demand, and evaluate the cost and timing of necessary operational, maintenance, and capital improvements over the next 20 years. **This goal is met.**

COMPREHENSIVE PLAN

In recognition of Statewide Planning Goals and to provide a framework for development of park and recreation facilities, the following policy and implementation measures have been established:

GOAL 1.1 To encourage and provide means for interested parties to be involved in land use planning processes, on individual cases and City-wide programs and policies.

Policy 1.1.1 The City of Wilsonville shall provide opportunities for a wide range of public involvement in City planning programs and processes.

Response: On March 14, and May 9, 2012 the Planning Commission conducted work sessions on the concepts contained in the proposed Master Plan. On March 19th the City Council conducted a worksession. Public notice of the public hearing was mailed to all property owners in the City via a Ballot 56 notice, as well as to agencies and interested individuals. **The above criteria are supported by the Planning Commission process.**

Implementation Measure 1.1.1.a Provide for early public involvement to address neighborhood or community concerns regarding Comprehensive Plan and Development Code changes. Whenever practical to do so, City staff will provide information for public review while it is still in "draft" form, thereby allowing for community involvement before decisions have been made.

Response: The Planning Commission practice is to conduct a minimum of one work session per legislation agenda item allowing for early involvement into the concepts being proposed. This item has had numerous work sessions. This item was discussed at both the March 14, and May 9, 2012 Planning Commission meetings, the March 19th City Council meeting and a Public Open House that was held on May 9, 2012. Draft versions of the proposed Master Plan have been available in paper and digital form, as well as on the city web site. **This criterion is met.**

Implementation Measure 1.1.1.e Encourage the participation of individuals who meet any of the following criteria:

1. *They reside within the City of Wilsonville.*
2. *They are employers or employees within the City of Wilsonville.*
3. *They own real property within the City of Wilsonville.*
4. *They reside or own property within the City's planning area or Urban Growth Boundary adjacent to Wilsonville.*

Response: Through the work-sessions, public notification and public hearing schedule, the City has encouraged the participation of a wide variety of individuals addressing the groups listed above. **This criterion is met.**

Implementation Measure 1.1.1.f Establish and maintain procedures that will allow any interested parties to supply information.

Response: The established procedures, public notification process and enhanced city web site notifications all allow interested parties to supply information. The City's Citizen Request Module (CRM) provides another venue for citizens to comment on projects. **This criterion is met.**

GOAL 1.2: For Wilsonville to have an interested, informed, and involved citizenry.

Policy 1.2.1 The City of Wilsonville shall provide user-friendly information to assist the public in participating in City planning programs and processes.

Response: Through the work session schedule, public hearing notices, available Planning Commission meeting minutes and staff reports on the city web site, the City has informed and encouraged the participation of a wide variety of individuals. **This criterion is met.**

GOAL 3.1: To assure that good quality public facilities and service s are available with adequate capacity to meet community needs, while also assuring that growth does not exceed the community's commitment to provide adequate facilities and services.

Policy 3.1.1 The City of Wilsonville shall provide public facilities to enhance the health, safety, educational, and recreational aspects of urban living.

Response: The purpose of this Master Plan update is to document current condition and demand of the Water System in order to provide for future growth. The Plan recommends maintaining wells as backup supply for emergencies, additional hydrants and looping in some areas and a new 16" pipeline under the river to Charbonneau. **The plan supports the above criteria.**

Implementation Measure 3.1.1.a The City will continue to prepare and implement master plans for facilities/services, as sub-elements of the City's Comprehensive Plan. Facilities/services will be designed and constructed to help implement the City's Comprehensive Plan.

Response: The City is proposing this Master Plan update in order to carry out and be consistent with the policies of the Comprehensive Plan. One of the biggest challenges the Plan presents is keeping up with growth, addressing deteriorating Charbonneau infrastructure and improving fire-flow in certain areas. **This criterion is satisfied.**

Policy 3.1.5 The City shall continue to develop, operate and maintain a water system, including wells, pumps, reservoirs, transmission mains and a surface water treatment plant capable of serving all urban development within the incorporated City limits, in conformance with federal, state, and regional water quality standards. The City shall also continue to maintain the lines of the distribution system once they have been installed and accepted by the City.

Response: The City has continued to operate and maintain the existing water system consistent with Federal, State and Regional Water quality standards and is working on improving that system by updating the Master Plan. In general, the current condition of the Wilsonville

distribution, treatment and storage infrastructure is very good. No major pressure or volume deficiencies were identified and there are currently no major facility deficiencies. However, a large excess capacity does not exist either, and increased capital and O&M spending will be needed to keep pace with growth in order to avoid future deficiencies. **The Plan supports the above criterion.**

Implementation Measure 3.1.5.a The City shall review and, where necessary, update the Water System Master Plan to conform to the planned land uses shown in the Comprehensive Plan and any subsequent amendments to the Plan.

Response: This proposal is to update the Water System Master Plan, therefore **this criterion is met.**

GENERAL CONCLUSIONARY SUMMARY OF FINDINGS

- The Master Plan is consistent with the Comprehensive Plan goals and policies.
- In general, the current condition of the Wilsonville distribution, treatment, and storage infrastructure is very good.
- Future demand growth is based on actual demand growth from 2000 to 2010.
- Approval of the Master Plan extends the planning period to 2030.
- The City has more than adequate water resources (e.g., water rights) to meet all estimated future demands for a build-out population of 52,400.
- Capital Plan is minimal.
- Biggest concerns are keeping up with growth, addressing deteriorating Charbonneau infrastructure, and improving fire flow in certain areas.
- Plan recommends maintaining wells as backup supply for emergencies.
- Plan recommends additional hydrants and looping in some areas.
- Plan recommends new 16" pipeline under the river to Charbonneau.
- Plan recommends increased O&M costs.
- Rate study will follow the approval of the Master Plan-late 2012 or in 2013.

As is evidenced by the staff report and findings contained herein, the proposal to update the City's Water System Master Plan is consistent with the applicable statewide planning goals and criteria contained in the Comprehensive Plan.

EXHIBITS:

Exhibit A: Water System Master Plan Final Draft dated June 26, 2012 (included under separate cover)

Exhibit B: CD with Water System Master Plan Final Draft and Appendices dated June 26, 2012.

Exhibit C: Proposed Changes to Existing Comprehensive Plan Policies

Exhibit D: An email dated June 21, 2012, from Sherry Oeser of Metro, regarding Wilsonville Water System Master Plan.

PROPOSED CHANGES TO EXISTING POLICIES IN THE COMPREHENISVE PLAN

The proposed changes to the existing Comprehensive Plan are shown in under-lined text. There are no proposed deletions from the existing text.

Policy 3.1.5 The City shall continue to develop, operate and maintain a water system, including wells, pumps, reservoirs, transmission mains and a surface water treatment plant capable of serving all urban development within the incorporated City limits, in conformance with federal, state, and regional water quality standards. The City shall also continue to maintain the lines of the distribution system once they have been installed and accepted by the City.

Implementation Measure 3.1.5.a The City shall review and, where necessary, update the Water System Master Plan to conform to the planned land uses shown in the Comprehensive Plan and any subsequent amendments to the Plan.

Implementation Measure 3.1.5.b All major lines shall be extended in conformance to the line sizes indicated on the Master Plan and, at a minimum, provisions for future system looping shall be made. If the type, scale, and/or location of a proposed development negatively impacts operating pressures or available fire flows to other existing properties or warrants off-site improvements to achieve or maintain minimum pressures or fire flows, the Development Review Board may require completion of looped water lines, off-site facilities, pipelines, and/or facility/pipeline upgrades in conjunction with the development.

Implementation Measure 3.1.5.c Extensions shall be made at the cost of the developer or landowner of the property being served. When a major line is extended that is sized to provide service to lands other than those requiring the initial extension, the City may:

1. Authorize and administer formation of a Local Improvement District to allocate the cost of the line improvements to all properties benefiting from the extension; or
2. Continue to utilize a pay-back system whereby the initial developer may recover an equitable share of the cost of the extension from benefiting property owners/developers as the properties are developed.

Implementation Measure 3.1.5.d. All water lines shall be installed in accordance with the City's urban growth policies and Public Works Standards.

Implementation Measure 3.1.5.e The City shall continue to use its Capital Improvements Program to plan and schedule major water system improvements needed to serve continued development (e.g., additional water treatment plant expansions, transmission mains, wells, pumps and reservoirs).

Policy 3.1.6 The City of Wilsonville shall continue a comprehensive water conservation program to make effective use of the water infrastructure, source water supply and treatment processes.

Implementation Measure 3.1.6.a The City will track system water usage through production metering and service billing records and take appropriate actions to maintain a target annual average unaccounted for water volume of less than 10% of total production.

Implementation Measure 3.1.6.b The City will maintain other programs and activities as necessary to maintain effective conservation throughout the water system.

Policy 3.1.7 The City of Wilsonville shall maintain an accurate user demand profile to account for actual and anticipated demand conditions in order to assure an adequately sized water system.

Implementation Measure 3.1.7.a The City will track system water usage through production metering and service billing records and take appropriate actions to maintain a target annual average unaccounted for water volume of less than 10% of total production.

Implementation Measure 3.1.7.b The City will maintain other programs and activities as necessary to maintain effective conservation throughout the water system.

Policy 3.1.8 The City of Wilsonville shall coordinate distribution system improvements with other CIP projects, such as roads, wastewater, and storm water, to save construction costs and minimize public impacts during construction.

Subject: Wilsonville Water System Master Plan

From: Sherry Oeser [mailto:Sherry.Oeser@oregonmetro.gov]
Sent: Thursday, June 21, 2012 2:30 PM
To: Mende, Eric
Subject: Wilsonville Water System Master Plan

I've reviewed the update of the City's Water System Master Plan and it looks like you've appropriately taken into consideration urban reserve areas in your planning and I have no other comments on the plan.

Sherry Oeser
Principal Regional Planner

Metro
600 NE Grand Ave
Portland, OR 97232-2736
503-797-1721
www.oregonmetro.gov

Metro | Making a great place

Tualatin Valley Fire & Rescue

www.tvfr.com

August 22, 2012

Eric Mende
Deputy City Engineer
City of Wilsonville

RE: Wilsonville Master Water Plan Update

Dear Mr. Mende:

Thank you for the opportunity to provide input on the proposed changes to Wilsonville's Water Master Plan. Tualatin Valley Fire & Rescue appreciates the reliability of the city's water system. When fighting fire, we depend on an adequate water supply at every fire hydrant to protect the community.

At the recent Public Hearing, several issues were brought up for consideration, a couple of which the Fire District would like to provide additional information for reference.

1) When in the boundaries of a municipal water system, the Fire Code requires that firefighting water must come from a fire hydrant system. If development takes place outside the boundaries of a municipal water system in an unprotected area, the standards dictate that firefighting water is to be supplied in the form of approved tanks, along with appurtenances, and access roads that can support the load of a fire truck weighing at least 60,000 pounds. **Pools and ponds are not acceptable** due dependability problems that include inadequate access or deferred maintenance. An alternative water source can also take considerably longer to tap into than a hydrant that is required to be located within 400 feet of every structure.
2) The looping of a water distribution system provides valuable assurance that the system can deliver a predictable supply at all times. Looping creates redundancy in the water source and distribution system providing a critical back-up that improves overall security. When a pipeline breaks or a valve fails, a looped system can have the enhanced capacity to continue providing water. In a regional disaster, the community may need to rely on emergency reserve water sources, and/or a standby distribution system. The Fire District encourages the development of a secondary water supply pipeline to serve the Charbonneau area.

Please contact me with any questions or concerns.

Sincerely,

Karen Mohling
Deputy Fire Marshal

WALLULIS & ASSOCIATES
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7725 SW VILLAGE GREENS CIRCLE
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REGISTRATIONS, CERTIFICATIONS
OREGON: ENVIRONMENTAL ENGINEER
CIVIL ENGINEER
CONTROL ENGINEER
WATER RIGHTS EXAMINER
ENERGY AUDITOR
LAND SURVEYOR
PREVIOUSLY REGISTERED AS PROFESSIONAL ENGINEER IN:
WASHINGTON, ALASKA
CALIFORNIA & FLORIDA

September 4, 2012

TO: Mayor Tim Knapp, Council President Celia Nunez, Councilor Richard Goddard, and Councilor Scott Starr.

SUBJECT: Update of Wilsonville's Water Master Plan, Sent by email 9/4/12.

The following quotation is found in your Packet on Page 2 (86 on computer):
"Segment 3b 48" Water Line Final Design at 50%. On schedule, on budget."

And the following quotation from Appendix B, page TM3-7 (computer page #25):
"The City is beginning pre-engineering to move forward with the initial 3.0 MG storage reservoir, with a second to follow in five to six years."

The above brings into question, is the public hearing processes merely a sham and window dressing for commitments already made. Accepting this as a probability, I am still offering the following information for your review, evaluation and consideration before the November 6th council meeting.

I had intended on using some of the following information later on in my campaign for Mayor. However with the impending possible council actions, to do so, I would in effect, be a silent enabler to an apparent course of action resulting in a gross disservice to the City and a waste of resources. Remaining silent, I would also be irresponsible and acting contradictory to the high standards that my profession professes.

As with everything else when faced with making important decisions such as this, the objective is to determine the best affordable supplied water with lowest acceptable attendant risks. Hopefully the information herein will assist you in achieving that goal.

For example, what would it take to guarantee our water treatment plant to be capable of always being secure plus, overcoming all possible accidental, natural and contaminants from terrorists (not recommended for discussion in this forum). The latter has been of considerable emphasis since 9/11.

The water treatment plant would have to be protected like Fort Knox with guards and defenses all around the plant perimeter plus adding multiple steps in the treatment chain to remove all the other possible ways contaminants could reach the consumer. In addition there are other defensive actions that would have to be implemented throughout the distribution and delivery system. You would not be able to afford the cost of the treated water under this scenario, so you have to come up with a plan that has acceptable risks at an affordable cost to the consumer. The risks for different Plans are significant.

Rec'd 9/6/12 pck.

The first thing I would like to dispense with, and laid to rest is the issue of the Charbonneau District's water existing facilities being adequate for fire fighting. I concur with the following statement in the proposed update of the City's Water Master Plan: **"...., it appears that with the existing well supply, the tank volume is adequate to provide operational and fire storage (2,500 gpm for 2 hours) to the district."***
*Page F-3, 1.3.2, (required fire storage only 0.3 MG of the 0.7 MG tank storage).

