

AGENDA

WILSONVILLE CITY COUNCIL MEETING AUGUST 20, 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

- 5:00 P.M. EXECUTIVE SESSION [15 min.]**
A. Pursuant to ORS 192.660(2)(e) Real Property Transactions
ORS 192.660(2)(f) Exempt Public Records
- 5:15 P.M. COUNCILORS' CONCERNS [5 min.]**
- 5:25 P.M. PRE-COUNCIL WORK SESSION**
- A. Boeckman Road Update (Kohlhoff/Cosgrove) [15 min.]
B. Matrix Development Agreement Addendum (Kohlhoff) [15 min.]
C. City Manager Recap [2 min.]
- 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 regular session to be held Monday, August 20, 2012 at City Hall. Legislative matters must have been filed in the office of the City Recorder by 10 a.m. on August 7, 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. Safe Routes to School and Lowrie Primary School Opening (staff – Adams/Neamtzu)

7:15 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.

7:20 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

7:25 P.M. CONSENT AGENDA

- A. **Resolution No. 2375**
A Resolution Of The Wilsonville City Council, Acting As The Local Contract Review Board, Authorizing South Metro Area Regional Transit (Smart) To Purchase Two 25-Foot/19-Passenger El Dorado National Gasoline Powered Aerotech Buses Along With Associated Equipment From Schetty NW Sales, Inc. (Staff – Lashbrook)

7:30 P.M. NEW BUSINESS

- A. **Resolution No. 2376**
A Resolution Of The Wilsonville City Council Adopting The Wilsonville Economic Development Strategy Of 2012. (staff – Lashbrook/Retherford/Ottenad)
- B. **Resolution No 2377**
A Resolution Of The City Of Wilsonville Approving Addendum No. 4 To The Development Agreement Of June 14, 2004 By And Between The City Of Wilsonville (City) And The Urban Renewal Agency Of The City Of Wilsonville (URA) And Matrix Development Corporation (Developer) And Property Owners Donald E. Bischof / Sharon L. Lund, Arthur C. / Dee W. Piculell, The Dearmond Family LLC / Louis J. / Margaret P. Fasano (Owners) And Valerie And Matthew Kirkendall (Kirkendall). (staff –Kohlhoff)

- C. **Resolution No 2378**
A Resolution Of The City Of Wilsonville Approving The Bid Process; Accepting The Lowest Responsible Bid; Awarding A Construction Contract To K&E Excevatng, Inc. The Lowest Responsible Bidder; Verifying Fund Availability; For The Boeckman Road Bridge Repairs Phase 1 Project #4177. (staff – Adams)

8:00 P.M. PUBLIC HEARING

- A. **Ordinance No. 707** – first 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)
- B. **Resolution 2350**
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)

8:45 P.M. CITY MANAGER’S BUSINESS

- A. Meeting Recap

8:50 P.M. LEGAL BUSINESS

8:55 P.M. ADJOURN

AN URBAN RENEWAL AGENCY MEETING WILL IMMEDIATELY FOLLOW

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



Lowrie Primary School
28995 SW Brown Rd
Wilsonville, OR 97070
Opening Fall 2012



**INTERGOVERNMENT COOPERATIVE AGREEMENT
FOR VILHEIUS SCHOOL SITE INFRASTRUCTURE
BETWEEN CITY OF WILSONVILLE AND
WEST LINN-WILSONVILLE SCHOOL DISTRICT**

ORIGINAL
9.22.12 [Signature]

A. WHEREAS, the City of Wilsonville (City), an Oregon municipal corporation, and the West Linn-Wilsonville School District (District), an Oregon school district, are authorized pursuant to ORS 190.003 et seq, to enter into intergovernmental agreements for the performance of any and all functions and activities that a party, or its officers or agencies, have authority to perform; and

B. WHEREAS, City and District are authorized pursuant to ORS 280.150 to "jointly, in such manner as they shall agree upon, construct, acquire, own, equip, operate and maintain facilities which will directly aid each participating governmental unit in performing a duty or duties upon it or aid in executing a power or powers conferred upon it, and may appropriate money and may issue bonds thereof"; and

C. WHEREAS, in the exercise of their respective duties and powers, the City and District have previously planned and conferred regarding the residential growth of the City, now and into the future, and the need to plan for, construct, and operate, among other things, school facilities, recreation field facilities, and infrastructure facilities to serve such growth; and

D. WHEREAS, in the exercise of its duties and powers, the City has planned, provided infrastructure for, and regulated the initial development of the Vilheius Village, a planned unit residential development with mixed commercial use (inclusive of approximately 2,600 residential units, pursuant to the duly adopted Vilheius Village Master Plan; and

E. WHEREAS, as part of their respective duties and powers, and through conferring with each other, the City and District identified the need for an approximately 10-acre site for a grade school within the Vilheius Village Master Plan; and

F. WHEREAS, the City and District originally determined that the grade school site should be located within the eastern portion of the Vilheius development but, after consultation with land owners and developers, the grade school site was planned for the northwest section of the development and so placed in the adopted version of the Vilheius Village Master Plan; and

G. WHEREAS, to meet the City's needs for future recreation field facilities to accommodate growth, as defined in the Master Parks and Recreation Plan, and the District's

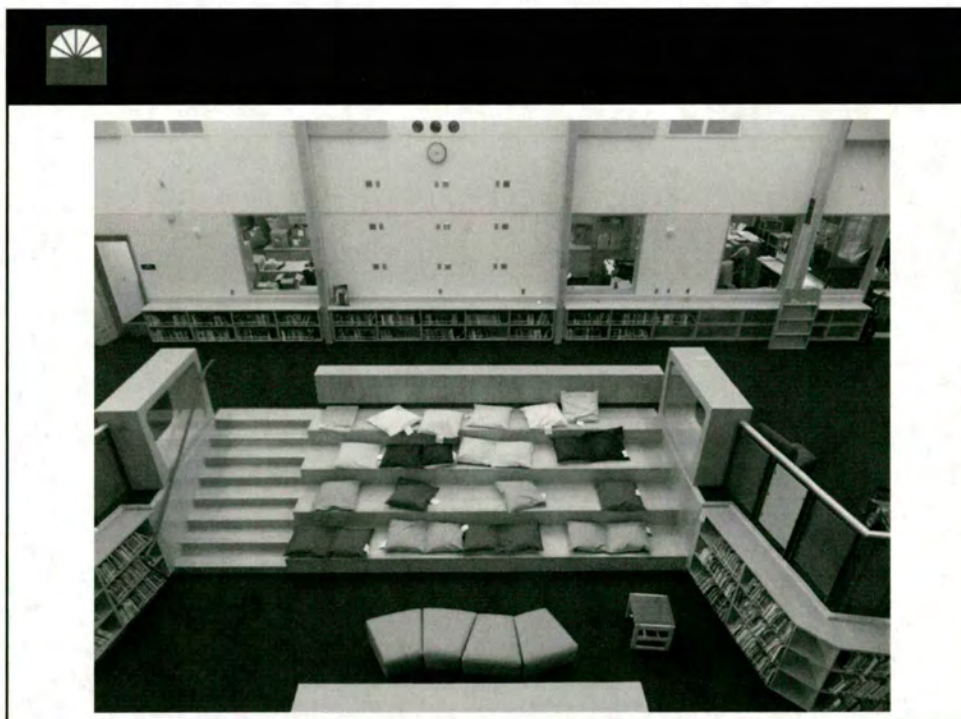
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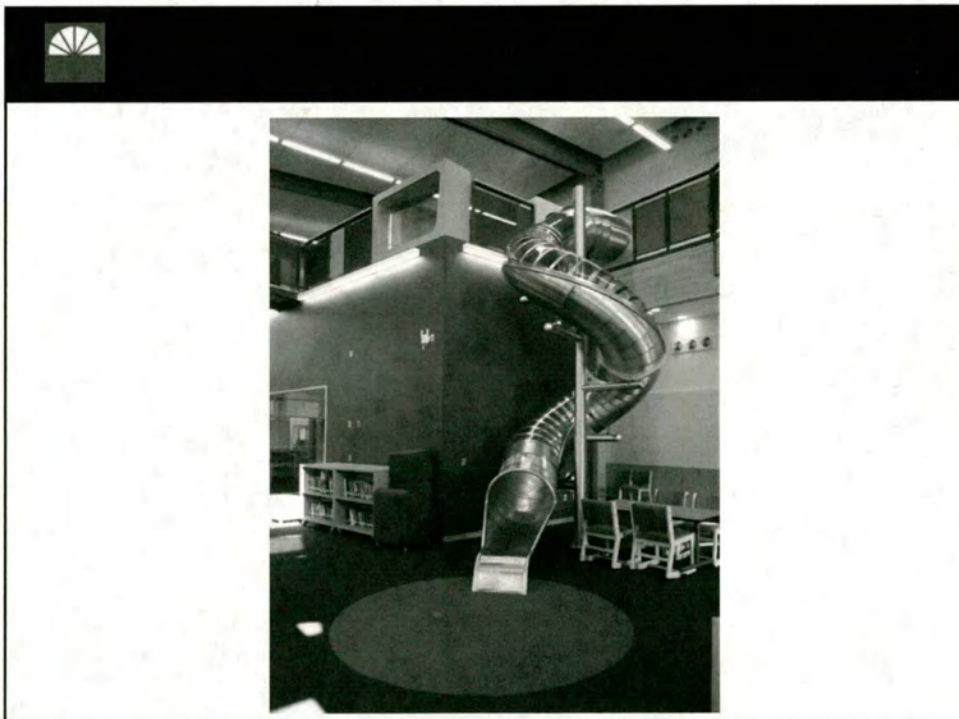
INTERGOVERNMENT COOPERATIVE AGREEMENT