The purpose of my prior reference to the ease of adding easy access to the 10 ponds and swimming pool's, was to bring to the attention that these sources could be added as an additional low cost means for fighting fires, **if everything else failed**. Keep this in mind as you consider the following alternative upgrades to the City's water system.

I will put three basic **EMERGENCY** alternative plans before you to consider. But for you to make an informative decision, I feel it is essential that you are fully cognizant of the **immense difference in the two different reservoirs** you have available for meeting emergencies. I don't feel it is necessary to expound on surface water reservoirs and/or their placement at different levels of burial.

The subsurface underground reservoirs are an entirely different matter and are found in different types of underlain strata. For the purposes of this letter I will limit the discussion to the Columbia River Basalts, which this City formerly used as its sole source for several years.

To be fully aware of the awesome size of this underground basalt reservoir covering three states, please open the above attachment "Columbia River Basalt's".

This map depicts the area receiving the massive flows of lava covering 3 States from near Idaho border to the mouth of the Columbia River. Large vents have been discovered near the Idaho border where this lava erupted from. Individual continuous flows have been identified from these vents clear to the mouth of the Columbia River.

Several eruptions occurred over the years with varying thicknesses. Each new flow entrapped whatever was deposited, if anything, since the previous eruption. A flow of a +/- of 100 feet thickness is not unusual in the profiles of the Columbia River Basalt's.

The top of each lava flow cooled more rapidly then the lower level, creating a honeycomb like material on top, porous enough to transmit water. The underlying lava cooled more slowly and is thought take up to +/- 100 years to completely cool down. This underlying lava cools, shrinks and forms into polygon columns, with voids created between the columns. When an upper honeycombed water bearing zone (aquifer) is pumped out at a faster rate then the natural recharge rate through the honeycombed layer, the well pump has to be lowered to the next aquifer level, e.g. 100 feet. This was not an unusual occurrence in eastern Oregon.

In some areas over the Columbia River Basalt's, where the overlying honeycomb crust has eroded away, you can see at the surface of multiple polygons. These look similar in appearance to the clay laden desert soil that has dried after a rain and formed surface crusts. In some other areas with high erosion you may see multiple or a single column standing alone like a sentry.

The voids created between the columns let water from one lava flow (aquifer level) to go down to the next level. The only thing restricting the downward flow of water is the degree of porosity of the overlying rapidly cooled cap and any materials it may have encapsulated. A series of highly porous caps can provide water from several aquifer levels in a single well, yielding 1,000s of gallons per minute.

As the Assistant City Engineer for Pendleton, Oregon, I was assigned the responsibility of supervising the drilling of a deep well 24/7 into the underlying Columbia River Basalt's in 1952. Pendleton for years had relied on springs some 20 miles upstream and adjacent to the Umatilla River. The City started in the late 1940s to drill wells for: additional supply during drought years, peaking demands and at times when the springs supply was unsuitable.

In the eastern part of the State the precipitation is 1/4 more or less than in our part of the State. It is not unusual in eastern Oregon to be able to walk across rivers in the late summers and winters in ankle deep or less of flowing water.

Over the years as the owner of a consulting engineering firm, with the home office in Pendleton, I was involved in the development of so many wells I cannot even make an estimate on how many. Wells were drilled into different underlying soils, and varied from as low as 1 gpm (1,440 gal/day) to more than 3,000 gpm. The overwhelming types of wells however that my firm was involved with, were wells in the Columbia River Basalt.

In the late 1950's my firm was retained by the City of Pendleton to prepare a Water Master Plan addressing the needs for the next 20 years. Of particular concern was the continuous dropping of the water table level in all the City's basalt wells.

One of interesting things we discovered from actual available pumping records from 1948, was that the City had withdrawn enough water from the underlying aquifers, to fill a canal a 100 yards wide approximately 4 feet deep from Pendleton to Portland.

Shortly after completion of Pendleton's first Water Master Plan my Firm also provided a Water Master Plan for the City of Hermiston. Hermiston did not have any springs like Pendleton, their sole source was water from the Columbia River Basalts. The City had fairly good records on the pumpage from the wells back to the turn of the century. Even though Hermiston was historically the smaller of the two cities, they had longer period of withdrawals. Historic usage of water from their wells was also the equivalent of another canal 100 yards wide of similar depth of 4 feet from Hermiston to Portland.

Subsequently some +/- 20 years later an updated Water Master Plan was prepared for the City of Pendleton, the aforesaid canal from Pendleton to Portland had gained another approximately 6" in depth and the water table had continued its decline.

In discussing the amounts of water withdrawn by these two cities with staff of the Oregon Water Resources, they said they were already aware of all the withdrawals from the Columbia River Basalts. They estimated that only approximately 15% of the total withdrawal was municipal/industrial and the balance of 85% was agricultural. Some of the generalized facts about the water withdrawn from the basalt aquifers in eastern Oregon are:

- The age of water in most of the deep wells are thousands of years old, potable and not stagnant even with that age.

- The wells can be recharged with treated surface water, and placed in this environment does not become stagnant, and acquires the same potability as the natural water.

- Wells can in most instances be placed in localized areas to satisfy needed demand, without requiring the construction of major transmission lines.

- A few wells did have water containing hydrogen sulfide gas. This gas was always easily removed by splashing the well water over launder trays inside a reservoir, or in towers constructed at the well site with internal splash plates to remove the gas.

- Sometime the wells were contaminated during the drilling or with the installation of the pumping equipment. This contamination, when encountered, has been corrected with one or more strong doses of a chlorine solution applied down the bore hole.

- Rarely has there are other water quality issues in deep basalt wells that required special remedial solutions.

In addition to studying the general geology in the Willamette Valley, I contacted the USGS this last week about the basalt's in the Willamette Valley. During our discussion they confirmed that there is a similar division of 15% municipal/residential and 85% agricultural of water usage here in the Valley.

Starting in about 1960, I submitted the recharge concept several different times and ways to the Director of the OWRD who was not an engineer. He however always had an engineer in attendance at all our meetings. This engineer also had the ear of an influential member of the legislature, who would fight it strongly. While these efforts appeared to be of no avail, other engineers in the OWRD staff could see the merits of artificial recharge.

After years of effort travelling back and forth to Salem, I received a phone call from the local Water Master in Pendleton advising me that the engineer in question has been put on notice to remain silent or face dismissal, effectively diminishing his retirement benefits in the remaining couple of years. I was informed the best plan of action, would be to take a relaxed stand until this engineer was no longer in office or having the title and the strong advisory position to the aforesaid member of legislature.

It took another period of several years of hearings around the State before the OWRD's rules and regulations were modified to permit artificial recharge of aquifers. Even after the said engineer had retired he left behind several staff member as his converts. There were usually 2 or 3 of these converts at all the hearings around the State. I travelled to most of these hearings, confronting the staff members alone, putting for the merits of artificial recharge, and convincing others about the benefits of artificial recharge. After years of these hearings the OWRD's rules and regulations were finally modified to permit the recharge of the underlying aquifers (different types).

In the late 1980s there was a large federal funded program to evaluate the merits of artificial recharge in the western states. The main driving force for this federal funded program was the large Ogallala aquifer that covers eight states. The Ogallala basin was commonly called the "Bread Basket" of the United States.

In the request for RFP's, I prepared an application for the grant money for the City of Hermiston. Hermiston was one of the few cities to obtain grant money, and I believe the only one in the Columbia River Basalt. **The City of Hermiston was the very first City to obtain a permit to artificially recharge the underlying Columbia River Basalt acquifers.** The following attachments are letters from the key individuals that were directly involved in the Hermiston artificial recharge project: A, B, C, D, E & F.

The City of Pendleton, however, has really spearheaded and the successfully demonstrated the benefits of artificial recharge. Pendleton has converted 3 of their single purpose wells to dual purpose wells, capable of injecting treated river water into the underlying basalt reservoir. **The City has been injecting more treated river water into the basalts then they take out each year.** The result of these efforts has been a continuous lessening in the rate of decline in the level of the water table. Last year it was 1 foot and they think this year it could be zero. **The reason it hasn't responded more rapidly, is that there others users in the same aquifer continuing to making withdrawals. These users are getting a free ride from the City's efforts.** The City is planning to convert 2 more single purpose wells into dual purpose wells this year.

Since the inception of the concept of artificial recharge, I have also been a proponent of the State providing legislation for equitable compensation from the takers to those that replenish the underlying basalt reservoir. This legislation could be modeled after the Bancroft Act that equitably assesses properties for their fair share like that used for improvement districts for streets, sidewalks, water lines, sewer lines, etc.

It is relatively easy to identify entities that are making withdrawals from the same aquifer in a particular basin. Over the years, I have been cautioned by others to defer the concept of assessments until artificial recharge has been documented as a viable and essential program.

The concern has been that there would be so much opposition to assessments that the recharge concept could be placed in jeopardy. With the documented success at Pendleton, I believe the time is now the right time to pursue such legislation. Most of the larger wells today are required to meter their withdrawals, and this information could be utilized to make equitable assessments and fund recharge programs.

With all that history behind us, let's compare only three of the several possible Plans and the consequences of the different Plans.

THE CRITERIA FOR ALL 3 SCENARIOS ARE:

- Based on circumstances eight years out to the year **2020**. This time span is required for the City to implement the first major improvements in the final draft plan.
- The same time span shall be used for all scenarios.
- Two emergency events are to occur in the years 2015 after the completion of the first 3.0 MG tank (reservoir) and for 2019. The latter date is based on the premise that the City's second 3.0 MG tank (reservoir), is complete and in operation.

- We will use the crisis cited by Mr. Mende, Deputy City Engineer in your "Packet", "For example, what happens if the 63" diameter finish water pipeline fails and how long will it take to fix the pipeline?" Now the remedy Mr. Mende described above could be expected to take several days or weeks to be fully restored and operational. Other types of crisis could take substantially longer periods.

SCENARIO 1, CRITERIA. THE CITY'S PROPOSED PLAN:

1. Storage requirements shall be based on 2 days of the projected 20 year annual day's average demand for emergencies plus fire demand.

2. The City's wells are considered to not exist or be available in any way.

3. The City's intertie with Tualatin in considered to not exist or available in any way.

4. The year is 2015 and the first 3.0 MG storage tank (reservoir), and large transmission lines have been completed and are operable.

   We do know that in the year 2012 without the first 3.0 MG reservoir, the water in the then oversized reservoirs required the drawing down of the reservoir's water levels and pumping them back up, and repeating the cycle over again to keep the water from going stagnant and dissipation of the chlorination residual.

5. The above given crisis has now taken place. It is now painfully apparent that the described crisis will take several days or weeks before the Water treatment plant is again capable of delivering any water. No longer can the water be cycled (churned). The water levels in the reservoirs begin to fall. The water starts to stagnate and the disinfectant dissipates. The water becomes un-palatable and the chlorine residual has diminished completely, making the safety of the water questionable. It becomes only a question of how many days it takes before water 3.0 MG reservoir and other storage to become unsuitable for human consumption.

   The following courses of action would probably take place:

   a. All irrigation would be mandated to stop immediately.

   b. Bathing severely limited to like once a week or more.

   c. Advise users to boil the water because of the dissipation of the chlorine.

   d. Suggest users purchase bottled water from stores to mitigate the situation.

   e. Advise the fire department that they will be required to extinguish fires by using water from the river. This places Charbonneau District's capability of providing ready access to ten ponds and pools in a more economically favorable light as a better risk reduction alternative than being limited to the Willamette River.

   f. In the next few days the reservoir levels keep falling, water pressures drop, and soon the reservoirs are bone dry.

g. The importation of sanitized tankers is initiated to bring water in for large demand users and homes wanting to store several gallons of water in home containers.

h. The longer it takes to restore the City's selected scenario to be restored the higher is the level of the misery index.

5. The year is 2019 second 3.0 MG storage tank (reservoir) and additional large transmission lines were completed in year 2017-2018 and are operable. The addition of the second 3.0 MG adds only a few days additional storage until it also runs dry. In the mean time the overwhelming surplus storage makes it all the more difficult to keep the treated water from stagnation and dissipation of the chlorine residual. It just becomes an unnecessary management burden.

   If the purpose is to store water for other users this makes no sense whatsoever. For example: if it was for Sherwood or anyone else, and they were to pay for it (in one of various ways), it would be prudent for them to build it at their locale. A break in a long single long transmission line between any the two cities, would preclude them e.g. Sherwood, from receiving the benefit of their investment.

6. Now any attempt to modify the City's selected criteria and any attempted to add back the other City's available resources e.g. wells, intertie, collapses this scenario like tall stack of playing cards.

SCENARIO 2, CRITERIA: A REASONABLE LOW RISK ACCEPTABLE PLAN

1. Storage requirement is be based on 1 day of the projected 20 year annual day's average demand for emergencies plus fire demand (not normally required).

2. Six of City's 8 wells are selected as additional sources to satisfying emergencies. Their inclusion avoids the necessity for building any additional storage for the next 20 years. This is acknowledged as a true statement by the Deputy City Engineer[1,2].

   [1] "City staff concurs with Mr. Wallulis that the refurbishing the six wells and maintaining them as a backup supply is an economically viable way to reduce the amount of future storage needed, and the corresponding capital cost. Mr. Wallulis is also correct that the change in calculation will eliminate the need for future reservoirs during the 20 year planning period." Memorandum, computer page 75 in Council's 9/6/12 "Packet".

   [2] Mr. Wallulis correctly states that one day of ADD is the current industry minimum standard..." and "The net result of selecting the one day criteria is the potential elimination of the need for the 3 MG West Side Reservoir project." Memorandum, computer page 76 in Council's 9/6/12 "Packet".

3. To be consistent with Scenario 1 criteria, I will also address having an emergency in the year 2015.

4. With the passing of several years, surely there has been time to modify the mutual aid agreement with the City of Tualatin, to obtain an additional 1 MGD expeditiously in an emergency.

5. With the above available resources and assuming an emergency occurs in the summer months, the City would probably only have to partially limit irrigation to alternate days for half of the users at a time, or at most banning irrigation and letting the yards go dormant.

   The City could continue in this mode indefinitely. The impact on the underlying water table in the Columbia River Basalt's would probably be a lowering of the water table of a few inches for a month's pumping and a few feet for a year's pumping.

   The underlying water table has rebounded since the City stopped using this source, and would naturally recharge again after any emergency pumping stopped. Above ground reservoirs should be considered to be the size of tea cups, when they are compared to the size of the lake in the underlying basalt aquifer.

This scenario would be highly acceptable to most cities I worked with, but let's go to scenario # 3.

SCENARIO 3, CRITERIA. A CADILLAC PLAN FOR THE PRICE OF A CHEVROLET.

1. Adopt all of the criteria in Scenario 2 above and add the following.

2. Equip all the wells with standby power. It is unlikely that an emergency would occur simultaneously when: the water treatment plant was out of service for an extended period; and that there would also be an area wide power outage. But to have a Cadillac Plan we will add this as a requirement and require all wells to be equipped with standby power.

3. Aerate the water in the Canyon Creek Well with the hydrogen sulfide gas in an aeration column to strip out the gas. Add this well back into the system.

4. Subject the contaminants on the well screen in the Nike Well to determine the cause of the fouling. I am assuming this well bore may have encountered some iron rich lava. This well may also be salvageable.

5. Drill 2 additional wells in the Charbonneau District to add a high level of redundancy to the water supply. With piping modifications cited in the present Master Water Plan, all the Charbonneau wells could also support the other wells in meeting system demands.

   The City's Draft Plans state about the Charbonneau's District water demands:
   "Typical peaking factors for the City of Wilsonville were applied to these values to estimate the system demands reported in Table 1."[3]
   [3] Appendix F, page F-1.

   Several of the residential homes in the District however, including mine, are provided with river water alleviating a considerable amount of the District's peaking demand.

6. The existing base of Charbonneau District's concrete reservoir is situated over special treated reinforced soils. It is stated in the City's Draft Plans, there is minimal risk of damage to property in the event that an earthquake would create a partial failure.

   Information on earthquakes are shown on the Oregon Department of Geology and Mineral Industries Map IMS-4. The largest recorded earthquake had a magnitude of 5.6 in 1993 and is identified as the Scott Mills earthquake. The Charbonneau tank (reservoir) apparently suffered no damage from this largest recorded earthquake.

   I am also of the opinion that the existing 12" water transmission line to the District across the Boone Bridge is a most reliable method of receiving and transmitting water to and from the District. My confidence is higher in the State's reinforcement of Boone Bridge capability to withstand future earthquakes, protect lives, maintain this essential main traffic artery then the 16" water line proposed in the Plan.

   Photograph in the Draft Plans show the exposed compressive strands in the reservoir walls to be in excellent shape. The risk of keeping this reservoir is very low. I recommend for keeping this reservoir for its remaining life of 50 years or more. This will avoid the cost of $3,327,000 to: remove the tank; restore the site; and pay for a new 16" water line across and under the Willamette River.

7. I would also add to this Cadillac Plan that at least one well to be designed for dual purpose so it could be used as an artificial recharge well. In this capacity the well could be used to replace any water withdrawn during an emergency event with treated river water.

   Exercising this option would also improve the flexibility in management of our water resources utilizing the basalt water for meeting peaking demands and replenishment with treated river water. And expansion of this approach of converting more wells as dual purpose could eliminate the need for any more reservoirs forever.

Scenario #3 would cost a fraction of the costs to implement Scenario #1, thereby qualifies for the claim of being a "Cadillac Plan for the cost of Chevrolet."

In summary, implementing all aspects of Scenario #3 would have the following benefits:

- Assurance of always having adequate potable water for all water demands, even with: simultaneously having the worst possible calamity happen in the river or at the water treatment plant plus an area loss of electrical power.
- Water from a source that does not require any treatment other than disinfection.
- Has been stored for up to several 1,000s of years and is potable and palatable.
- From sources secure from surface contamination and terrorist type threats.

As a youth, I was raised in what would be considered exceptionally frugal circumstances and taught to not be wasteful. Extravagance has its when it comes to using your own resources, but not when it comes to using resources of others to satisfy your own whims.

I am not necessarily opposed to making large and significant improvements to water when they can be justified economically and result in an improved water quality. To document this I have attached two of the letters I received from Corvallis. These letters were sent years after I had left my position as Utility Engineer over the Water and Waste Water Divisions. Attachments G & H.

Attachment "F" on page 5 has been added in this letter and was not included in the email sent to the City Council on 9/4/12. Representative "Chuck" Norris, knowing of Hermiston's desire to pursue artificial recharge, and his concurrence as to the merits, requested the State Administrator of Health to recommend my appointment to the Governor's Umatilla Basin Committee. The Umatilla Basin includes the cities of Hermiston, Pendleton and several other cities. I was appointed to the Committee and the letter express appreciation for serving.

Attachment "I" has been added here because the Umatilla Basin encompasses a much larger area and scope. All entities, e.g. farmers, industry, cities, individual, fish and game, etc. tapping into the Columbia River Basalts for water brought forth their concerns.

Separately for the City Council, additional copies of Attachment "I" and "F" have been made and are submitted along with this letter for their perusal.

I commend Councilor Goddard for his astuteness in picking up on the staff's insertion of the requirement that the Councils approval of the Plan would irrevocably fix all the proposed elements of the Plan. This was going to be one of my issues to use in my campaign but will forgo now. However, there is an ample supply of other troubling issues that will be brought forward in the future campaign.

I am willing to host a meeting in my home for any or all of the Council to have a one on one question and answer session. This would be a more informal type of meeting conducted in a similar fashion, as your work sessions are with your staff.

Very truly yours,

Stanley Wallulis

Stanley Wallulis, P.E., P.L.S., C.W.E., E.A.

A: Map of Columbia River Basalts

city of hermiston

180 N.E. 2ND STREET/HERMISTON, OREGON/97838/FAX (503) 567-5530

August 30, 1993

Mr. Stanley G. Wallulis
Wallulis and Associates, Inc.
7725 S.W. Village Greens Circle
Wilsonville, Oregon 97070

Dear Stan:

Since I am contemplating retirement next month, I decided it was timely to recognize the value of your 30 years or more of prior and present professional services to the City of Hermiston.

Your Firm has provided excellent professional services in the: design of the City's production wells (deep and shallow), distribution and transmission lines, treatment facilities, reservoirs, Supervisory Control and Data Acquisition (SCADA) system, servicing of residential developments, water master planning, representing the City before state and federal agencies, and the initiation of the first planned and approved artificial recharge and recovery (ARR) project (injecting of water from shallow wells or surface sources into the deep Columbia River Basalt aquifers for storage).

Few individuals are aware the years of effort that your Firm promoted the concept of ARR by: working with state elected officials, staff of the Water Resources Department, the Water Resources Commission, and serving by appointment of the Governor on the "Umatilla Sub-Basin Citizens Advisory Committee". The leadership and expenses borne by your Firm resulted in the State of Oregon amending their statutes and administrative rules to permit ARR by the injection of water from our shallow well into our deep wells. The "Umatilla Basin Report" published in August of 1988 and subsequent amendments to the Water Department's Administrative Rules attest to the leadership and innovative thought provided by you. Because of your efforts, other engineering firms and cities are now also beginning to plan on incorporating ARR as an important water management tool.

Unfortunately the completion of the City's ARR project will occur some time considerably after my retirement. The multi-agency involvement has certainly delayed the implementation of this project by at least two to three years. Your prior services have been commendable and I wish you the best of luck in the continuing battle with the State and federal agencies involved in this 80% federally funded project.

Your competency, honesty, and engineering talents has been one of the rare business relationships that I have enjoyed over the several years in the implementation of major water system improvements. Please do not hesitate to use this letter as a letter of recommendation to other potential clients. I may be reached at my home phone number 503-567-5405, when not fishing, hunting or in other such worthwhile pursuits.

Best personal regards,

Julian R. Woodward

Julian R. Woodward
Water Superintendent

B: #3 - Hermiston - Woodward

City of
Grants Pass
"Where The Rogue River Runs"

April 1, 2002

Mr. Stanley Wallulis
Charbonneau District
7725 SW Village Greens Circle
Wilsonville, Oregon 97070

Re: Thank You Friend

Dear Stan:

Your letter of March 11, 2002 is one I will keep in my file for the rest of my career. There are few true gentlemen in our respective professions, and it has been my pleasure to have shared so many hours with you, one of the rare gentlemen.

I have had little interaction with the new utility engineer. My department directors have informed me they believe they have a "winner." Thank you for your concerns, and I assure you that we will continue to find the happiness that management of a City can provide.

Congratulations on your trip to Pendleton. I remember well the hours we spent attempting to complete the recharge issues for Hermiston, and the fun we had with the well construction project for Hermiston Foods. Combining treatment with injection will be a challenge for Pendleton; however, if you are the author of the plan, they will find a way to implement.

You are a good man, one I am proud to call a friend. My very best to you as you take the next steps in your career. My e-mail address at home is peterall@cdsnet.net, and I would really enjoy sharing issues with you. Please feel free to "drop me a line" electronically.

Sincerely,

Bill

William A. Peterson, Jr.
City Manager

CF #02-057

J:\CITY MANAGER\WAP\Corres\wallulis.doc

C: #5 - Hermiston - Peterson

101 Northwest "A" Street • Grants Pass, Oregon 97526 • (541) 474-6360 • Fax (541) 479-0812

city of hermiston

295 EAST MAIN STREET / HERMISTON, OREGON/97838

March 28, 1985

TO WHOM IT MAY CONCERN:

Upon being appointed city manager for the City of Hermiston, Oregon, on March 15, 1961, I initially retained the professional services of Stanley Wallulis as the City's consulting engineer.

Over this period of time Mr. Wallulis has been retained by the City to provide engineering services for streets, wastewater and water facilities. The most recently completed project was the development of a 4.6 million gallon/day shallow gravel packed well, storage with treatment by chlorination, monitoring and telemetry and the installation of 16 inch and 18 inch diameter water transmission lines in 1977.

In 1982 Mr. Wallulis was authorized to make a water study for the City which the city council has now adopted. This study identified a specific capital improvement of approximately $10,000,000 in four phases keyed to City growth. The study also addressed itself to the probably ultimate service area and the ultimate water demand. The innovative concept of placing potable water in the underground basaltic rock aquifer in the winter months for withdrawal in the summer months can save the City several million dollars in future years by reducing the size of physical plant and transmission lines.

Throughout our professional relationship, I have found Mr. Wallulis to be trustworthy, responsive to other team members on projects, fair in his business relationships, personable and abreast of the available current technology.

Please contact me for any further information you may desire about our city's relationship with Mr. Wallulis.

Sincerely,

L. T. Harper

L. T. Harper
City Manager

LTH/pat

D: #4 - Hermiston - Harper

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

OCT - 9 1992

Reply to
Attn of: WD-139

- Copy - Stan, Dud & I
Bob - FYI
- Please return this copy to me

Ron Golus, Project Manager
U.S. Bureau of Reclamation
Federal Bldg. & U.S. Courthouse
Box 043-550 West Fort St.
Boise, ID 83724

RE: Hermiston Testing Plan for Extended Project Period

Dear Mr. Golus:

I have reviewed the report titled "Testing Plan and Budgets for Extended Periods of Federal Fiscal Years of 1993-94 and 1994-95" for the city of Hermiston, Oregon. The monitoring and sampling schedule described in the document is well thought-out and documented. I believe that the plan, when followed, will produce data which will be very useful in determining water quality impacts from the project. I commend Mr. Wallulis and Mr. Loeb for a job well-done.

Please give me a call if you have any questions (206) 553-1593.

Sincerely,

Martha Sabol

Martha Sabol
Hydrogeologist

cc: Ed Brookshire, Hermiston City Manager
Frank Packard, U.S. Geological Survey

E: #20 - Hermiston - EPA Sabol

CHARLES R. "CHUCK" NORRIS
UMATILLA COUNTY
DISTRICT 57

REPLY TO ADDRESS INDICATED:
☐ House of Representatives
Salem, Oregon 97310-1347
☐ 121, 725 E. Highland Ave.
Hermiston, Oregon 97838

567-8638, ofc
567-8652, res

HOUSE OF REPRESENTATIVES
SALEM, OREGON
97310-1347

October 29, 1987

SUBJECT: Recommendation for Appointment to the Drinking Water Advisory Committee
STANLEY G. WALLULIS, P.E., P.E., & P.L.S

TO: Kristine M. Gebbie, Administrator of Health
811 State Office Building - 1400 SW Fifth Ave
Portland, Oregon 97201

Dear Ms. Gebbie:

As both private citizen and legislator I have been heavily involved in matters relating to water for all uses. That has led me to some contact with those responsibile for safe drinking water issues. In the course of those contacts I have reviewed the current membership of the Drinking Water Advisory Committee, a committee under the general direction of your position. In that review I have noted two things which prompt this letter.

1. None of the members is from east of the Cascade Mountains.

2. The term of Harold R. Murray expires in November, 1987, and I assume that a replacement will soon be named by you.

With points 1 and 2 above in mind it is my privilege to strongly recommend that you appoint Stanley G. Wallulis of Pendleton to the committee. Enclosed you will find a copy of Mr. Wallulis' professional resume (furnished at my request). It clearly and emphatically demonstrates his exceptional qualifications to serve the state of Oregon on a committee that will no doubt assume greater importance and levels of activity as time goes on.

In my aforementioned involvement with water issues in the Umatilla Basin (including chairmanship of the Umatilla Basin Groundwater Task Force, May 85-86) I have personally dealt with Stan Wallulis and relied on his professional judgement. As his resume reveals, his participation in and management of water system projects has been wide-ranging both geographically and in technical character. While you may expect him to objectively consider drinking water issues of statewide significance, he is uniquely qualified to represent the concerns and technology prevalent east of the Cascade Crest.

I urge your favorable consideration of this recommendation for appointment of STANLEY G. WALLULIS, professional engineer, to the Drinking Water Advisory Committee. Your attention in this matter is appreciated.

Sincerely,

C.R. "Chuck" Norris

1 encl: Professional resume - Wallulis

cc: James R. Boydston, Health Division

F: #16 - Hermiston - Reprentative Norris

City of Corvallis
INCORPORATED JANUARY 1857

CORVALLIS CITY HALL
501 S.W. MADISON AVENUE
CORVALLIS, OREGON 97330

PUBLIC WORKS DEPARTMENT

(503)
757-6936

December 28, 1977

TO WHOM IT MAY CONCERN

Stan Wallulis was the Utilities Engineer for the City of Corvallis from November 6, 1967, to July 31, 1970. After his resignation, I was selected to succeed him and have filled that position for seven years.

I have had full opportunity to observe his accomplishments while holding this position. He structured the Utilities Division into an efficient organization and the changes I have since made are strictly those dictated by growth and changing conditions. He had analyzed the deficiencies within the system and left behind explicit and viable plans for their correction. He initiated major capitol projects to improve the water service and provide for future growth. He implemented new water rates to put the system on a sound financial basis.

Although I have only met Mr. Wallulis twice, it is apparent that he understands utility system operations and financing.