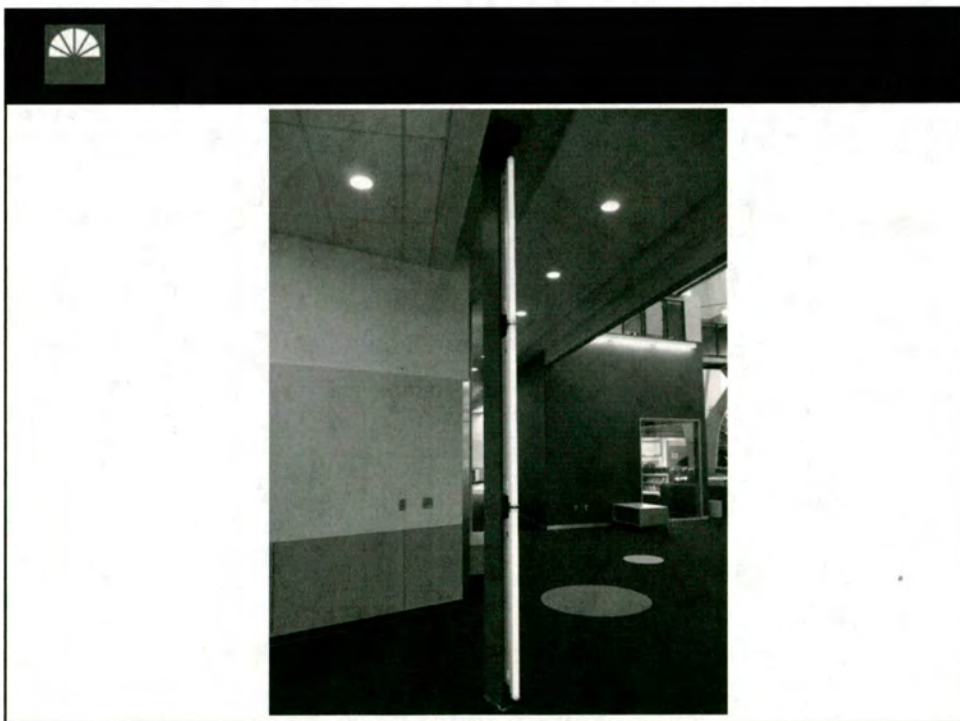












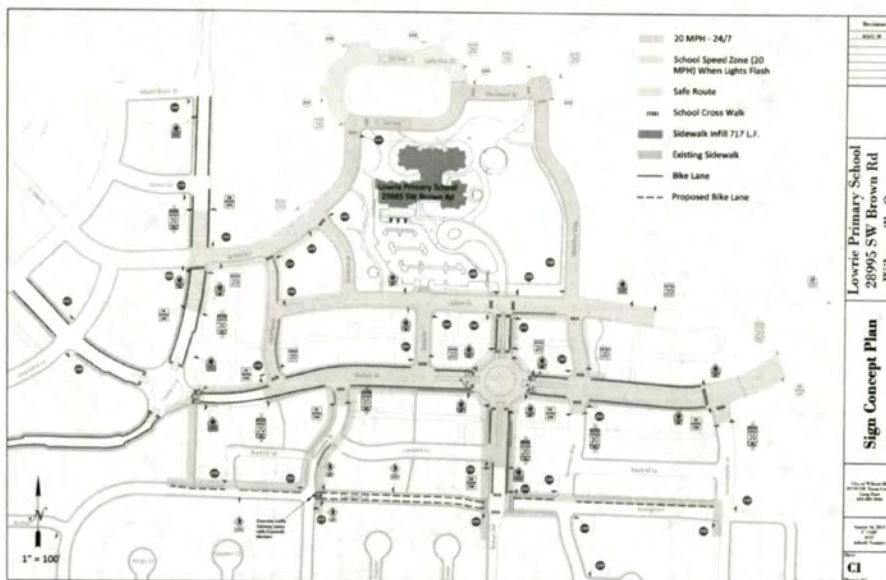




Aerial 5-16-2011



Aerial 7-26-2012





Important Dates

November 2008 Bond Passed to Build New Villebois School

September 2010 IGA Signed

May 2011 Construction Started

July 2012 Construction Ended

8.20.2012 Teachers Back

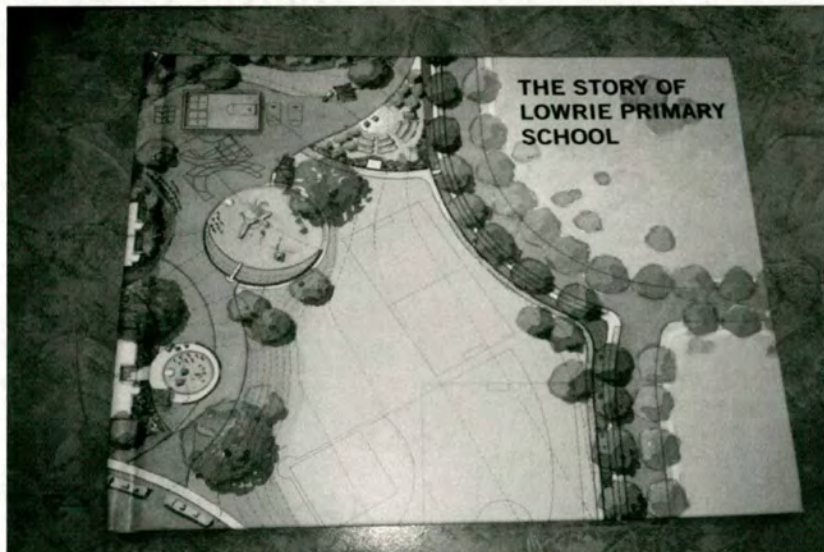
8.24.2012 Pancake Breakfast and Tour (7:00 AM)

8.30.2012 Meet & Greet Your Teacher (2:30 PM)

9.4.2012 First Day of School

9.11.2012 Back to School Benefit (5:00 PM @ McMenamins)

9.26.2012 Building Dedication & Curriculum Night (6:00 PM)



Thank You!

CITY COUNCIL ROLLING SCHEDULE

Board and Commission Meetings 2012

AUGUST

Date	Day	Time	Event	Place
8/20	Monday	7 p.m.	City Council Meeting	Council Chambers
8/27	Monday	6:30 p.m.	DRB Panel B	Council Chambers

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.

Movies in the Park

Memorial Park - River Shelter
August 24 – The Lorax

All movies are FREE and will be shown on an inflatable BIG SCREEN at the River Shelter in Memorial Park. Bring a blanket to sit on. Popcorn, candy, drinks & other eats available for purchase. Lawn opens at 8:15 p.m. Movie starts at dusk. For more information contact Brian Stevenson at 503-570-1523.

Wilsonville Farmers Market

Sofia Park 28836 SW Costa Circle Villebois
Every Thursday beginning June 28 – 4 p.m.