I have often remarked that the greatest frustrations of my 26 years of utility management have been to operate facilities designed by professional engineers who have had no direct operational or management experience. I feel that Mr. Wallulis is a gratifying exception to this standard frustration.

CORVALLIS UTILITIES DIVISION

Alton R Andrews

Alton R. Andrews
Utilities Engineer

ARA:mm

G: #1 - Corvallis - Andrews

City of Corvallis

CORVALLIS CITY HALL
501 S.W. MADISON AVENUE
POST OFFICE BOX 1083
CORVALLIS, OREGON 97339

UTILITIES DEPARTMENT

(503) 757-6936

January 10, 1983

To Whom it May Concern:

The purpose of this letter is to serve as a statement of services provided to the city of Corvallis by Mr. Stanley Wallulis, P.E. From 1967 through 1970, Mr. Wallulis served as Utilities Engineer for the city of Corvallis. During that period, he initiated the following major water system improvements:

1. Expansion of a surface water filtration plant from 9.7 MGD to 21 MGD;

2. Expansion of a raw water intake;

3. Construction of three water booster stations;

4. Construction of three finished water reservoirs ranging from 125,000 gallons to 5,000,000 gallons;

5. Replacement of approximately 43 miles of water distribution system piping; and

6. Construction of approximately 4 miles of water transmission piping.

All projects have had a substantial long term positive effect on the operation and maintenance cost of the Corvallis water system. As an example, the pipe replacement program reduced the unaccounted water from approximately 45% to 4%. This has resulted in lower annual operating costs and deferred an additional water treatment plant expansion for 11 years.

I have found that all the work conducted by Mr. Wallulis to be based upon sound engineering principals and that opportunities for innovative ideas were investigated and utilized where justified.

If you need any additional information, please contact me.

Floyd W. Collins
Utilities Director

/jj

cc: Treatment Coordinator Brough

H: #2 - Corvallis - Collins

NEIL GOLDSCHMIDT
GOVERNOR

Water Resources Department

3850 PORTLAND ROAD NE, SALEM, OREGON 97310 PHONE 378-3671

July 27, 1988

Stan Wallulis
P.O. Box 398
Pendleton, OR 97801

Dear Stan:

Adoption of the Umatilla program on June 24, 1988, concluded the formal Umatilla planning process. We hope you won't miss the monthly meetings and lively debate too much.

Basin planning usually begins with little fanfare and ends with none. We regret there was little chance to formally thank the entire committee for its participation and assistance. Please accept now, our sincere appreciation for your personal contribution of time, interest, and thought to this effort. We are confident the end product is better due to your input and that of your fellow committee members. We hope you also share this view.

We value our association with each committee member. You are invited to use us as points of contact in this agency on water problems or issues that interest you. Likewise, we hope we may turn to you for assistance on some water matter in the future.

Thank you again, for playing a significant role in the Umatilla Basin planning process.

Sincerely,

Steven C. Brutscher

Steven C. Brutscher
Project Coordinator

Greg Nelson

Greg Nelson
Planner

SCB:GN:gs

I: #25 - Govenor's Umatilla Basin Committee

King, Sandy

From:	Stanley Wallulis <swallulis@gmail.com>
Sent:	Tuesday, September 04, 2012 7:03 PM
To:	Mayor; celianunez01@gmail.com; richardgoddard2010@gmail.com; scottstarr97070@gmail.com
Subject:	Update of the City of Wilsonville's Water System
Attachments:	Columbia River Basalts.doc; 3-Hermiston-Woodward.pdf; 5 - Grants Pass - Peterson.pdf; 4 - Hermiston - Harper.pdf; 20 - USEPA - Sabol.pdf; 16 - State Rep - Norris.pdf; 1 - Corvallis - Andrews.pdf; 2 - Corvallis - Collins.pdf

TO: Mayor Tim Knapp, Council President Celia Nunez, Councilor Richard Goddard, and Councilor Scott Starr.

SUBJECT: Update of Wilsonville's Water Master Plan.

The following quotation is found in your Packet on Page 2 (86 on computer):

"Segment 3b 48" Water Line Final Design at 50%. On schedule, on budget."

And the following quotation from Appendix B, page TM3-7 (computer page #25):

"The City is beginning pre-engineering to move forward with the initial 3.0 MG storage reservoir, with a second to follow in five to six years."

The above brings into question, is the public hearing processes merely a sham and window dressing for commitments already made. Accepting this as a probability, I am still offering the following information for your review, evaluation and consideration before the November 6th council meeting.

I had intended on using some of the following information later on in my campaign for Mayor. However with the impending possible council actions, to do so, I would in effect, be

a silent enabler to an apparent course of action resulting in a gross disservice to the City and a waste of resources. Remaining silent, I would also be irresponsible and acting contradictory to the high standards that my profession professes.

As with everything else when faced with making important decisions such as this, the objective is to determine the best affordable supplied water with lowest acceptable attendant risks. Hopefully the information herein will assist you in achieving that goal.

For example, what would it take to guarantee our water treatment plant to be capable of always being secure plus, overcoming all possible accidental, natural and contaminants from terrorists (not recommended for discussion in this forum). The latter has been of considerable emphasis since 9/11.

The water treatment plant would have to be protected like Fort Knox with guards and defenses all around the plant perimeter plus adding multiple steps in the treatment chain to remove all the other possible ways contaminants could reach the consumer. In addition there are other defensive actions that would have to be implemented throughout the distribution and delivery system. You would not be able to afford the cost of the treated water under this scenario, so you have to come up with a plan that has acceptable risks at an affordable cost to the consumer. The risks for different Plans are significant.

The first thing I would like to dispense with, and laid to rest is the issue of the Charbonneau District's water existing facilities being adequate for fire fighting. I concur with the following statement in the proposed update of the City's Water Master Plan: "...., **it appears that with the existing well supply, the tank volume is adequate to provide operational and fire storage (2,500 gpm for 2 hours) to the district."***

*Page F-3, 1.3.2, (required fire storage only 0.3 MG of the 0.7 MG tank storage).

The purpose of my prior reference to the ease of adding easy access to the 10 ponds and swimming pool's, was to bring to the attention that these sources could be added as an additional low cost means for fighting fires, **if everything else failed**. Keep this in mind as you consider the following alternative upgrades to the City's water system.

I will put three basic **EMERGENCY** alternative plans before you to consider. But for you to make an informative decision, I feel it is essential that you are fully cognizant of the **immense difference in the two different reservoirs** you have available for meeting emergencies. I don't feel it is necessary to expound on surface water reservoirs and/or their placement at different levels of burial.

The subsurface underground reservoirs are an entirely different matter and are found in different types of underlain strata. For the purposes of this letter I will limit the discussion to the Columbia River Basalts, which this City formerly used as its sole source for several years.

To be fully aware of the awesome size of this underground basalt reservoir covering three states, please open the above attachment "Columbia River Basalt's".

This map depicts the area receiving the massive flows of lava covering 3 States from near Idaho border to the mouth of the Columbia River. Large vents have been discovered near the Idaho border where this lava erupted from. Individual continuous flows have been identified from these vents clear to the mouth of the Columbia River.

Several eruptions occurred over the years with varying thicknesses. Each new flow entrapped whatever was deposited, if anything, since the previous eruption. A flow of a +/- of 100 feet thickness is not unusual in the profiles of the Columbia River Basalt's.

The top of each lava flow cooled more rapidly then the lower level, creating a honeycomb like material on top, porous enough to transmit water. The underlying lava cooled more slowly and is thought take up to +/- 100 years to completely cool down. This underlying lava cools, shrinks and forms into polygon columns, with voids created between the columns. When an upper honeycombed water bearing zone (aquifer) is pumped out at a faster rate then the natural recharge rate through the honeycombed layer, the well pump has to be lowered to the next aquifer level, e.g. 100 feet. This was not an unusual occurrence in eastern Oregon.

In some areas over the Columbia River Basalt's, where the overlying honeycomb crust has eroded away, you can see at the surface of multiple polygons. These look similar in

appearance to the clay laden desert soil that has dried after a rain and formed surface crusts. In some other areas with high erosion you may see multiple or a single column standing alone like a sentry.

The voids created between the columns let water from one lava flow (aquifer level) to go down to the next level. The only thing restricting the downward flow of water is the degree of porosity of the overlying rapidly cooled cap and any materials it may have encapsulated. A series of highly porous caps can provide water from several aquifer levels in a single well, yielding 1,000s of gallons per minute.

As the Assistant City Engineer for Pendleton, Oregon, I was assigned the responsibility of supervising the drilling of a deep well 24/7 into the underlying Columbia River Basalt's in 1952. Pendleton for years had relied on springs some 20 miles upstream and adjacent to the Umatilla River. The City started in the late 1940s to drill wells for: additional supply during drought years, peaking demands and at times when the springs supply was unsuitable.

In the eastern part of the State the precipitation is 1/4 more or less than in our part of the State. It is not unusual in eastern Oregon to be able to walk across rivers in the late summers and winters in ankle deep or less of flowing water.

Over the years as the owner of a consulting engineering firm, with the home office in Pendleton, I was involved in the development of so many wells I cannot even make an estimate on how many. Wells were drilled into different underlying soils, and varied from as low as 1 gpm (1,440 gal/day) to more than 3,000 gpm. The overwhelming types of wells however that my firm was involved with, were wells in the Columbia River Basalt.

In the late 1950's my firm was retained by the City of Pendleton to prepare a Water Master Plan addressing the needs for the next 20 years. Of particular concern was the continuous dropping of the water table level in all the City's basalt wells.

One of interesting things we discovered from actual available pumping records from 1948, was that the City had withdrawn enough water from the underlying aquifers, to fill a canal a 100 yards wide approximately 4 feet deep from Pendleton to Portland.

Shortly after completion of Pendleton's first Water Master Plan my Firm also provided a Water Master Plan for the City of Hermiston. Hermiston did not have any springs like Pendleton, their sole source was water from the Columbia River Basalts. The City had fairly good records on the pumpage from the wells back to the turn of the century. Even though Hermiston was historically the smaller of the two cities, they had longer period of withdrawals. Historic usage of water from their wells was also the equivalent of another canal 100 yards wide of similar depth of 4 feet from Hermiston to Portland.

Subsequently some +/- 20 years later an updated Water Master Plan was prepared for the City of Pendleton, the aforesaid canal from Pendleton to Portland had gained another approximately 6" in depth and the water table had continued its decline.

In discussing the amounts of water withdrawn by these two cities with staff of the Oregon Water Resources, they said they were already aware of all the withdrawals from the Columbia River Basalts. They estimated that only approximately 15% of the total withdrawal was municipal/industrial and the balance of 85% was agricultural. Some of the generalized facts about the water withdrawn from the basalt aquifers in eastern Oregon are:

- The age of water in most of the deep wells are thousands of years old, potable and not stagnant even with that age.

- The wells can be recharged with treated surface water, and placed in this environment does not become stagnant, and acquires the same potability as the natural water.

- Wells can in most instances be placed in localized areas to satisfy needed demand, without requiring the construction of major transmission lines.

- A few wells did have water containing hydrogen sulfide gas. This gas was always easily removed by splashing the well water over launder trays inside a reservoir, or in towers constructed at the well site with internal splash plates to remove the gas.

- Sometime the wells were contaminated during the drilling or with the installation of the pumping equipment. This contamination, when encountered, has been corrected with one or more strong doses of a chlorine solution applied down the bore hole.

- Rarely has there are other water quality issues in deep basalt wells that required special remedial solutions.

In addition to studying the general geology in the Willamette Valley, I contacted the USGS this last week about the basalt's in the Willamette Valley. During our discussion they confirmed that there is a similar division of 15% municipal/residential and 85% agricultural of water usage here in the Valley.

Starting in about 1960, I submitted the recharge concept several different times and ways to the Director of the OWRD who was not an engineer. He however always had an engineer in attendance at all our meetings. This engineer also had the ear of an influential member of the legislature, who would fight it strongly. While these efforts appeared to be of no avail, other engineers in the OWRD staff could see the merits of artificial recharge.

After years of effort travelling back and forth to Salem, I received a phone call from the local Water Master in Pendleton advising me that the engineer in question has been put on notice to remain silent or face dismissal, effectively diminishing his retirement benefits in the remaining couple of years. I was informed the best plan of action, would be to take a relaxed stand until this engineer was no longer in office or having the title and the strong advisory position to the aforesaid member of legislature.

It took another period of several years of hearings around the State before the OWRD's rules and regulations were modified to permit artificial recharge of aquifers. Even after the said engineer had retired he left behind several staff member as his converts. There were usually 2 or 3 of these converts at all the hearings around the State. I travelled to most of these hearings, confronting the staff members alone, putting for the merits of artificial recharge, and convincing others about the benefits of artificial recharge. After years of these hearings the OWRD's rules and regulations were finally modified to permit the recharge of the underlying aquifers (different types).

In the late 1980s there was a large federal funded program to evaluate the merits of artificial recharge in the western states. The main driving force for this federal funded program was the large Ogallala aquifer that covers eight states. The Ogallala basin was commonly called the "Bread Basket" of the United States.

In the request for RFP's, I prepared an application for the grant money for the City of Hermiston. Hermiston was one of the few cities to obtain grant money, and I believe the only one in the Columbia River Basalt. **The City of Hermiston was the very first City to obtain a permit to artificially recharge the underlying Columbia River Basalt acquifers.** The following attachments are letters from the key individuals that were directly involved in the Hermiston artificial recharge project: #3, #5, #4, #20 & #16.

The City of Pendleton, however, has really spearheaded and the successfully demonstrated the benefits of artificial recharge. Pendleton has converted 3 of their single purpose wells to dual purpose wells, capable of injecting treated river water into the underlying basalt reservoir. **The City has been injecting more treated river water into the basalts then they take out each year.** The result of these efforts has been a continuous lessening in the rate of decline in the level of the water table. Last year it was 1 foot and they think this year it could be zero. **The reason it hasn't responded more rapidly, is that there others users in the same aquifer continuing to making withdrawals. These users are getting a free ride from the City's efforts.** The City is planning to convert 2 more single purpose wells into dual purpose wells this year.

Since the inception of the concept of artificial recharge, I have also been a proponent of the State providing legislation for equitable compensation from the takers to those that replenish the underlying basalt reservoir. This legislation could be modeled after the Bancroft Act that equitably assesses properties for their fair share like that used for improvement districts for streets, sidewalks, water lines, sewer lines, etc.

It is relatively easy to identify entities that are making withdrawals from the same aquifer in a particular basin. Over the years, I have been cautioned by others to defer the concept of assessments until artificial recharge has been documented as a viable and essential program.

The concern has been that there would be so much opposition to assessments that the recharge concept could be placed in jeopardy. With the documented success at Pendleton, I believe the time is now the right time to pursue such legislation. Most of the larger wells today are required to meter their withdrawals, and this information could be utilized to make equitable assessments and fund recharge programs.

With all that history behind us, let's compare only three of the several possible Plans and the consequences of the different Plans.

THE CRITERIA FOR ALL 3 SCENARIOS ARE:

- Based on circumstances eight years out to the year **2020**. This time span is required for the City to implement the first major improvements in the final draft plan.

- The same time span shall be used for all scenarios.

- Two emergency events are to occur in the years 2015 after the completion of the first 3.0 MG tank (reservoir) and for 2019. The latter date is based on the premise that the City's second 3.0 MG tank (reservoir), is complete and in operation.

- We will use the crisis cited by Mr. Mende, Deputy City Engineer in your "Packet", "For example, what happens if the 63" diameter finish water pipeline fails and how long will it take to fix the pipeline?" Now the remedy Mr. Mende described above could be expected to take several days or weeks to be fully restored and operational. Other types of crisis could take substantially longer periods.

SCENARIO 1, CRITERIA. THE CITY'S PROPOSED PLAN:

1. Storage requirements shall be based on 2 days of the projected 20 year annual day's average demand for emergencies plus fire demand.

2. The City's wells are considered to not exist or be available in any way.

3. The City's intertie with Tualatin in considered to not exist or available in any way.

4. The year is 2015 and the first 3.0 MG storage tank (reservoir), and large transmission lines have been completed and are operable.

We do know that in the year 2012 without the first 3.0 MG reservoir, the water in the then oversized reservoirs required the drawing down of the reservoir's water levels and pumping them back up, and repeating the cycle over again to keep the water from going stagnant and dissipation of the chlorination residual.

5. The above given crisis has now taken place. It is now painfully apparent that the described crisis will take several days or weeks before the Water treatment plant is again capable of delivering any water. No longer can the water be cycled (churned). The water levels in the reservoirs begin to fall. The water starts to stagnate and the disinfectant dissipates. The water becomes un-palatable and the chlorine residual has diminished completely, making the safety of the water questionable. It becomes only a question of how many days it takes before water 3.0 MG reservoir and other storage to become unsuitable for human consumption.

The following courses of action would probably take place:

a. All irrigation would be mandated to stop immediately.

b. Bathing severely limited to like once a week or more.

c. Advise users to boil the water because of the dissipation of the chlorine.

d. Suggest users purchase bottled water from stores to mitigate the situation.

e. Advise the fire department that they will be required to extinguish fires by using water from the river. This places Charbonneau District's capability of providing ready access to ten ponds and pools in a more economically favorable light as a better risk reduction alternative than being limited to the Willamette River.

f. In the next few days the reservoir levels keep falling, water pressures drop, and soon the reservoirs are bone dry.

g. The importation of sanitized tankers is initiated to bring water in for large demand users and homes wanting to store several gallons of water in home containers.

h. The longer it takes to restore the City's selected scenario to be restored the higher is the level of the misery index.

5. The year is 2019 second 3.0 MG storage tank (reservoir) and additional large transmission lines were completed in year 2017-2018 and are operable. The addition of the second 3.0 MG adds only a few days additional storage until it also runs dry. In the mean time the overwhelming surplus storage makes it all the more difficult to keep the treated water from stagnation and dissipation of the chlorine residual. It just becomes an unnecessary management burden.

If the purpose is to store water for other users this makes no sense whatsoever. For example: if it was for Sherwood or anyone else, and they were to pay for it (in one of various ways), it would be prudent for them to build it at their locale. A break in a long single long transmission line between any the two cities, would preclude them e.g. Sherwood, from receiving the benefit of their investment.

6. Now any attempt to modify the City's selected criteria and any attempted to add back the other City's available resources e.g. wells, intertie, collapses this scenario like tall stack of playing cards.

SCENARIO 2, CRITERIA. A REASONABLE LOW RISK ACCEPTABLE PLAN

1. Storage requirement is be based on 1 day of the projected 20 year annual day's average demand for emergencies plus fire demand (not normally required).

2. Six of City's 8 wells are selected as additional sources to satisfying emergencies. Their inclusion avoids the necessity for building any additional storage for the next 20 years. This is acknowledged as a true statement by the Deputy City Engineer[1,2].

[1] "City staff concurs with Mr. Wallulis that the refurbishing the six wells and maintaining them as a backup supply is an economically viable way to reduce the amount of future storage needed, and the corresponding capital cost. Mr. Wallulis is also correct that the change in calculation will eliminate the need for future reservoirs during the 20 year planning period." Memorandum, computer page 75 in Council's 9/6/12 "Packet".

[2] Mr. Wallulis correctly states that one day of ADD is the current industry minimum standard..." and "The net result of selecting the one day criteria is the potential elimination of the need for the 3 MG West Side Reservoir project." Memorandum, computer page 76 in Council's 9/6/12 "Packet".

3. To be consistent with Scenario 1 criteria, I will also address having an emergency in the year 2015.

4. With the passing of several years, surely there has been time to modify the mutual aid agreement with the City of Tualatin, to obtain an additional 1 MGD expeditiously in an emergency.

5. With the above available resources and assuming an emergency occurs in the summer months, the City would probably only have to partially limit irrigation to alternate days for half of the users at a time, or at most banning irrigation and letting the yards go dormant.

The City could continue in this mode indefinitely. The impact on the underlying water table in the Columbia River Basalt's would probably be a lowering of the water table of a few inches for a month's pumping and a few feet for a year's pumping.

The underlying water table has rebounded since the City stopped using this source, and would naturally recharge again after any emergency pumping stopped. Above ground reservoirs should be considered to be the size of tea cups, when they are compared to the size of the lake in the underlying basalt aquifer.

This scenario would be highly acceptable to most cities I worked with, but let's go to scenario # 3.

SCENARIO 3, CRITERIA. A CADILLAC PLAN FOR THE PRICE OF A CHEVROLET.

1. Adopt all of the criteria in Scenario 2 above and add the following.

2. Equip all the wells with standby power. It is unlikely that an emergency would occur simultaneously when: the water treatment plant was out of service for an extended period; and that there would also be an area wide power outage. But to have a Cadillac Plan we will add this as a requirement and require all wells to be equipped with standby power.

3. Aerate the water in the Canyon Creek Well with the hydrogen sulfide gas in an aeration column to strip out the gas. Add this well back into the system.

4. Subject the contaminants on the well screen in the Nike Well to determine the cause of the fouling. I am assuming this well bore may have encountered some iron rich lava. This well may also be salvageable.

5. Drill 2 additional wells in the Charbonneau District to add a high level of redundancy to the water supply. With piping modifications cited in the present Master Water Plan, all the Charbonneau wells could also support the other wells in meeting system demands.

The City's Draft Plans state about the Charbonneau's District water demands:

"Typical peaking factors for the City of Wilsonville were applied to these values to estimate the system demands reported in Table 1."[3]

[3] Appendix F, page F-1.

Several of the residential homes in the District however, including mine, are provided with river water alleviating a considerable amount of the District's peaking demand.

6. The existing base of Charbonneau District's concrete reservoir is situated over special treated reinforced soils. It is stated in the City's Draft Plans, there is minimal risk of damage to property in the event that an earthquake would create a partial failure.

Information on earthquakes are shown on the Oregon Department of Geology and Mineral Industries Map IMS-4. The largest recorded earthquake had a magnitude of 5.6 in 1993 and is identified as the Scott Mills earthquake. The Charbonneau tank (reservoir) apparently suffered no damage from this largest recorded earthquake.

I am also of the opinion that the existing 12" water transmission line to the District across the Boone Bridge is a most reliable method of receiving and transmitting water to and from the District. My confidence is higher in the State's reinforcement of Boone Bridge capability to withstand future earthquakes, protect lives, maintain this essential main traffic artery then the 16" water line proposed in the Plan.

Photograph in the Draft Plans show the exposed compressive strands in the reservoir walls to be in excellent shape. The risk of keeping this reservoir is very low. I recommend for keeping this reservoir for its remaining life of 50 years or more. This will avoid the cost of $3,327,000 to: remove the tank; restore the site; and pay for a new 16" water line across and under the Willamette River.

7. I would also add to this Cadillac Plan that at least one well to be designed for dual purpose so it could be used as an artificial recharge well. In this capacity the well could be used to replace any water withdrawn during an emergency event with treated river water.

Exercising this option would also improve the flexibility in management of our water resources utilizing the basalt water for meeting peaking demands and replenishment with treated river water. And expansion of this approach of converting more wells as dual purpose could eliminate the need for any more reservoirs forever.

Scenario #3 would cost a fraction of the costs to implement Scenario #1, thereby qualifies for the claim of being a "Cadillac Plan for the cost of Chevrolet."

In summary, implementing all aspects of Scenario #3 would have the following benefits:

- Assurance of always having adequate potable water for all water demands, even with: simultaneously having the worst possible calamity happen in the river or at the water treatment plant plus an area loss of electrical power.

- Water from a source that does not require any treatment other than disinfection.

- Has been stored for up to several 1,000s of years and is potable and palatable.

- From sources secure from surface contamination and terrorist type threats.

As a youth, I was raised in what would be considered exceptionally frugal circumstances and taught to not be wasteful. Extravagance has its when it comes to using your own resources, but not when it comes to using resources of others to satisfy your own whims.

I am not necessarily opposed to making large and significant improvements to water when they can be justified economically and result in an improved water quality. To document this I have attached two of the letters I received from Corvallis. These letters were sent years after I had left my position as Utility Engineer over the Water and Wastwater Divisions. #1 & #2

I commend Councilor Goddard for his astuteness in picking up on the staff's insertion of the requirement that the Councils approval of the Plan would irrevocably fix all the proposed elements of the Plan. This was going to be one of my issues to use in my campaign but will forgo now. However, there is an ample supply of other troubling issues that will be brought forward in the future campaign.

I am willing to host a meeting in my home for any or all of the Council to have a one on one question and answer session. This would be a more informal type of meeting conducted in a similar fashion, as your work sessions are with your staff.


CANADA
PACIFIC OCEAN
WASHINGTON
Columbia River
Basalt Group
MONTANA
IDAHO
OREGON

city of hermiston 180 N.E. 2ND STREET/HERMISTON. OREGON/97838/FAX (503) 567-5530

August 30, 1993

Mr. Stanley G. Wallulis
Wallulis and Associates, Inc.
7725 S.W. Village Greens Circle
Wilsonville, Oregon 97070

Dear Stan:

Since I am contemplating retirement next month, I decided it was timely to recognize the value of your 30 years or more of prior and present professional services to the City of Hermiston.

Your Firm has provided excellent professional services in the: design of the City's production wells (deep and shallow), distribution and transmission lines, treatment facilities, reservoirs, Supervisory Control and Data Acquisition (SCADA) system, servicing of residential developments, water master planning, representing the City before state and federal agencies, and the initiation of the first planned and approved artificial recharge and recovery (ARR) project (injecting of water from shallow wells or surface sources into the deep Columbia River Basalt aquifers for storage).

Few individuals are aware the years of effort that your Firm promoted the concept of ARR by: working with state elected officials, staff of the Water Resources Department, the Water Resources Commission, and serving by appointment of the Governor on the "Umatilla Sub-Basin Citizens Advisory Committee". The leadership and expenses borne by your Firm resulted in the State of Oregon amending their statutes and administrative rules to permit ARR by the injection of water from our shallow well into our deep wells. The "Umatilla Basin Report" published in August of 1988 and subsequent amendments to the Water Department's Administrative Rules attest to the leadership and innovative thought provided by you. Because of your efforts, other engineering firms and cities are now also beginning to plan on incorporating ARR as an important water management tool.

Unfortunately the completion of the City's ARR project will occur some time considerably after my retirement. The multi-agency involvement has certainly delayed the implementation of this project by at least two to three years. Your prior services have been commendable and I wish you the best of luck in the continuing battle with the State and federal agencies involved in this 80% federally funded project.

Your competency, honesty, and engineering talents has been one of the rare business relationships that I have enjoyed over the several years in the implementation of major water system improvements. Please do not hesitate to use this letter as a letter of recommendation to other potential clients. I may be reached at my home phone number 503-567-5405, when not fishing, hunting or in other such worthwhile pursuits.

Best personal regards,

Julian R. Woodward

Julian R. Woodward
Water Superintendent

City of
Grants Pass
"Where The Rogue River Runs"

April 1, 2002

Mr. Stanley Wallulis
Charbonneau District
7725 SW Village Greens Circle
Wilsonville, Oregon 97070

Re: Thank You Friend

Dear Stan:

Your letter of March 11, 2002 is one I will keep in my file for the rest of my career. There are few true gentlemen in our respective professions, and it has been my pleasure to have shared so many hours with you, one of the rare gentlemen.

I have had little interaction with the new utility engineer. My department directors have informed me they believe they have a "winner." Thank you for your concerns, and I assure you that we will continue to find the happiness that management of a City can provide.

Congratulations on your trip to Pendleton. I remember well the hours we spent attempting to complete the recharge issues for Hermiston, and the fun we had with the well construction project for Hermiston Foods. Combining treatment with injection will be a challenge for Pendleton; however, if you are the author of the plan, they will find a way to implement.

You are a good man, one I am proud to call a friend. My very best to you as you take the next steps in your career. My e-mail address at home is peterall@cdsnet.net, and I would really enjoy sharing issues with you. Please feel free to "drop me a line" electronically.

Sincerely,

Bill

William A. Peterson, Jr.
City Manager

CF #02-057

J:\CITY MANAGER\WAP\Corres\wallulis.doc

city of hermiston 295 EAST MAIN STREET / HERMISTON, OREGON/97838

March 28, 1985

TO WHOM IT MAY CONCERN:

Upon being appointed city manager for the City of Hermiston, Oregon, on March 15, 1961, I initially retained the professional services of Stanley Wallulis as the City's consulting engineer.

Over this period of time Mr. Wallulis has been retained by the City to provide engineering services for streets, wastewater and water facilities. The most recently completed project was the development of a 4.6 million gallon/day shallow gravel packed well, storage with treatment by chlorination, monitoring and telemetry and the installation of 16 inch and 18 inch diameter water transmission lines in 1977.