Beauty & the Bridge Dedication Event

Sunday, September 23 – Noon – 1:30 p.m. (times tentative)

**CITY COUNCIL MEETING
STAFF REPORT**

Meeting Date: August 20, 2012	Subject: Purchase two 19-passenger cutaway (mini) buses with 80 percent grant funding. Staff Members: Lashbrook/Allen Department: Transit	
Action Required	Advisory Board/Commission Recommendation	
<input checked="" type="checkbox"/> Motion <input type="checkbox"/> Public Hearing Date: <input type="checkbox"/> Ordinance 1st Reading Date: <input type="checkbox"/> Ordinance 2nd Reading Date: <input checked="" type="checkbox"/> Resolution <input type="checkbox"/> Information or Direction <input type="checkbox"/> Information Only <input type="checkbox"/> Council Direction <input type="checkbox"/> Consent Agenda	<input type="checkbox"/> Approval <input type="checkbox"/> Denial <input type="checkbox"/> None Forwarded <input checked="" type="checkbox"/> Not Applicable Comments: 	
Staff Recommendation: The staff recommends approval of Resolution No. 2375		
Recommended Language for Motion: "I move to approve Resolution No. 2375"		
PROJECT / ISSUE RELATES TO:		
<input type="checkbox"/> Council Goals/Priorities	<input checked="" type="checkbox"/> Adopted Master Plan(s) Transit Master Plan	<input type="checkbox"/> Not Applicable

ISSUE BEFORE COUNCIL: Council action is required on Resolution No. 2375 to enable SMART to utilize an already approved state grant for two new small, 19-passenger cutaway buses (often referred to as minibuses). The grant will pay for 80 percent of the total cost of these buses (\$127,838 of the \$159,798 total price) with the matching amount to be taken from SMART's capital reserve fund. The purchase of these two small buses will replace two 2005 similar buses which have increasingly become unreliable, maintenance intensive and have exceeded their useful life.

EXECUTIVE SUMMARY: Council action is needed on Resolution No. 2375 promptly for SMART to meet the requirements of the state grant, as the grant expires on June 30, 2013, with a build/delivery timeframe of 5 - 6 months. SMART must take delivery by June 30, 2013, or risk losing the grant.

EXPECTED RESULTS: With council approval of Resolution No. 2375, staff will immediately place an order for these two buses. The buses will be purchased off of the State Price Agreement, assuring the lowest pricing available.

TIMELINE: These buses are expected to be delivered early in 2013.

CURRENT YEAR BUDGET IMPACTS: The cost of the two buses has been budgeted and approved for the current fiscal year.

FINANCIAL REVIEW / COMMENTS:

Reviewed by: _____ Date: _____
Reviewed by: JEO _____ Date: 8/8/12 _____
Finance reviewed the resolution and confirmed funding is available.

LEGAL REVIEW / COMMENT:

Reviewed by: MEK _____ Date: 8/7/12 _____
The Resolution is approved as to form. The solicitation was through the state ensuring public contracting requirements were met.

COMMUNITY INVOLVEMENT PROCESS: Replacing aging buses is part of the Transit Master Plan, which states in part: "SMART needs to replace worn and unreliable buses..." (Chapter 3, pg. 36). This two-bus request is part of that program.

POTENTIAL IMPACTS or BENEFIT TO THE COMMUNITY: By utilizing this grant program, the City is able to significantly reduce costs to the local business community which supports SMART through payroll taxes. Local citizens will benefit by having more reliable service and more comfortable and clean buses that are more efficient than older models.

ALTERNATIVES: The only alternative is for Council to reject Resolution No. 2375 and not acquire new buses. Staff does not recommend this alternative.

CITY MANAGER COMMENT:

ATTACHMENTS

- A. Resolution No. 2375

RESOLUTION NO. 2375

A RESOLUTION OF THE WILSONVILLE CITY COUNCIL, ACTING AS THE LOCAL CONTRACT REVIEW BOARD, AUTHORIZING SOUTH METRO AREA REGIONAL TRANSIT (SMART) TO PURCHASE TWO 25-FOOT/19-PASSENGER EL DORADO NATIONAL GASOLINE POWERED AEROTECH BUSES ALONG WITH ASSOCIATED EQUIPMENT FROM SCHETKY NW SALES, INC.

WHEREAS, a goal of South Metro Area Regional Transit (SMART) is to replace older buses with cleaner more fuel-efficient buses meeting industry standards to serve local residents, employees and employers; and

WHEREAS, based on Federal Transit Administration useful life standards, two cutaway buses in SMART's current fleet have now exceeded those standards; and

WHEREAS, SMART received a State of Oregon grant (#27734) of up to \$172,282 to provide 80 percent of the funding to purchase two replacement vehicles; and

WHEREAS, the grant for the purchase of these two buses is set to expire on June 30, 2013; and

WHEREAS, the normal delivery schedule for cutaway buses is 5 to 6 months, and

WHEREAS, the grant from the State and the proposed purchase of two buses are included in the approved fiscal year 2012/13 budget for the City of Wilsonville; and

WHEREAS, SMART has utilized the State price agreement and will purchase the buses through the State procurement program in accordance with all City, State, and Federal procurement requirements that guarantee open and fair competition; and

WHEREAS, Schetky NW Sales, Inc. has supplied a quote in the State price agreement for Aerotech buses in the amount of \$79,899 each, including all scheduled options; and

WHEREAS, SMART has chosen to purchase two vehicles with selected options for a total of \$159,798; and

WHEREAS, the City has budgeted funds to cover the 20 percent match amount (\$31,960) required for the grant; and

WHEREAS, the City Council has duly appointed itself as the Local Contract Review Board and acting as the Local Contract Review Board is authorized to award the purchase contract in conformance with the State procurement program.

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

1. Based on the above recitals which are incorporated herein, the City Council, acting as the Local Review Board, does hereby approve and authorize SMART to submit a Purchase Order for the purchase of two 25-foot/19-passenger El Dorado/National buses and associated equipment to Schetky NW Sales, Inc.
2. The expenditures for this purchase are hereby authorized, not to exceed the total FY 2012/13 amount as budgeted:

<u>Account</u>	<u>Budget Amount</u>
260-160-45060	\$215,352

3. This Resolution is effective upon adoption.

ADOPTED by the Wilsonville City Council at a regular meeting on August 20, 2012 and filed with the Wilsonville City Recorder this date.

TIM KNAPP, MAYOR

ATTEST:

Sandra C. King, City Recorder, MMC

SUMMARY OF VOTES:

Mayor Knapp

Council President Núñez

Councilor Goddard

Councilor Starr

**CITY COUNCIL MEETING
STAFF REPORT**

Meeting Date: August 20, 2012	Subject: Boeckman Road Bridge Repairs Phase 1 Project Staff Member: Steve Adams Department: Engineering	
Action Required <input type="checkbox"/> Motion <input type="checkbox"/> Public Hearing Date: <input type="checkbox"/> Ordinance 1 st Reading Date: <input type="checkbox"/> Ordinance 2 nd Reading Date: <input checked="" type="checkbox"/> Resolution <input type="checkbox"/> Information or Direction <input type="checkbox"/> Information Only <input type="checkbox"/> Council Direction <input type="checkbox"/> Consent Agenda	Advisory Board/Commission Recommendation <input type="checkbox"/> Approval <input type="checkbox"/> Denial <input type="checkbox"/> None Forwarded <input checked="" type="checkbox"/> Not Applicable Comments:	
Staff Recommendation: Staff recommends approval for the City to enter into a contract with K&E Excavating Inc. for completing construction of the Boeckman Road Bridge Repairs Phase 1 Project.		
Recommended Language for Motion: I move to approve Resolution No. 2378.		
PROJECT / ISSUE RELATES TO: <i>[Identify which goal(s), master plans(s) issue relates to.]</i>		
<input type="checkbox"/> Council Goals/Priorities	<input checked="" type="checkbox"/> Adopted Master Plan(s)	<input type="checkbox"/> Not Applicable

ISSUE BEFORE COUNCIL

A Resolution of the City of Wilsonville approving the bid process, accepting the lowest, responsible bidder and awarding a construction contract to K&E Excavating Inc. Action of approval by City Council is requested.

EXECUTIVE SUMMARY:

In June of 2012 City Council approved the funding of the Capital Improvement Project known as

Boeckman Road Bridge Repairs project. This Project is funded through a settlement of claims with HDR Engineering and has been assigned Capital Improvement Project #4177. The project is the first phase to repair portions of the Boeckman Road extension and bridge abutments that failed due to sinking of the roadway. This first phase project involves the engineered placement of surcharge materials on portions of the road to achieve greater primary compression of the underlying peat soils of the wetland area under the roadway. The compression being achieved by the surcharging will be monitored by Hart Crowser and approval by the geotechnical engineer given prior to allowing reconstruction of the roadway (this is Phase 2 work to be bid and awarded in 2013).