In 1982 Mr. Wallulis was authorized to make a water study for the City which the city council has now adopted. This study identified a specific capital improvement of approximately $10,000,000 in four phases keyed to City growth. The study also addressed itself to the probably ultimate service area and the ultimate water demand. The innovative concept of placing potable water in the underground basaltic rock aquifer in the winter months for withdrawal in the summer months can save the City several million dollars in future years by reducing the size of physical plant and transmission lines.

Throughout our professional relationship, I have found Mr. Wallulis to be trustworthy, responsive to other team members on projects, fair in his business relationships, personable and abreast of the available current technology.

Please contact me for any further information you may desire about our city's relationship with Mr. Wallulis.

Sincerely,

L. T. Harper

L. T. Harper
City Manager

LTH/pat

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

OCT - 9 1992

Reply to
Attn of: WD-139

- Copy - Stan, Dud & I
Bob - FYI
- Please return this copy to me

Ron Golus, Project Manager
U.S. Bureau of Reclamation
Federal Bldg. & U.S. Courthouse
Box 043-550 West Fort St.
Boise, ID 83724

RE: Hermiston Testing Plan for Extended Project Period

Dear Mr. Golus:

I have reviewed the report titled "Testing Plan and Budgets for Extended Periods of Federal Fiscal Years of 1993-94 and 1994-95" for the city of Hermiston, Oregon. The monitoring and sampling schedule described in the document is well thought-out and documented. I believe that the plan, when followed, will produce data which will be very useful in determining water quality impacts from the project. I commend Mr. Wallulis and Mr. Loeb for a job well-done.

Please give me a call if you have any questions (206) 553-1593.

Sincerely,

Martha Sabol

Martha Sabol
Hydrogeologist

cc: Ed Brookshire, Hermiston City Manager
Frank Packard, U.S. Geological Survey

CHARLES R. "CHUCK" NORRIS
UMATILLA COUNTY
DISTRICT 57

REPLY TO ADDRESS INDICATED:
☐ House of Representatives
Salem, Oregon 97310-1347
☐ P.O. 121, 725 E. Highland Ave.
Hermiston, Oregon 97838

567-8638, ofc
567-8652, res

HOUSE OF REPRESENTATIVES
SALEM, OREGON
97310-1347

October 29, 1987

SUBJECT: Recommendation for Appointment to the Drinking Water Advisory Committee
STANLEY G. WALLULIS, P.E., P.E., & P.L.S

TO: Kristine M. Gebbie, Administrator of Health
811 State Office Building - 1400 SW Fifth Ave
Portland, Oregon 97201

Dear Ms. Gebbie:

As both private citizen and legislator I have been heavily involved in matters relating to water for all uses. That has led me to some contact with those responsibile for safe drinking water issues. In the course of those contacts I have reviewed the current membership of the Drinking Water Advisory Committee, a committee under the general direction of your position. In that review I have noted two things which prompt this letter.

1. None of the members is from east of the Cascade Mountains.

2. The term of Harold R. Murray expires in November, 1987, and I assume that a replacement will soon be named by you.

With points 1 and 2 above in mind it is my privilege to strongly recommend that you appoint Stanley G. Wallulis of Pendleton to the committee. Enclosed you will find a copy of Mr. Wallulis' professional resume (furnished at my request). It clearly and emphatically demonstrates his exceptional qualifications to serve the state of Oregon on a committee that will no doubt assume greater importance and levels of activity as time goes on.

In my aforementioned involvement with water issues in the Umatilla Basin (including chairmanship of the Umatilla Basin Groundwater Task Force, May 85-86) I have personally dealt with Stan Wallulis and relied on his professional judgement. As his resume reveals, his participation in and management of water system projects has been wide-ranging both geographically and in technical character. While you may expect him to objectively consider drinking water issues of statewide significance, he is uniquely qualified to represent the concerns and technology prevalent east of the Cascade Crest.

I urge your favorable consideration of this recommendation for appointment of STANLEY G. WALLULIS, professional engineer, to the Drinking Water Advisory Committee. Your attention in this matter is appreciated.

Sincerely,

C.R. "Chuck" Norris

1 encl: Professional resume - Wallulis

City of Corvallis
INCORPORATED JANUARY 1857

CORVALLIS CITY HALL
501 S.W. MADISON AVENUE
POST OFFICE BOX 1083
CORVALLIS, OREGON 97339

UTILITIES DEPARTMENT
(503) 757-6936

January 10, 1983

To Whom it May Concern:

The purpose of this letter is to serve as a statement of services provided to the city of Corvallis by Mr. Stanley Wallulis, P.E. From 1967 through 1970, Mr. Wallulis served as Utilities Engineer for the city of Corvallis. During that period, he initiated the following major water system improvements:

1. Expansion of a surface water filtration plant from 9.7 MGD to 21 MGD;

2. Expansion of a raw water intake;

3. Construction of three water booster stations;

4. Construction of three finished water reservoirs ranging from 125,000 gallons to 5,000,000 gallons;

5. Replacement of approximately 43 miles of water distribution system piping; and

6. Construction of approximately 4 miles of water transmission piping.

All projects have had a substantial long term positive effect on the operation and maintenance cost of the Corvallis water system. As an example, the pipe replacement program reduced the unaccounted water from approximately 45% to 4%. This has resulted in lower annual operating costs and deferred an additional water treatment plant expansion for 11 years.

I have found that all the work conducted by Mr. Wallulis to be based upon sound engineering principals and that opportunities for innovative ideas were investigated and utilized where justified.

If you need any additional information, please contact me.

Floyd W. Collins
Utilities Director

/jj

cc: Treatment Coordinator Brough

City of Corvallis
INCORPORATED JANUARY 1857

CORVALLIS CITY HALL
501 S.W. MADISON AVENUE
CORVALLIS, OREGON 97330

PUBLIC WORKS DEPARTMENT

(503)
757-6936

December 28, 1977

TO WHOM IT MAY CONCERN

Stan Wallulis was the Utilities Engineer for the City of Corvallis from November 6, 1967, to July 31, 1970. After his resignation, I was selected to succeed him and have filled that position for seven years.

I have had full opportunity to observe his accomplishments while holding this position. He structured the Utilities Division into an efficient organization and the changes I have since made are strictly those dictated by growth and changing conditions. He had analyzed the deficiencies within the system and left behind explicit and viable plans for their correction. He initiated major capitol projects to improve the water service and provide for future growth. He implemented new water rates to put the system on a sound financial basis.

Although I have only met Mr. Wallulis twice, it is apparent that he understands utility system operations and financing.

I have often remarked that the greatest frustrations of my 26 years of utility management have been to operate facilities designed by professional engineers who have had no direct operational or management experience. I feel that Mr. Wallulis is a gratifying exception to this standard frustration.

CORVALLIS UTILITIES DIVISION

Alton R Andrews

Alton R. Andrews
Utilities Engineer

ARA:mm

Community Services Department

August 21, 2012 Report

Active Lifestyles
Social Opportunities
Healthy Community

Summer Camp Wrap Up

Parks and Recreation summer camps wrapped up in August with a wide variety of camp offerings. Wilsonville youth had the opportunity to take advantage of programs ranging from Art and Action Camp to Lego Enginering to sport camps.

Art and Action participants completed two art projects each day and had two different sessions of "action" (field games, parachute play, and other games/activities). The camp is offered through a unique partnership between Wilsonville Parks and Rec and Grace Chapel Church. Volunteers from Grace Chapel provide leadership for the camp under the direction of the City's Recreation Coordinator, Brian Stevenson. Over 30 volunteers ensured participants were safe and had fun throughout the week. In addition to providing volunteers, members of the church congregation donate 95% of the supplies and equipment need to make the camp a success.

Registration numbers for camps July 27 - August 24:

Art and Action Summer Camp: 67
Lego Engineering Camp: 16
Skyhawks 5 - 7 yr old Soccer Camp: 11
Skyhawks 7 - 12 yr old Soccer Camp: 21
Skyhawks Tennis Camp: 20
Skyhawks Baseball Camp: 24
Skyhawks Mini Hawk Multi Sport Camp: 20

Program & Event Update

Movies in the Park

July 27th and August 3rd saw large crowds descending on the Memorial Park River Shelter for Movies in the Park. The 7/27 showing of Dolphin Tale had approximately 450 in attendance and the 8/3 showing of The Muppets had approximately 500.

Trolley Tours

A total of 86 riders enjoyed a scenic tour of Wilsonville on three trolley tours. This popular summer tradition is made possible by an ongoing partnership between SMART Transit and Community Services. The Trolley takes individuals of all ages on a ride past historical and artistic points of interest around the City. Each participant brings a toothbrush to donate to Wilsonville Community Sharing.

Community Services Department

County Commissioner Delivers Meals

On Monday, August 3rd, Clackamas County Commissioner Jamie Damon rode along with volunteer driver Shirley Ontiveros to deliver meals to home bound seniors. In all, 21 Home Delivered Meal volunteers drive routes each month to provide hot meals for those in need. Additionally, 20 different volunteer groups serve the senior nutrition program at the Community Center four days a week, allowing staff to focus on preparing hot nutritious meals for the seniors.

"I'm proud that the County is supporting these senior nutrition programs. Offering seniors one good meal a day helps them remain independent and stay in their homes." - Jamie Damon

Volunteer Recognition Event

Community Services, with help from the Library, hosted the City's annual volunteer recognition event in Town Center Park on August 9th. This year's event was held for the first time in conjunction with the Rotary Summer concerts. The Heart of the City Award was given to Donna Bane, who has been a vital member of the Library Foundation, The Friends of the Wilsonville Center, The Kiwanis, and the ACHIEVE Healthy Communities Coalition.

Upcoming Events

Fall Program Registration

On Tuesday, September 4th, registration will open for Fall programs & classes. A number of new programs have been added for the Fall session including: "Horse Play", pottery and clay work, and a mom and me color exploration class for youth, as well as, "Drawing for Everyone" for the Adult 55+ age group.

Community Center Remodel

The Community Center will be undergoing some upgrades to the kitchen and one multipurpose room, starting 9/14 and lasting two months. During the fall session a number of programs and classes will be relocated to Clackamas Community College- Wilsonville Campus.

SMART Transit will be offering Dial-a-Ride transportation to the Community College during the construction.

COMMUNITY DEVELOPMENT MONTHLY REPORT

August, 2012

PLANNING ACTIVITY

- **Planning Commission:**

  At their August 8th meeting, the Planning Commission was introduced to the new Community Development Director, Nancy Kraushaar, and the new Long Range Planning Manager, Katie Mangle. The Commission held a work session on the draft policy framework for the Transportation System Plan (TSP)update and provided the project team with feedback on some specific policies as well as the overall approach. The policies are largely based on the City's existing adopted policies on how to build, manage, and implement improvements to the transportation system. The commission supported staff's proposal to hold a "virtual open house" on the TSP in late fall. The next Planning Commission meeting will be September 12th.

- **Basalt Creek Transportation Planning:**

  In work session on September 6th, the City Council will receive a complete project update by Washington County's consultant team JLA and DKS Associates. The Planning Commission will receive a similar presentation on September 12th. The last planned Policy Advisory Group (PAG) meeting is scheduled for September 13th at Wilsonville City Hall. For more information or to review the draft Refinement Plan, please go to:
  http://www.basaltcreek.com/Transportation_Refinement_Plan.html

- **Transportation System Plan Update**:

  The project team continues to work on the preferred solutions package and the financially constrained project list. Also being developed is a virtual open house that will solicit public input regarding the proposed preferred and financially constrained system solutions. For more information on the TSP update, please visit the City's web site at:
  www.ci.wilsonville.or.us/Index.aspx?page=949

CAPITAL PROJECT UPDATE

- WWTP DBO (2082): Aeration Basin #3 backfill underway; leak test the week of August 20 underground piping at 65%; Changes being made to odor control system based on recent complaints. On schedule, on budget.
- SMART Admin/Fleet: Roof and building sheathing underway; wash facility is framed and painted.

- 95th/Boones Ferry Road (4041): Contractor has installed most of the curb and is preparing to install asphalt road on Boones Ferry and concrete road on 95th.
- I-5/Wilsonville Road (4002): Sidewalk installed on north side of underpass; handrail and custom panels to be installed late August. Sidewalk and handrail on south side to be installed in September. Tile work completed on the south side and is proceeding on the north side of the road.
- Boeckman Road Reconstruction (4177): K&E Excavating Inc. was the low bidder and is scheduled to begin demolition work in early September.
- Boeckman Road Bike/Ped (4702): Substantial completion of the sidewalk improvements is expected in early September.
- Safe Routes to School (4147): City has hired contractors to install temporary sidewalks, flashing school zone signage, and rebuild ADA ramps and crosswalks at Camelot & Yosemite; City PW crews will be installing additional street signs.
- Final Draft of Water System Master Plan (1082): It is complete. First reading of adoption ordinance scheduled for August 20th.
- Segment 3b 48" Water Line Final Design at 50%. On schedule, on budget.
- Barber Street Bridge (4116): Final design is underway. BPA line raise will occur the week of August 27.

PRIVATE DEVELOPMENT UPDATE

- SSI Shredding Systems: The DRB approved plans for a 74,444 sq. ft. building expansion, parking and site improvements on Freeman Court.
- Wilsonville Road Business Park: Staff is reviewing a request to modify a City Council condition to allow more retail commercial and office uses.
- Villebois South PDP-Polygon NW: PW construction permit has been issued for this 27-lot subdivision on the west side of Villebois.
- Villebois North PDP 1 Phase 1 – Polygon NW: PW construction permit has been issued for this 82-lot subdivision on the west side of Villebois; development includes a 4-acre regional park.
- Grahams Ferry Road: Construction has been slowed waiting for undergrounding of overhead utility lines. Utility companies are planning on completing their work in September. Contractor will then proceed with completing street work.
- Copper Creek Subdivision: A PW permit has been issued to construct a 21-lot subdivision on the east side of Canyon Creek Road North, across from the Xerox campus.

BUILDING ACTIVITY

- Developments under construction are:
    - The Bell Tower (Building G, Old Town Square) - residential
    - Villebois homes by Arbor, Polygon, Legend and Lennar

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BUILDING ACTIVITY

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    - The Bell Tower (Building G, Old Town Square) - residential
    - Villebois homes by Arbor, Polygon, Legend and Lennar

. Cross Creek Subdivision by Stonebridge Homes

· Oregon Institute of Technology

· New Fleet Building

· Boone Building (Boones Ferry Road) - Tenant Improvements

· Wilsonville Business Center at Wilsonville Road/Kinsman Road - Tenant Improvements

· Jory Trail at the Grove, Phase 1, apartments (formerly Brenchley Estates)

· Lowrie Elementary School

· Mentor Graphics Data Center

. Brenchly Estates Phase II

. Polygon Phase 5 South

. Old Town Square (Lynne Angel Bldg.) Tenant Improvements

NATURAL RESOURCES

- GOAT Day held August 23 at Memorial Park educating the Community about how goats are used to control invasive plant species and restore native habitat.
- Working through permit issues for Morey's Landing and Rivergreen HOA's.