EXPECTED RESULTS:

Complete primary surcharging of the unconsolidated underlying soils in the applicable portions of the roadway in preparation for reconstruction of Boeckman Road in 2013.

TIMELINE:

Construction to begin on August 21, 2012, and surcharge loading to be completed during winter 2013. Reconstruction of Boeckman Road to be bid and awarded in 2013.

CURRENT YEAR BUDGET IMPACTS:

Project #4177 is funded through a settlement of claims with HDR Engineering and approved in the 2012/2013 Budget.

FINANCIAL REVIEW / COMMENTS:

Reviewed by: JEO _____ Date: 8/10/12 _____
Confirmed that the funding is available in Urban Renewal Funds.

LEGAL REVIEW / COMMENT:

Reviewed by: MEK _____ Date: 8/7/12 _____
The Resolution is approved as to form. The bids were duly solicited, received, opened, and reviewed. The lowest responsible bidder was selected and recommended for award of contract in keeping applicable laws and regulations for public contracting.

COMMUNITY INVOLVEMENT PROCESS:

Reconstruction efforts for Boeckman Road have been previously discussed at various Council sessions, posted on the City of Wilsonville website and presented as news articles in both The Oregonian and the Wilsonville Spokesman.

POTENTIAL IMPACTS or BENEFIT TO THE COMMUNITY:

Project # 4177 will repair Boeckman Road across the Coffee Lake Wetlands, this is a critical east-west arterial connecting route for Wilsonville. This project is considered a high priority. The closure of the road will present a hardship and inconvenience on the community.

ALTERNATIVES:

Other alternatives were not debated. City staff chose to reconstruct the roadway at close to the original design elevation due to permitting issues (any change in design would have triggered new permitting to be acquired from Army Corps of Engineers and Oregon Department of State

Lands), the design had already been drawn and approved and only needed to be modified slightly. Any changes in design would have been more costly and time consuming than repairing the road per the original design.

CITY MANAGER COMMENT:

ATTACHMENTS

- A. Exhibit "A" – Summary of Bids

Boeckman Road Reconstruction

EXHIBIT "A" - SUMMARY OF BIDS

Owner: City of Wilsonville
August 2, 2012 - 4:00 pm

Item #	Description	Qty	Unit	K & E Excavating #1		Braun Construction #2		Kerr Contractor #3		Pacific Excavation #4		NEI #5	
				Unit Price	Total	Unit Price	Total	Unit Price	Total	Unit Price	Total	Unit Price	Total
1	Mobilization	1	LS	\$ 25,340.00	\$ 25,340.00	\$ 12,500.00	\$ 12,500.00	\$ 55,000.00	\$ 55,000.00	\$ 35,000.00	\$ 35,000.00	\$ 42,240.00	\$ 42,240.00
2	Temp Protection & Direction of Traffic	1	LS	\$ 2,151.00	\$ 2,151.00	\$ 6,000.00	\$ 6,000.00	\$ 2,000.00	\$ 2,000.00	\$ 10,000.00	\$ 10,000.00	\$ 1,270.00	\$ 1,270.00
3	Temp Concrete Barrier	100	Foot	\$ 25.00	\$ 2,500.00	\$ 24.00	\$ 2,400.00	\$ 27.50	\$ 2,750.00	\$ 40.00	\$ 4,000.00	\$ 28.10	\$ 2,810.00
4	Temp Type CL Chain-Link Fence	160	Foot	\$ 2.75	\$ 440.00	\$ 10.00	\$ 1,600.00	\$ 15.00	\$ 2,400.00	\$ 10.00	\$ 1,600.00	\$ 10.20	\$ 1,632.00
5	Erosion/Water Pollution Control	1	LS	\$ 3,223.00	\$ 3,223.00	\$ 1,500.00	\$ 1,500.00	\$ 3,000.00	\$ 3,000.00	\$ 15,000.00	\$ 15,000.00	\$ 3,230.00	\$ 3,230.00
6	Pollution Control Plan	1	LS	\$ 618.00	\$ 618.00	\$ 650.00	\$ 650.00	\$ 250.00	\$ 250.00	\$ 100.00	\$ 100.00	\$ 730.00	\$ 730.00
7	Removal of Structures & Obstructions	1	LS	\$ 12,085.00	\$ 12,085.00	\$ 17,000.00	\$ 17,000.00	\$ 21,200.00	\$ 21,200.00	\$ 25,000.00	\$ 25,000.00	\$ 15,040.00	\$ 15,040.00
8	Sawcut Existing Asphalt or Concrete	100	Foot	\$ 3.00	\$ 300.00	\$ 3.00	\$ 300.00	\$ 2.50	\$ 250.00	\$ 7.00	\$ 700.00	\$ 1.90	\$ 190.00
9	Salvage Existing Features	1	LS	\$ 7,910.00	\$ 7,910.00	\$ 10,000.00	\$ 10,000.00	\$ 15,000.00	\$ 15,000.00	\$ 7,000.00	\$ 7,000.00	\$ 15,180.00	\$ 15,180.00
10	Clearing and Grubbing	1	LS	\$ 4,010.00	\$ 4,010.00	\$ 1,850.00	\$ 1,850.00	\$ 7,500.00	\$ 7,500.00	\$ 10,000.00	\$ 10,000.00	\$ 48,380.00	\$ 48,380.00
11	Stone Embankment	9800	CuYd	\$ 23.00	\$ 225,400.00	\$ 25.50	\$ 249,900.00	\$ 21.00	\$ 205,800.00	\$ 23.00	\$ 225,400.00	\$ 27.60	\$ 270,480.00
12	Settlement Plates	6	EA	\$ 268.00	\$ 1,608.00	\$ 850.00	\$ 5,100.00	\$ 250.00	\$ 1,500.00	\$ 500.00	\$ 3,000.00	\$ 169.40	\$ 1,016.40
13	Box Culvert Support	1	LESS	\$ 4,630.00	\$ 4,630.00	\$ 3,500.00	\$ 3,500.00	\$ 5,500.00	\$ 5,500.00	\$ 6,000.00	\$ 6,000.00	\$ 12,010.00	\$ 12,010.00
14	Extend Daylight Opening	5	EA	\$ 1,160.00	\$ 5,800.00	\$ 1,450.00	\$ 7,250.00	\$ 775.00	\$ 3,875.00	\$ 1,000.00	\$ 5,000.00	\$ 725.20	\$ 3,626.00
15	Protect Existing Vault	1	LS	\$ 5,640.00	\$ 5,640.00	\$ 4,500.00	\$ 4,500.00	\$ 2,500.00	\$ 2,500.00	\$ 5,000.00	\$ 5,000.00	\$ 14,510.00	\$ 14,510.00
16	Cap Irrigation System	1	LS	\$ 2,030.00	\$ 2,030.00	\$ 700.00	\$ 700.00	\$ 500.00	\$ 500.00	\$ 3,000.00	\$ 3,000.00	\$ 1,690.00	\$ 1,690.00
17	Remove Existing Hydrants	1	EA	\$ 310.00	\$ 310.00	\$ 650.00	\$ 650.00	\$ 1.00	\$ 1.00	\$ 1,000.00	\$ 1,000.00	\$ 710.40	\$ 710.40
Totals					\$ 303,995.00		\$ 325,400.00		\$ 329,026.00		\$ 356,800.00		\$ 434,744.80

RESOLUTION NO. 2378

A RESOLUTION OF THE CITY OF WILSONVILLE APPROVING THE BID PROCESS; ACCEPTING THE LOWEST RESPONSIBLE BID; AWARDING A CONSTRUCTION CONTRACT TO K & E EXCAVATING INC. THE LOWEST RESPONSIBLE BIDDER; VERIFYING FUND AVAILABILITY; FOR THE BOECKMAN ROAD BRIDGE REPAIRS PHASE 1 PROJECT #4177.