ECONOMIC DEVELOPMENT

- The strategy was presented to the Council and the Planning Commission in a Joint Work Session on August 6th. Positive support was received to forward the study to the City Commission for adoption at their August 20th regular meeting.

Wilsonville Planning Division
2012 Second Quarter Report
April through June

City Council Activities
April through June 2012

Permit Number	Permit Description	Applicant	Meeting Date(s) / Actions
Meetings	**Economic Development Strategy Advisory Committee & Focus Group** Includes members of City Council and Planning Commission		April 11 April 19 May 17 June 14 June 28
Work Sessions	• **French Prairie Bridge** • **Transportation Systems Plan** – Proposed project policies and evaluation criteria • **Brenchley Estates Zone Map Amendment**	NEAMTZU EDMONDS	April 16
DB12-0012	**BRENCHLEY ESTATES NORTH** Quasijudicial-Zone Map Amendment DB12-0013 – Revised Stage I Preliminary Plan DB12-0014 – Class 3 Waiver DB12-0015 – Stage II Final Plan – Lot 1 DB12-0016 – Class 3 Site Design Review – Lot 1 DB12-0017 - Type C Tree Removal Plan DB12-0018 - Tentative Subdivision Plat 28375 SW PARKWAY AVE	BRENCHLEY ESTATES PARTNERS PHASE II Rep: Jerry Offer, OTAK	Public Hearings April 16 May 7 **Ord. No. 703 adopted**
Joint meeting with Planning Commission	**Transportation System Update - TSP Solutions**	NEAMTZU	May 7
Summit	**Economic Development Summit**		May 31
LP12-0001	**Sign Code Revisions**	PAULY	Work Session: May 21, 2012 Public Hearings: June 4 June 18 **Ord. No 704 Adopted**
Resolution	**Updated Fee Schedule for Sign-Related Planning Review Fees**	PAULY	Public Hearing: June 18 **Resolution No. 2369 adopted**

Wilsonville Planning Division
2012 Second Quarter Report
April through June

Planning Commission Activities
April through June 2012

Permit Number	Permit Description	Applicant/Staff	Meeting Date(s) / Actions
LP12-0001	**Sign Code Revisions**	PAULY	Public Hearing: April 11 **Recommendation to City Council**
Meetings	**Economic Development Strategy Advisory Committee & Focus Group** Includes members of City Council and Planning Commission		April 11 April 19 May 17 June 14 June 28
Open House & Work Session	**Water System Master Plan**	MENDE	May 9 Public Hearing scheduled for July 11
Joint meeting with City Council **Open House**	**Transportation System Update** • TSP Solutions • Revised Transportation Policies and the Preferred and Financially-Constrained Transportation Solutions packages.	NEAMTZU	May 7 May 22
Summit	**Economic Development Summit**		May 31

Committee for Citizen Involvement Activities
April through June 2012

Discussion Topics	Staff	Meeting Date(s) / Actions
Direction from Council on CCI Priorities	NEAMTZU	April 11
• **Conversation with Bryan Cosgrove regarding role of CCI** • **Wilsonville Sunday Streets**	COSGROVE NEAMTZU	June 13

Wilsonville Planning Division
2012 Second Quarter Report
April through June

Development Review Board Panel A Activities
April through June 2012

Permit Number	Permit Description	Applicant	Hearing Date(s) / Actions
DB12-0020	**FRED MEYER PROJECT – BUILDING J** Class 3 Master Sign Plan Modification of Master Sign Plan 30100 SW BOONES FERRY RD	AINOR SIGN INC.	April 9 **Approved**
DB12-0021	**BRENCHLEY ESTATES N./JORY TRAIL AT THE GROVE** Class 3 Master Sign Plan 28855 SW PARKWAY AVE	HOLLAND GROUP PARTNERS LP ASH	May 14 **Approved**

Development Review Board Panel B Activities
April through June 2012

Permit Number	Permit Description	Applicant	Hearing Date(s) / Actions
DB12-0004	**COPPER CREEK SUBDIVISION - CANYON CREEK RD** Class 3 Planned Development Stage 1Preliminary Plan - Modification to prior approval **DB12-0005** - Class 3 Planned Development Stage 2, Final Plan **DB12-0006** - Class 3 Waiver **DB12-0007** - Class 3 Tentative Subdivision Plat Review **DB12-0008** - Class 3 Site Design Review **DB12-0009** - Class 3, Type C, Tree Removal Plan **DB12-0019** - Class 3 Signs - not MSP 27490 SW CANYON CREEK RD	SPECTRUM DEVELOPMENT LLC	April 23 **Approved**
DB12-0022	**VAN GORDON DENTISTRY** Class 3 Signs - not MSP Single Tenant Signage 30045 SW PARKWAY AVE	INTEGRITY SIGNS OREGON	June 25 **Approved**

Pending City Council Activities
Planning Projects Scheduled for Hearings / Work Sessions after June 30, 2012

Permit Number	Permit Description	Applicant	Hearing Date(s) / Actions
LP12-0002	**Water System Master Plan update**	Mende	August 20
DB12-0033	**FOX CENTER TOWNHOMES** Quasijudicial-Comp Plan Map Amendment: **DB12-0034** - Quasijudicial-Zone Map Amendment - Zone Change from Commercial to Residential **DB12-0035** - Class 3 Planned Development Stage 1 **DB12-0036** - Class 3 Planned Development Stage 2 **DB12-0039** - Class 3 Waiver Proposal for a 16-unit residential plan 30625 SW WILLAMETTE WAY E	WESTLAKE CONSULTANTS INC	September 17

Pending Planning Commission/CCI Activities
Planning Projects Scheduled for Hearings / Work Sessions after June 30, 2012

Permit Number	Permit Description	Applicant	Hearing Date(s) / Actions
2012 Work Program	• Water System Master Plan • TSP Update • Economic Development Strategy (Joint meeting with City Council scheduled for Aug 6) • Basalt Creek Transportation Planning • Basalt Creek Concept Planning • Old Town Code Amendments • Goal 10 Housing Plan	NEAMTZU MANGLE	July - December

Pending Development Review Board Activities
Planning Projects Scheduled for Hearings / Work Sessions after June 30, 2012

Permit Number	Permit Description	Applicant	Hearing Date(s) / Actions
DB12-0025	**MEMORIAL PARK/3-BAY FACILITY** Class 3 Temporary Use Permit-DRB Review 5-year Temporary Use Permit for Mobile Office Unit **TR12-0050** – Type B Tree Permit 7934 SW MEMORIAL DR	CITY OF WILSONVILLE	July 9 (Approved for 2 years)
DB12-0032	**RAM BREWHOUSE** Class 3 Master Sign Plan Amendment to existing Master Sign Plan 29800 SW BOONES FERRY RD	CULBERTSON SIGNS	July 23 (Approved)
DB12-0026	**SHREDDING SYSTEMS** Class 3 Planned Development Stage 1 **DB12-0027** - Class 3 Planned Development Stage 2 **DB12-0028** - Class 3 Site Design Review **DB12-0029** - Class 3 Tentative Plat Review **DB12-0030** - Class 3 Tree Removal Plan **DB12-0031** - Class 3 Master Sign Plan **DB12-0037** - Class 3 Waiver 9760 SW FREEMAN DR	OUR ASSOCIATES Jerry Dettwiler Architect: MILDREN DESIGN GROUP	August 13
DB12-0033	**FOX CENTER TOWNHOMES** Quasijudicial-Comp Plan Map Amendment: **DB12-0034** - Quasijudicial-Zone Map Amendment - Zone Change from Commercial to Residential **DB12-0035** - Class 3 Planned Development Stage 1 **DB12-0036** - Class 3 Planned Development Stage 2 **DB12-0039** - Class 3 Waiver Proposal for a 16-unit residential plan 30625 SW WILLAMETTE WAY E	WESTLAKE CONSULTANTS INC	August 13
DB12-0023	**NORTH WILSONVILLE 76 STATION** Class 3 Planned Development Stage 2 Modification **DB12-0024** - Class 3 Site Design Review 8605 SW ELLIGSEN RD	AJK, INC.	pending

Scheduled Pre-Application Meetings
April through June 2012

Number	Description
PA12-0006	Villebois Preliminary Development Plan for Phase 3 East & associated applications
PA12-0007	Charter School

Administrative Reviews
April through June 2012

Permit Number	Permit Description	Applicant	Hearing Date(s) / Actions
AR11-0072	**VILLEBOIS PDP-6 SOUTH - POLYGON NW COMPANY** Planning Class I Review Parks Plan Review	POLYGON NORTHWEST/PAYMASTER	Pending
AR12-0001	**ACE HARDWARE** Planning Class II Review Propane Tank 29029 SW TOWN CENTER LOOP E	WILSONVILLE HARDWARE	Issued
AR12-0009	**WILSONVILLE/WENTWORTH CHEVROLET** Planning Class II Review Wentworth Chevrolet - Proposal to modify portions of existing facade, including construction of a new entry element & signage (building mounted). 26051 SW BOONES FERRY RD	WILSONVILLE CHEVROLET	Issued
AR12-0013	**WILSONVILLE LANES** Planning Class II Review ADDITION OF PATIO 29040 SW TOWN CENTER LOOP E	DAVID MCGILL CONSTRUCTION	Issued
AR12-0014	**RITE AID DISTRIBUTION SITE** Planning Class I Review Temporary Use Permit for Annual Plant Sale/Fundraiser for Children's Miracle Network. (signs and booths) 04/27 to 04/28. 29555 SW BOONES FERRY RD	RITE AID	Issued
AR12-0015	**CAMPING WORLD** Planning Class I Review Temporary Use Permit - Annual Satellite Days Event. 4/25 - 4/30 26875 SW BOONES FERRY RD	CAMPING WORLD	Issued
AR12-0016	**NAPA** Planning Class I Review Tent Sale: Set up 5/15/2012, Event 5/16/2012 29025 SW TOWN CENTER LOOP W	TWGW, INC. NAPA AUTO PARTS	Issued
AR12-0017	**LAZERQUICK** Planning Class I Review Request to repaint exterior. 29900 SW KINSMAN RD	CIDA INC	Issued
AR12-0018	**CAMPING WORLD** Planning Class II Review Install 1000 gallon propane dispenser 26875 SW BOONES FERRY RD	CAMPING WORLD	Issued

Administrative Reviews
April through June 2012

Permit Number	Permit Description	Applicant	Hearing Date(s) / Actions
AR12-0019	**WILSONVILLE ROAD BUSINESS PARK** Planning Class I Review Minor changes to approved landscape plans to reflect as-built. 9900 SW WILSONVILLE RD	MILDREN DESIGN GROUP	Issued
AR12-0020	**WESTERN FIREWORKS** Planning Class I Review Fireworks Stand in Albertson's Parking Lot June 24-July 8 30299 SW BOONES FERRY RD	WESTERN FIREWORKS	Issued
AR12-0021	**VILLEBOIS SAP EAST** Planning Class II Review Planning Director's Interpretation	PACIFIC COMMUNITY DESIGN	Issued
AR12-0022	**WILSONVILLE HEIGHT APARTMENTS** Planning Class I Review Class I for Sign Change 30125 SW BROWN RD	BRAD CHASE	Issued
AR12-0023	**TONQUIN WOODS AT VILLEBOIS/VILLEBOIS SAP 5S** Planning Class I Review Issued Subdivision Plat Review	POLYGON NORTHWEST/PAYMASTER	Pending
AR12-0024	**CHAD WARD - KINSMAN RD** Planning Class II Review Chad Ward - Extension Request for Case Files DB06-0064 et seq. 29900 SW KINSMAN RD	VAN BILSEN INVESTMENTS LLC	Issued
AR12-0025	**WILSONVILLE LANES** Planning Class I Review Tree Removal 29040 SW TOWN CENTER LOOP E	WILSONVILLE LANES	Issued
AR12-0026	**TONQUIN WOODS NO. 2/VILLEBOIS SAP 1N** Planning Class I Review Issued Plat Review	POLYGON NORTHWEST/PAYMASTER	Pending
AR12-0027	**BRENCHLEY ESTATES/JORY TRAIL AT THE GROVE** Planning Class I Review MODIFICATION TO DB11-0029	HOLLAND GROUP PARTNERS LP ASH	Issued
AR12-0028	**BRENCHLEY ESTATES/JORY TRAIL AT THE GROVE** Planning Class I Review Landscape revision 28035 SW PARKWAY AVE	HOLLAND GROUP PARTNERS LP ASH	Issued
AR12-0029	**BRENCHLEY ESTATES NORTH** Planning Class I Review Zoning Letter Request. 28155 SW PUEBLO TER	HOLLAND PARTNERS BRENCHLEY ESTATES PARTNERS LP	Pending

Sign Reviews
April through June 2012

Permit Number	Permit Description	Applicant	Hearing Date(s) / Actions
SR12-0029	**MATTRESS DISCOUNTERS** Planning Class 1 Sign Review 8639 SW MAIN ST	INTEGRITY SIGNS OREGON	Issued
SR12-0030	**AAA** Planning Class 1 Sign Review 30020 SW BOONES FERRY RD	SECURITY SIGNS INC	Issued
SR12-0031	**NEW LIFE CHURCH/VICTORY ACADEMY** Planning Class 1 Sign Review Monument Sign 27960 SW CANYON CREEK RD N	MEYER SIGN COMPANY OF OREGON	Issued
SR12-0032	**FRED MEYER PROJECT/SLEEP COUNTRY USA** Planning Class 1 Sign Review USA Tenant Signs: See also Case File DB12-0020 30100 SW BOONES FERRY RD	INTEGRITY SIGNS OREGON	Issued
SR12-0033	**LA FITNESS** Planning Class 1 Sign Review Copy change and moving sign location 30050 SW TOWN CENTER LOOP W	RUDNICK ELECTRIC	Issued
SR12-0034	**GUEST HOUSE INN AND SUITES** Planning Class 1 Sign Review Temporary Banner. Expires 6/8 8855 SW CITIZENS DR	KYUNG HAN	Issued
SR12-0035	**ILLAHEE APARTMENTS** Planning Class 1 Sign Review Replacement Sign 8755 SW ILLAHEE CT	FAOF ILLAHEE LLC	Issued
SR12-0037	**BRENCHLEY ESTATES/JORY TRAIL AT THE GROVE** Planning Class 1 Sign Review Monument signs 28855 SW PARKWAY AVE	HOLLAND GROUP PARTNERS LP ASH	Issued
SR12-0038	**BOONE BUILDING** Planning Class 1 Sign Review Monument Sign 30485 SW BOONES FERRY RD	PROFESSIONAL SIGN& GRAPHICS	Issued