WHEREAS, the City previously entered into an Intergovernmental Agreement with the State Of Oregon to construct the project known as the Boeckman Road to Tooze Road Connection Project, and subsequently entered into finance agreements to fund design and construction of roadway and infrastructure improvements from Boberg Road west some 6,500 feet to Tooze Road, including construction of the roadway and bridge section across the Coffee Lake Wetlands; and

WHEREAS, the City entered into a Professional Services Agreement With HDR Engineering Inc. to design said improvements, and entered into a Professional Services Agreement with Mackay & Sposito, Inc. to provide professional (engineering) services and project management services for said improvements; and

WHEREAS, following construction of the said improvements, excessive settlement of the roadway constructed on fill was observed to be occurring immediately east and west of the bridge section, and subsequently confirmed by survey; and

WHEREAS, the City of Wilsonville instituted a lawsuit, *City of Wilsonville v. HDR Engineering*, Clackamas County Circuit Court Case No. CV 10070047, over geotechnical and design errors involving the subsidence of the road and bridge abutments over compressible soils known as the Boeckman Road Extension Project; and

WHEREAS, pursuant to Resolution No. 2323, adopted September 21, 2011, a settlement of claims was authorized in the above-referenced case; and

WHEREAS, on June 4, 2012, the Wilsonville City Council adopted a Capital Improvement Program for the City that includes a FY 2012/2013 appropriation of \$976,750.00 for the Boeckman Road Bridge Repairs project #540.950.45030.00000.4177; and

WHEREAS, in February 2012 the City had entered into a Professional Services Agreement with Hart Crowser, Inc. to be the prime consultant, project manager and geotechnical engineer to lead the redesign and re-construction of Boeckman Road; and

WHEREAS, the City choose to split the reconstruction of Boeckman Road into a Phase 1 demolition and surcharge contract to be issued in 2012, followed by a separate Phase 2 reconstruction contract to be bid and awarded in 2013; and

WHEREAS, Boeckman Road has been closed across the wetlands since July 11 to allow franchise utility companies to relocate their utility lines in anticipation of the impending demolition work; and

WHEREAS, the Boeckman Road Bridge Repairs Phase 1 project was duly advertised for pre-qualifications of general contractors on the City of Wilsonville Web Site and in the Daily Journal of Commerce on June 18th and June 25th, 2012, a newspaper of general circulation; and

WHEREAS, the Boeckman Road Bridge Repairs Phase 1 project was duly advertised for competitive bids from the pre-qualified general contractors on the City of Wilsonville Web Site and in the Daily Journal of Commerce on July 17, 2012, a newspaper of general circulation; and

WHEREAS, five (5) sealed bids were received from the list of pre-qualified General Contractors prior to 2:00 p.m., local time, August 2, 2012, at the City Hall, Wilsonville, Oregon 97070, and at 4:00 PM, local time, August 2, 2012, bids were then opened individually and separately read aloud. A summary of bids under this construction contract are marked "Exhibit A", attached hereto and incorporated herein; and

WHEREAS, the lowest base bid of \$303,995.00 was submitted by K&E Excavating Inc. Contractors, Inc. and they are considered the apparent low bidder; and

WHEREAS, the contract has an anticipated Notice to Proceed date of August 21, 2012; and

WHEREAS, the City of Wilsonville reserves the right to reject any bid and to waive all informalities, or to accept any bid which appears to serve the best interests of the City Council, acting as the Local Contract Review Board, as reserved in its Invitation To Bid; and

WHEREAS, the City of Wilsonville desires to execute a Construction Contract Agreement in a timely manner.

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

1. The City Council acting as the Local Contract Review Board finds and concludes:
 - a. The recital of findings above is incorporated by reference herein.
 - b. The bid of K&E Excavating Inc. is deemed responsive. K&E Excavating Inc. is the lowest responsible bidder and is qualified for the work.
2. Subject to the final review and approval of the City Engineer and in accordance with the provisions of Oregon Revised Statutes, Chapter 279C, Public Contracting – Public Improvements and Related Contracts and Wilsonville Code 2.3.14, Contracts with the City, and the Attorney General’s Model Rules which the City has adopted as its contracting rules; the City Council acting as the Contract Review Board hereby awards the contract with the bid alternative option for the Boeckman Road Bridge Repairs Phase 1 project to K&E Excavating Inc., the lowest responsible bidder, in the amount of \$303,995.00.
3. Subject to final completion of all improvements specified in the contract documents, the City Engineer is authorized to certify the required improvements complete and make final payment including release of retainage.
4. The City Engineer is authorized to approve change orders to this contract so long as total project costs do not exceed the budgeted amounts.
5. Authorize the expenditure of project funds as budget authorization of Fiscal Year 2010/2011 CIP budget as follows:

<u>ACCOUNT</u>	<u>AMOUNT</u>
540.950.45030.00000.4177	\$303,995.00.
6. This resolution is effective upon adoption

ADOPTED by the Wilsonville City Council at a regular meeting thereof this 20th day of August, 2012, and filed with the Wilsonville City Recorder this date.

TIM KNAPP, MAYOR

ATTEST:

Sandra C. King, CMC, City Recorder

SUMMARY OF VOTES:

Mayor Knapp _____
Council President Nunez _____
Councilor Goddard _____
Councilor Starr _____

Attachment: Exhibit A Bid Summary

Boeckman Road Reconstruction

EXHIBIT "A" - SUMMARY OF BIDS

Owner: City of Wilsonville
August 2, 2012 - 4:00 pm

Item #	Description	Qty	Unit	K & E Excavating #1		Braun Construction #2		Kerr Contractor #3		Pacific Excavation #4		NEI #5	
				Unit Price	Total	Unit Price	Total	Unit Price	Total	Unit Price	Total	Unit Price	Total
1	Mobilization	1	LS	\$ 25,340.00	\$ 25,340.00	\$ 12,500.00	\$ 12,500.00	\$ 55,000.00	\$ 55,000.00	\$ 35,000.00	\$ 35,000.00	\$ 42,240.00	\$ 42,240.00
2	Temp Protection & Direction of Traffic	1	LS	\$ 2,151.00	\$ 2,151.00	\$ 6,000.00	\$ 6,000.00	\$ 2,000.00	\$ 2,000.00	\$ 10,000.00	\$ 10,000.00	\$ 1,270.00	\$ 1,270.00
3	Temp Concrete Barrier	100	Foot	\$ 25.00	\$ 2,500.00	\$ 24.00	\$ 2,400.00	\$ 27.50	\$ 2,750.00	\$ 40.00	\$ 4,000.00	\$ 28.10	\$ 2,810.00
4	Temp Type CL Chain-Link Fence	160	Foot	\$ 2.75	\$ 440.00	\$ 10.00	\$ 1,600.00	\$ 15.00	\$ 2,400.00	\$ 10.00	\$ 1,600.00	\$ 10.20	\$ 1,632.00
5	Erosion/Water Pollution Control	1	LS	\$ 3,223.00	\$ 3,223.00	\$ 1,500.00	\$ 1,500.00	\$ 3,000.00	\$ 3,000.00	\$ 15,000.00	\$ 15,000.00	\$ 3,230.00	\$ 3,230.00
6	Pollution Control Plan	1	LS	\$ 618.00	\$ 618.00	\$ 650.00	\$ 650.00	\$ 250.00	\$ 250.00	\$ 100.00	\$ 100.00	\$ 730.00	\$ 730.00
7	Removal of Structures & Obstructions	1	LS	\$ 12,085.00	\$ 12,085.00	\$ 17,000.00	\$ 17,000.00	\$ 21,200.00	\$ 21,200.00	\$ 25,000.00	\$ 25,000.00	\$ 15,040.00	\$ 15,040.00
8	Sawcut Existing Asphalt or Concrete	100	Foot	\$ 3.00	\$ 300.00	\$ 3.00	\$ 300.00	\$ 2.50	\$ 250.00	\$ 7.00	\$ 700.00	\$ 1.90	\$ 190.00
9	Salvage Existing Features	1	LS	\$ 7,910.00	\$ 7,910.00	\$ 10,000.00	\$ 10,000.00	\$ 15,000.00	\$ 15,000.00	\$ 7,000.00	\$ 7,000.00	\$ 15,180.00	\$ 15,180.00
10	Clearing and Grubbing	1	LS	\$ 4,010.00	\$ 4,010.00	\$ 1,850.00	\$ 1,850.00	\$ 7,500.00	\$ 7,500.00	\$ 10,000.00	\$ 10,000.00	\$ 48,380.00	\$ 48,380.00
11	Stone Embankment	9800	CuYd	\$ 23.00	\$ 225,400.00	\$ 25.50	\$ 249,900.00	\$ 21.00	\$ 205,800.00	\$ 23.00	\$ 225,400.00	\$ 27.60	\$ 270,480.00
12	Settlement Plates	6	EA	\$ 268.00	\$ 1,608.00	\$ 850.00	\$ 5,100.00	\$ 250.00	\$ 1,500.00	\$ 500.00	\$ 3,000.00	\$ 169.40	\$ 1,016.40
13	Box Culvert Support	1	LESS	\$ 4,630.00	\$ 4,630.00	\$ 3,500.00	\$ 3,500.00	\$ 5,500.00	\$ 5,500.00	\$ 6,000.00	\$ 6,000.00	\$ 12,010.00	\$ 12,010.00
14	Extend Daylight Opening	5	EA	\$ 1,160.00	\$ 5,800.00	\$ 1,450.00	\$ 7,250.00	\$ 775.00	\$ 3,875.00	\$ 1,000.00	\$ 5,000.00	\$ 725.20	\$ 3,626.00
15	Protect Existing Vault	1	LS	\$ 5,640.00	\$ 5,640.00	\$ 4,500.00	\$ 4,500.00	\$ 2,500.00	\$ 2,500.00	\$ 5,000.00	\$ 5,000.00	\$ 14,510.00	\$ 14,510.00
16	Cap Irrigation System	1	LS	\$ 2,030.00	\$ 2,030.00	\$ 700.00	\$ 700.00	\$ 500.00	\$ 500.00	\$ 3,000.00	\$ 3,000.00	\$ 1,690.00	\$ 1,690.00
17	Remove Existing Hydrants	1	EA	\$ 310.00	\$ 310.00	\$ 650.00	\$ 650.00	\$ 1.00	\$ 1.00	\$ 1,000.00	\$ 1,000.00	\$ 710.40	\$ 710.40
Totals					\$ 303,995.00		\$ 325,400.00		\$ 329,026.00		\$ 356,800.00		\$ 434,744.80