Tree Reviews
April through June 2012

Permit Number	Permit Description	Applicant	Hearing Date(s) / Actions
TR10-0083	**HYDRO-TEMP MECHANICAL** Type C Class 1 Tree Removal Permit Remove 8 trees. 28465 SW BOBERG RD	HYDRO-TEMP MECHANICAL, INC	Issued
TR11-0020	Type B Class II Tree Removal Permit Five (5) Trees 8840 SW HOLLY LN	BUGGSI HOSPITALITY GROUP LLC	Incomplete Closed File
TR11-0057	Type A Class 1 Tree Removal Permit 2 maples, 46" diameter. 7598 SW VLAHOS DR	DONNA CHAN	Issued
TR11-0077	**BRENCHLEY ESTATES** Type C or Type D Class 1 Tree Removal Permit Remove 70 trees approved as part of Type 'C' Tree Removal Plan (DB11-0033).	RECAP/HOLLAND BRENCHLEY ESTATE	Partially Issued ½ of trees remaining
TR12-0012	Type B Class II Tree Removal Permit Removal of 16 trees 10475 SW WILSONVILLE RD	CITY WIDE TREE SERVICE	Pending
TR12-0014	**PEGASUS BUILDING** Type A Class 1 Tree Removal Permit Remove three (3) birch trees. 30250 SW PARKWAY AVE	FINANCIAL PROTECTION AND INSUR	Issued
TR12-0016	**I-5 CORPORATE: JACK MARTIN PROPERTY** Type B Class II Tree Removal Permit Removal of One (1) Oregon White Oak 27300 SW PARKWAY AVE	WILSONVILLE 2006 SE LLC	Withdrawn
TR12-0024	Type A Class 1 Tree Removal Permit For one tree damaged in snow storm. 10660 SW WILSONVILLE RD	OAKLEAF PARK	Pending
TR12-0025	**ENGELMAN PARK** Type C Class I Tree Removal Permit 10245 SW WILSONVILLE RD	CITY OF WILSONVILLE	Issued
TR12-0026	Type A Class 1 Tree Removal Permit 2 Trees 7815 SW RACQUET CT	MILLS HOWELL S & MARLENE S	Issued
TR12-0027	Type A Class 1 Tree Removal Permit 3 Trees 29995 SW BROWN RD	APETROAEI VIOREL VASI	Issued
TR12-0028	**RENAISSANCE AT CANYON CREEK** Type A Class 1 Tree Removal Permit Remove three decorative evegreen trees 28391 SW MORNINGSIDE AVE	RIC HENDERSON	Issued
TR12-0029	Type A Class 1 Tree Removal Permit 1 Tree 7503 SW ROANOKE DR	LAMA MICHAEL O & PATRICIA A	Issued
TR12-0030	Type A Class 1 Tree Removal Permit 2 Trees 8655 SW MIAMI	GIESE DOUGLAS E & LAURA E	Issued
TR12-0031	**PARK AT MERRYFIELD PLAY AREA** Type A Class 1 Tree Removal Permit Removal of dying Oregon Ash.	CITY OF WILSONVILLE	Issued

Tree Reviews
April through June 2012

Permit Number	Permit Description	Applicant	Hearing Date(s) / Actions
TR12-0032	Type B Class II Tree Removal Permit Removal of Flowering Plumb street tree. Mitigation to be payment into the City's Tree Fund. 29660 SW YOSEMITE WAY	LEMAN MICHAEL & LISA	Issued
TR12-0033	Type A Class 1 Tree Removal Permit Emergency Removal of tree in Willemtte River Greenway 31394 SW OLYMPIC DR	CARUSO SAMUEL J A	Issued
TR12-0034	**HATHAWAY COURT APARTMENTS** Type B Class II Tree Removal Permit Removal of 12 trees from the complex 29501 SW MEADOWS LOOP	MR. TREE, INC.	Issued
TR12-0035	Type A Class 1 Tree Removal Permit 2 Trees 29660 SW TOWN CENTER LOOP W	NILI SHAWN S & DORNA	Issued
TR12-0036	Type A Class 1 Tree Removal Permit Remove one (1) Doug Fir and one (1) Alder. 28130 SW CANYON CREEK RD S	FALCONER ANNIE F & MICHAEL	Issued
TR12-0037	Type A Class 1 Tree Removal Permit 3 Trees-Incense Cedar 10668 SW EDGEWOOD CT	BERRY LESLEY R	Issued
TR12-0038	Type A Class 1 Tree Removal Permit One (1) Evergreen Tree north side of driveway 28012 SW FLYNN ST	LAM RONALD & HISAKO	Issued
TR12-0039	**CANYON CREEK MEADOWS SUBDIVISION** Type A Class 1 Tree Removal Permit Red Maple 7567 SW LOWRIE LN	DODGION LARRY H	Issued
TR12-0040	Type B Class II Tree Removal Permit 30125 SW BROWN RD	BRAD CHASE	Issued
TR12-0041	Type A Class 1 Tree Removal Permit One tree-to be replaced with same variety 31542 SW ORCHARD DR	MOOMAW ANITA S & KEITH S	Issued
TR12-0042	Type A Class 1 Tree Removal Permit One tree 7720 SW WIMBLEDON CIR N	BRUCK EARL R TRUSTEE	Issued
TR12-0043	Type A Class 1 Tree Removal Permit One thundercloud flowering plum street-tree. No requirement for replacement because of two other existing trees 29515 SW TETON WAY	REDDEMANN EUGENE E TRUSTEE	Issued
TR12-0044	Type A Class 1 Tree Removal Permit 2 Plum trees 30125 SW BROWN RD	LTJM LLC	Issued
TR12-0045	Type A Class 1 Tree Removal Permit Two flowering cherry trees-too close to the building 8565 SW SALISH LN	ORLA MEMBER SERVICES	Issued
TR12-0046	**BRENCHLEY ESTATES – NORTH** Type C Class 1 Tree Removal Permit 28255 SW PARKWAY AVE	HOLLAND PARTNERS BRENCHLEY ESTATES PARTNERS LP	Issued

Tree Reviews
April through June 2012

Permit Number	Permit Description	Applicant	Hearing Date(s) / Actions
TR12-0047	Type A Class 1 Tree Removal Permit One pine tree 7058 SW HOLLYBROOK CT	WEAVER ROBERT J & FRANCES B	Issued
TR12-0048	Type B Class II Tree Removal Permit 3 Trees	POLYGON NORTHWEST/PAYMASTER	issued
TR12-0049	**WILSONVILLE MEADOWS** Type A Class 1 Tree Removal Permit Two (2) red maple street trees. Replacement required within 12 months. 28480 SW MEADOWS LOOP	REILLY THOMAS J & STEPHANIE G	Issued
TR12-0050	**MEMORIAL PARK/ 3 BAY FACILITY** Type B Class II Tree Removal Permit 7934 SW MEMORIAL DR	CITY OF WILSONVILLE	Issued
TR12-0051	Type A Class 1 Tree Removal Permit One Sweet Gum tree 28450 SW WILLOW CREEK DR	KELSO DAVID T	Issued
TR12-0052	Type A Class 1 Tree Removal Permit 3 Trees 28094 SW WILLOW CREEK DR	LAMM, DEAN & BEVERLY	Issued
TR12-0053	Type B Class II Tree Removal Permit 9 Trees 6912 SW GLENWOOD CT	RUPP CHRISTOPHER V & MIKELLE L	Issued
TR12-0054	Type A Class 1 Tree Removal Permit 2 Maple Trees 11259 SW CHANTILLY	THOMPSON MICHAEL K & NANCIE L	Issued
TR12-0055	Type A Class 1 Tree Removal Permit One dead tree 28695 SW CRESTWOOD DR	GREEN OPTIONS TREE CARE	Issued
TR12-0056	Type A Class 1 Tree Removal Permit 1 tree 30999 SW BOONES FERRY RD	DEMPSEY ROBERT A & MICHELE S	Issued
TR12-0057	Type A Class 1 Tree Removal Permit One Fir tree 10862 SW PARKWOOD LN	CROUCH KELLY & JANET	Issued
TR12-0058	**WILSONVILLE MEADOWS** Type B Class II Tree Removal Permit Removal of Raywood Ash Street Tree 7425 SW GLENWOOD DR	MOODY BRUCE A & JULIE A	Issued
TR12-0059	Type A Class 1 Tree Removal Permit 29102 SW COURTSIDE DR	SMITH LINDA ANN	Issued
TR12-0061	Type A Class 1 Tree Removal Permit Remove one (1) tree, 7682 SW WIMBLEDON CIR N	STEVEN GALLUP	Issued
TR12-0062	Type A Class 1 Tree Removal Permit Remove two (2) trees. 28497 SW MEADOWS LOOP	STEVEN PLASS	Issued

Code Enforcement
April through June 2012

Permit Number	Code Enforcement Description	Action
CE11-0043	Code Enforcement for shed that does not meet setbacks.	Resolved
CE12-0003	Adjacent properties dumping yard debris & other junk on City of Wilsonville property.	Resolved
CE12-0004	Open storage of junk.	Resolved
CE12-0005	Inoperable vehicle in driveway & illegal storage of dryer/junk. RESOLVED 3/21/12.	Resolved
CE12-0006	Open storage of junk posted 3/12/12. Owner will have it cleaned up by 3/26/12 RESOLVED 3/26/12.	Resolved
CE12-0007	Shed does not meet setbacks. Issue will be resolved by 5/19/12.	Resolved
CE12-0008	Travel trailer encroaching into sidewalk. Resolved 5/3/2012	Resolved
CE12-0009	Trailer parked in street-hooked up to utilities	Resolved
CE12-0010	Overgrown yard-vacant home	Resolved
CE12-0011	Motorhome being used as residence-owner denies being used as a residence. Continuing to monitor 5/23/12	Resolved
CE12-0012	Junk, noxious vegetation and sanitation (rats & possum) Agreement to have it cleaned up 6/30	Resolved
CE12-0013	Rooster on property-violation of noise ordinance	Resolved
CE12-0014	Rooster reported on property	Resolved
CE12-0015	Creating a hazard with over-grown bushes along right-of-way	Resolved
CE12-0016	Illegal banners and balloons	Resolved
CE12-0017	Dead trees causing a hazard	Pending
CE12-0018	Tall Grass-open storage of junk	Resolved

Planning Staff Activities, Projects and Meetings
April through June 2012

Recurring Activities

Archiving/Purging of Planning Records	Metro meetings
Basalt Creek Planning	Villebois Meetings
Budget meetings	Parks Team Meetings
Community Service Team meetings	Posting of Public Notices on project sites
Conservation and Efficiency meetings	Pre-Construction meetings
Counter – Customer Service	Project Site Visits/inspections
Conditions of Approval Tracking	Transportation Systems Plan Update
Development Coordination Meetings	Updating Planning's web pages
Eden Permit Tracking	Washington County Planning Directors meetings
French Prairie Bicycle/Pedestrian/Emergency Bridge	

Welcome to new Manager of Long-Range Planning, Katie Mangle.

City of Wilsonville
City Council Meeting
September 6, 2012 Sign In Sheet

Name	Mailing Address
Vern Wise	
Stanley Wellnlw	7725 SW Village Greens Circle
Jim Fitch	
Daniel Gonzalez	SMART Transit

City of Wilsonville
September 6, 2012 City Council Meeting

Citizen's Input

SPEAKER CARD

- 3 children @ Lowrie
- Loves "Safe Routes"
- Concerned w/ Adult "safety issues" at roundabout
- will talk to Steve/engineering

NAME: Jim Fitch

ADDRESS: 29395 SW Camelot St

TELEPHONE: 503-570-4395 **E-MAIL** jim-fitch6mentor.com

AGENDA ITEM YOU WANT TO ADDRESS: Lowrie Primary pedestrian routes

Please limit your comments to 3 minutes. Thank you.

#1707

City of Wilsonville
September 6, 2012 City Council Meeting

SPEAKER CARD

NAME: Stanley Wallulis

ADDRESS: 7725 SW Village Greens Circle

TELEPHONE: 503-694-1309 **E-MAIL** swallulis@gmail.com

AGENDA ITEM YOU WANT TO ADDRESS: Proposed Water Improvements

Please limit your comments to 3 minutes. Thank you.

City of Wilsonville

September 6, 2012 City Council Meeting
Action Minutes

DATE: SEPTEMBER 6, 2012

LOCATION: 29799 SW TOWN CENTER LOOP EAST, WILSONVILLE, OR

TIME START:7:10 P.M. **TIME END: 8:35 P.M. REMARKS:** _____

ATTENDANCE LOG

COUNCILORS	STAFF	STAFF
Mayor Knapp	Brian Cosgrove	Steve Adams
Council President Núñez	Mike Kohlhoff	Joanne Ossanna
Councilor Goddard	Jeanna Troha	Steve Munsterman
Councilor Starr	Sandy King	Nancy Kraushaar
	Barbara Jacobson	Steve Allen
	Andrea Villagrana	Eric Mende
	Stephan Lashbrook	

AGENDA	ACTIONS
WORK SESSION	
1. Basalt Creek Transportation Update	The project team presented the final draft of the executive summary and technical evaluation to Council.
2. SMART Fare Increase	Information about the proposed transit fare increase was presented in preparation for the public hearing scheduled September 17, 2012.
3. Schedule joint meeting/work session with the Planning Commission	Calendar a work session (preferably with no scheduled business) for a joint discussion about the PC priorities and work plan. 10/1/12 is tentative date pending okay from PC members.
REGULAR MEETING	
Communications • Dr. Mateo Aboy, OIT	Presentation outlining the educational opportunities and programs provided by OIT, as well as the success rates of students in obtaining employment after graduation.
Consent Agenda • Minutes of the August 6, 2012 Meeting	Approved 4-0
New Business • Resolution No. 2379 adopting the 3-year collective bargaining contracts for SEIU and WilMEA	Approved 4-0
Continuing Business • Ordinance no. 707 adopting the updated Water System Master Plan	Approved 4-0
City Manager's Business	Recap of meeting. Council to let staff know if they will be attending the City sponsored LOC activities.
Legal Business	No report

RECORDED BY: _____**SCK**_____