**CITY COUNCIL MEETING
STAFF REPORT**

Meeting Date: August 20, 2012		Subject: Adoption of Economic Development Strategy	
		Staff Member: Lashbrook/Retherford/Ottenad Department: Transit/C.D./Administration	
Action Required		Advisory Board/Commission Recommendation	
<input type="checkbox"/> Motion <input type="checkbox"/> Public Hearing Date: <input type="checkbox"/> Ordinance 1 st Reading Date: <input type="checkbox"/> Ordinance 2 nd Reading Date: <input checked="" type="checkbox"/> Resolution <input type="checkbox"/> Information or Direction <input type="checkbox"/> Information Only <input type="checkbox"/> Council Direction <input type="checkbox"/> Consent Agenda		<input checked="" type="checkbox"/> Approval <input type="checkbox"/> Denial <input type="checkbox"/> None Forwarded <input type="checkbox"/> Not Applicable Comments: The Economic Development Advisory Committee recommended that the Council adopt and implement the Economic Development Strategy.	
Staff Recommendations:			
1. Adopt Resolution No. 2376, adopting the Economic Development Strategy and providing direction to the City Manager for implementation; and 2. Begin the process of creating a Task Force to make recommendations regarding Actions 1.1 and 6.2 of the Economic Development Strategy.			
Recommended Language for Motion: "I move to approve Resolution No. 2376"			
PROJECT / ISSUE RELATES TO:			
<input checked="" type="checkbox"/> Council Goals/Priorities Council Goal D		<input checked="" type="checkbox"/> Adopted Master Plan(s) Economic Opportunity Analysis (2008)	
		<input type="checkbox"/> Not Applicable	

ISSUE BEFORE COUNCIL:

The City Council met jointly with the Planning Commission in work session on August 6 and heard reports on the update of the Economic Opportunity Analysis (EOA) from Todd Chase of the FCS Group and a summary of the Economic Development Strategy, as recommended by the City's Economic Development Advisory Committee (EDAC) and presented by Terry Moore of ECONorthwest. In the course of the work session, the Planning Commissioners and City

Councilors expressed their interest in moving forward with the immediate adoption and implementation of Economic Development Strategy.

EXECUTIVE SUMMARY:

The City of Wilsonville has not previously had an Economic Development Strategy to guide the staff and decision-makers in dealing with economic development issues. The City has had, and continues to have, an array of policies in various documents addressing different aspects of economic development, but not a single document, with a two-page summary, to explain the City’s priorities for action in recruiting, supporting or promoting business development in Wilsonville.

The attached documents include an update to the EOA which was prepared to address recent changes affecting the local economy as well as the final draft of the Strategy itself, and a two-page summary of the Strategy. While this represents an impressive amount of work completed over the last six months with a great deal of public involvement, there are a number of follow-up tasks that must be completed to fully implement the Strategy. Much has been accomplished, but it will only have value for the community as it is implemented.

The preparation of the Economic Development Strategy directly addresses one of the City Council Goals, as follows:

“D. Develop, Adopt and Begin Implementation of a Comprehensive Economic Development Strategy.

- *Create a city-wide economic development plan*
- *Industrial, employment and future lands (including Coffee Creek) “*

Results of the recently completed community survey showed considerable public support for several of the basic tenets of the Economic Development Strategy, summarized below:

The City asked residents a number of custom questions including: *“To what extent do you support or oppose the City of Wilsonville taking the following actions regarding economic development in Wilsonville?”*

- 90 percent or more of respondents support efforts to actively recruit businesses to locate here or market the City to attract new businesses;
- 75 percent or more of respondents support the City adopting policies to encourage more affordable housing; and
- 69 percent or more of respondents support providing financial incentives to attract new businesses or to help expand existing businesses; conversely, 24 percent or more of respondents oppose providing financial incentives.

The divergence of opinion over the potential use of financial incentives to induce business location is similar to sentiments expressed during the economic development strategy process: most generally favor the use of incentives; some dislike incentives.

In the community survey, residents indicated that the biggest priorities facing the City of Wilsonville over the next five years include:

- Balancing growth with aesthetics and quality of life, keeping a small-town feel;
- Effectively managing the flow of traffic (vehicle) with all the new construction coming; and
- Bringing businesses to Wilsonville to fill vacant retail, office and industrial buildings before building more! Be business friendly; bring in jobs that pay a “Wilsonville wage.”

Although Wilsonville has a successful history in recruiting and retaining businesses, recent events have demonstrated the obvious need for a strategy to guide future actions and that strategy needs to have been widely vetted in the community and supported by the public. The proposed Economic Development Strategy accomplishes those things and it sets the stage for further actions by the City.

EXPECTED RESULTS:

Resolution No. 2376 in the short-term both adopts the proposed Economic Development Strategy and sets into motion the appointment of one or more citizen task forces to examine the characteristics of businesses that will be of greatest community benefit (“Targeted Retention and Recruitment”); and to determine what sorts of incentives, and under what circumstances, the community would be willing to provide to support and encourage the retention, expansion or recruitment of such businesses through incentives (“Inducement Incentives”).

In the longer-term, implementation of the Economic Development Strategy will provide staff with direction in terms of negotiations with businesses considering locating or expanding in Wilsonville. Beyond that, the strategy will help to set the direction for future City growth into areas slated for urbanization and development as industrial or “employment lands.” Members of the business community who are observing this process can be expected to see this action as an indication of the City’s business-friendly attitude.

Beyond that, it is predictable that the implementation of the Economic Development Strategy, and possible changes to the policies of the Economic Opportunity Analysis, will lead to changes in the City’s Comprehensive Plan and Development Code. Some of those things will take longer to implement, but the stage is now set for the Planning Commission to work with the Planning staff in preparing a work plan to address those things.

TIMELINE:

Assuming adoption of Resolution No. 2376 on August 20, staff anticipate that the task force(s) would be convened in September, issues reviewed by the task force(s) in October and November, and a recommendation to City Council in December.

CURRENT YEAR BUDGET IMPACTS:

The obvious budgetary impacts will be in terms of staff commitments to implement the Strategy, as it is predictable that some amount of staff time will be consumed in this implementation effort. When the work plans have been completed by the City Manager and Planning Director, a more complete understanding of the budgetary impacts will be possible.

FINANCIAL REVIEW / COMMENTS:

Reviewed by: JO Date: 8/10/12
No financial impacts.

LEGAL REVIEW / COMMENT:

Reviewed by: _____ Date: _____

COMMUNITY INVOLVEMENT PROCESS:

The preparation of the Economic Development Strategy has involved a significant public outreach and involvement effort. This started with the appointment of an Economic Development Advisory Committee (and alternates) with a diverse background. The Committee met five times over the course of six months and all of those meetings were open to the public. In fact, members of the public who attended those meetings were regularly invited to contribute their thoughts.

The central opportunity for public participation was the Economic Development Summit, held in May. Over 60 people attended and many more have watched the video of the Summit on Local Access or the internet.

More than 40 people took part in focus group discussions about Economic Development in Wilsonville, and many diverse opinions were expressed.

Numerous people have contributed comments via email and through the electronic survey conducted following the Summit. Literally hundreds of local residents responded to the community survey noted above, and those responses have helped to shape the Economic Development Strategy.

POTENTIAL IMPACTS or BENEFIT TO THE COMMUNITY:

Given the focus on maintaining Wilsonville's quality of life throughout this economic development effort, there is no reason to assume that the implementation of the Economic Development Strategy will have any adverse effects on the community. Probable outcomes include increased local employment opportunities and a greater share of property taxes being borne by the owners of commercial and industrial lands which undergo increased private investment. Those changes will tend to benefit the community overall.

ALTERNATIVES:

In drafting the Economic Development Strategy, the City's Economic Development Advisory Committee considered more than 40 possible "actions" or implementation measures. They successfully narrowed the list to a total of twelve actions in six categories (please see page 2 of the Summary document).

In terms of alternatives to the implementation of the proposed Economic Development Strategy, there are numerous choices, including rejecting the entire effort and having the City continue without a strategy to deal with economic development. The "no action" alternative should always be considered. However, considering the amount of community interest in this subject, it does not appear to be realistic for the City to take no action on the proposed Strategy.

The City Council could also choose to modify some part of the Strategy, while retaining the remainder. Given the discussion at the August 6 work session, that does not appear to be the desired course of action.

CITY MANAGER COMMENT:

ATTACHMENTS

- A. Resolution No. 2376
- B. EOA Update, July 2012, by FCS Group
- C. Strategy Summary, August 2012, by ECONorthwest
- D. Economic Development Strategy, August 2012, by ECONorthwest

RESOLUTION NO. 2376

A RESOLUTION OF THE WILSONVILLE CITY COUNCIL, ADOPTING THE WILSONVILLE ECONOMIC DEVELOPMENT STRATEGY OF 2012

WHEREAS, the City of Wilsonville has a successful history of recruiting and retaining businesses that support the community in a variety of ways and add to the overall quality of life; and

WHEREAS, the City Council, having recognized the importance of continued economic vitality, supported the recommendation of the City Manager to hire consulting economists to update the City's 2008 Economic Opportunity Analysis (EOA) and to prepare an Economic Development Strategy to guide the City's efforts to improve the local economy; and

WHEREAS, an Economic Development Advisory Committee (EDAC) drawn from volunteers of the business and residential communities worked with the staff and consultants in preparing the Economic Development Strategy; and

WHEREAS, the EDAC met five times over the course of six months and also sponsored focus group meetings and a community-wide Economic Development Summit; and

WHEREAS, the City undertook a thorough public involvement process including public meetings, a community-wide survey, and an electronic survey to seek public input in this process; and

WHEREAS, after considering the public input and advice of consultants, the EDAC recommended that the City Council adopt and implement the Economic Development Strategy; and

WHEREAS, the implementation of the Economic Development Strategy will, to a certain extent, be an iterative process that will occur over time, requiring the staff and numerous citizen volunteers to coordinate their continuing efforts; and

WHEREAS, one or more citizen task forces will need to be appointed, as envisioned in the Economic Development Strategy, to define the characteristics of businesses that will be of greatest community benefit; and to determine what sorts of incentives, and under what

circumstances, the community would be willing to provide to support and encourage the retention, expansion or recruitment of such businesses through incentives; and

WHEREAS, the City's Planning Commission, being well-versed on the City's Comprehensive Plan and implementing ordinances is the appropriate body to take up potential amendments to the Comprehensive Plan and Ordinances; and

WHEREAS, the Economic Opportunity Analysis is a required subset of the Comprehensive Plan, a review will be needed to determine whether any parts of the new EOA update will need to be formally adopted as amendments to the Comprehensive Plan; and

WHEREAS, the staff recommends that the City Council approve this Resolution to begin implementing the Economic Development Strategy of 2012.

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

1. Based on the above recitals, which are incorporated herein, the City Council, thanks and commends the members and alternate members of the Economic Development Advisory Committee for their work on the Economic Development Strategy; and
2. The City Manager is directed to establish one or more task forces as necessary to examine in greater detail and make recommendations to the City Council on two issues identified, but unresolved, during the Economic Development Advisory Committee's creation of the Economic Development Strategy, including:
 - a. Should the City identify specific business sectors for retention/expansion or recruitment to Wilsonville; and if so, which business sectors? The task force should define the characteristics of businesses that will be of greatest community benefit and identify those business sectors matching the desire characteristics.
 - b. "Inducement Incentives": Should the City utilize financial incentives to retain or recruit specific business sectors as identified for "Targeted Retention and Recruitment." The task force should decide if incentives are recommended for

“Targeted Retention and Recruitment,” and if so, what funding source(s) would be most appropriate and why? and

3. The City Planning Commission is hereby requested to work with the Planning Director in preparing a work plan for the implementation of any parts of the Economic Development Strategy involving changes to the City's Comprehensive Plan and implementing ordinances, including provisions of the Economic Opportunity Analysis; and
4. The City Manager is directed to return to the City Council at the Manager's earliest reasonable opportunity with a draft work plan for the full implementation of the Economic Development Strategy; and
5. This Resolution is effective upon adoption.

ADOPTED by the Wilsonville City Council at a regular meeting on August 20, 2012 and filed with the Wilsonville City Recorder this date.

TIM KNAPP, MAYOR

ATTEST:

Sandra C. King, City Recorder, MMC

SUMMARY OF VOTES:

Mayor Knapp - ____

Council President Núñez - ____

Councilor Goddard - ____

Councilor Starr - ____

Adopted August 20, 2012 by
Resolution No. 2376



City of
WILSONVILLE
OREGON

Final Draft ECONOMIC OPPORTUNITIES ANALYSIS (EOA) UPDATE



July 2012

ACKNOWLEDGEMENTS

This report was led by the City of Wilsonville, with technical support by FCS GROUP. We sincerely appreciate all the valuable input provided by City staff, city officials, planning commissioners, and local community and business stakeholders.

Wilsonville Mayor and City Councilors

- ◆ Mayor Tim Knapp
- ◆ Council President Celia Nunez
- ◆ Councilor Scott Starr (EDAC Co-Chair)
- ◆ Councilor Richard Goddard
- ◆ Former Councilor Steve Hurst (EDAC Co-Chair)

Wilsonville Planning Commission

- ◆ Ben Altman – Chair
- ◆ Eric Postma – Vice Chair
- ◆ Al Levit – Committee for Citizen Involvement (CCI) Chair
- ◆ Marta McGuire – CCI Vice Chair
- ◆ Amy Dvorak
- ◆ Peter Hurley
- ◆ Ray Phelps

Wilsonville Economic Development Advisory Committee (EDAC)

- ◆ Amy Dvorak, Planning Commission member
- ◆ Ben Altman, Past President, Wilsonville Chamber of Commerce
- ◆ Brenner Daniels, Investment Advisor, Holland Partners Group
- ◆ Clyde Holland, CEO, Holland Partners Group
- ◆ Crag Olson, Sr. Director/Site Manager, Rockwell Collins
- ◆ Dr. Chris Maples, President, Oregon Institute of Technology
- ◆ Gale Lasko, General Manager, Lamb's Wilsonville Thriftway
- ◆ Lita Colligan, Assoc. V.P./Strategic Partnerships, Oregon Institute of Technology
- ◆ Lonnie Gieber, Budget Committee member
- ◆ Nancy Sage, V.P./Sales, Xzeres Wind Corporation
- ◆ Patrick Croasdaile, Marketing Specialist, Xzeres Wind Corporation
- ◆ Marta McGuire, Planning Commission & Committee for Citizen Involvement member
- ◆ Ray Phelps, Past-President, Wilsonville Chamber of Commerce
- ◆ Thomas Garnier, President, SSI Shredding Systems

Wilsonville Economic Development staff

- ◆ Bryan Cosgrove, City Manager
- ◆ Mark Ottenad, Public/Government Affairs Director
- ◆ Kristen Retherford, Urban Renewal Manager
- ◆ Stephan Lashbrook, Transit Director
- ◆ Chris Neamtzu, Planning Director
- ◆ Daniel Stark, GIS Manager

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SECTION I: INTRODUCTION

The Wilsonville Economic Opportunities Analysis (EOA) provides a basis for the City of Wilsonville (City) to document current trends and adopt local policies and actions for the future. The overall intent of this 2012 EOA update and the local Economic Development Strategy is to refine the city's economic vision and development objectives in a manner that optimizes desired short- and long-term development for Wilsonville's citizens, workers, employers and visitors.

A. EOA REQUIREMENTS

The City of Wilsonville's current EOA was prepared in 2007 and adopted in early 2008, and remains in effect for compliance with Oregon Statewide Planning Goal 9. The 2008 EOA was based on market trends and statistics (population and job growth projections, market demands, land supply, etc.) that existed prior to the recent "Great Recession." The City Council initiated this 2012 EOA update in recognition that national and regional economic environments have dramatically changed, and local economic conditions are being impacted by major business closures (Joe's Sporting Goods, Hollywood Video, etc.) and reductions in vacant land from new developments (Fred Meyer and Old Town Square, Coca Cola bottling plant, Mentor Graphics data center, etc.).

This EOA update provides Wilsonville with the opportunity to address the requirements of Goal 9 (Economic Development, Oregon Administrative Rules [OAR] 660-009) that mandates cities periodically review and update the following:

- ◆ Local vision for strengthening local economies through the adoption of local economic policies that include community economic development objectives (CEDOs).
- ◆ Local urban growth requirements (land needs) for providing adequate land needed to accommodate 20-year employment growth forecasts.

More specifically, this EOA includes an analysis of the following:

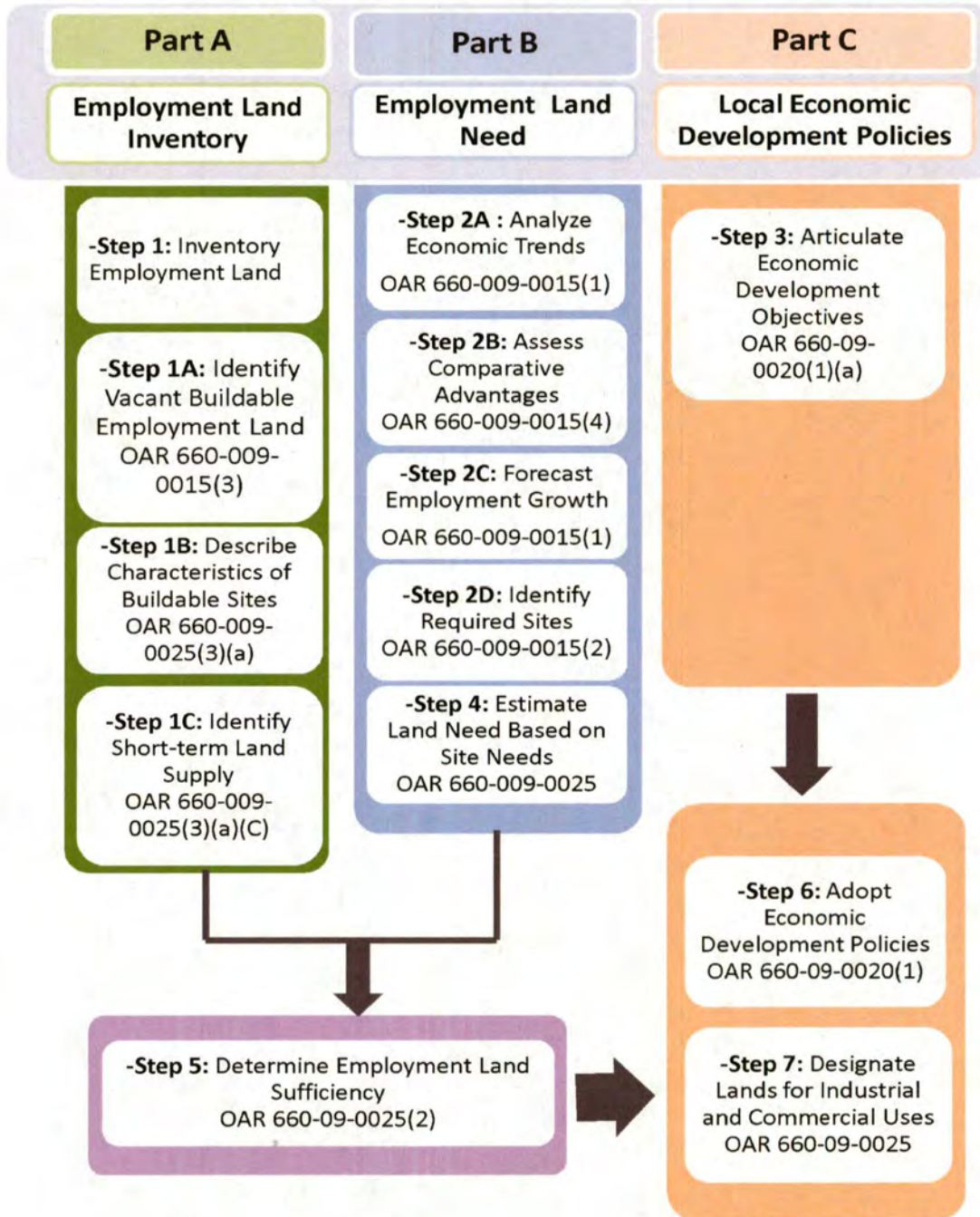
- A current analysis of vacant and part-vacant buildable lands zoned or planned to accommodate job growth;
- Adjustments to land needs that take into account current vacant building floor area;
- Analysis of long-term growth trends using Metro's latest growth forecasts;
- Current evaluation of emerging market trends;
- Summary of potential economic development policies and actions that should be considered as the City prepares a more detailed Economic Development Strategy (now underway).

B. METHODOLOGY AND APPROACH

Exhibit 1 illustrates the technical and political approach used for the Wilsonville EOA and related steps. This approach adheres to the Department of Land Conservation and Development (DLCD)

Goal 9 administrative rule, and the supporting OAR 660 guidance, and other supporting guidance provided by the *DLCD Industrial & Other Employment Lands Analysis Guidebook (2005)*, and the *Economic Development and Employment Land Planning Guidebook (July 2010)*.

Exhibit 1. Wilsonville EOA Methodology and Approach



SECTION II: BUILDABLE LAND ANALYSIS

Wilsonville planning and GIS staff members provided an inventory and evaluation of the existing supply of vacant and part-vacant buildable employment zoned land within the Wilsonville city limits and surrounding unincorporated portions of Washington County and Clackamas County. In accordance with OAR 660-009-0015(3) and OAR 660-009-0025(3)(a)(C), the Wilsonville EOA includes a current buildable land inventory with current land use development characteristics. **Appendix A** contains a map of the current vacant and part-vacant land inventory within the City of Wilsonville.

A. BUILDABLE LAND INVENTORY (BLI) METHODOLOGY

The buildable land inventory (BLI) analysis focused on the land use classifications that support employment uses, including commercial, employment, industrial, and mixed-use zones. The subsequent BLI analysis includes the zone classifications listed in **Exhibit 2**, and the EOA includes an aggregate analysis of land needs for three general land use classifications: commercial, employment/mixed-use, and industrial/institutional/other.

Exhibit 2. Existing Employment Zone Classifications in Wilsonville Area

Zoning Classification	General Classification Assignment
V – Village Commercial	Commercial (retail/office)
PDCTC – Planned Commercial Town Center	Commercial (retail/office)
PDC – Planned Commercial	Commercial (retail/office)
PDI – Planned Industrial Development	Industrial
RAHI – Rural Area Holding – Industrial	Industrial

The BLI analysis includes existing vacant and part vacant (sub-dividable) tax lots with adjustments made to deduct any current building and related parking development. The GIS analysis contains all significant environmental constraints to estimate buildable land area within the Wilsonville area. The buildable land area was derived by deducting environmental features that would constrain the amount of potential site development on vacant and part vacant areas. This analysis calculated the environmental constraints for each site using estimates based on the following:

- ◆ Environmentally constrained areas (waterways, wetlands, riparian buffers);
- ◆ Slopes over 10 percent for industrial zones;
- ◆ Slopes over 25 percent for other land use zones; and
- ◆ Other known site development constraints identified by City or Others (i.e., market pricing constraints and lack of road, water or sewer infrastructure).
- ◆ Existing buildings and parking areas were removed from the part-vacant land inventory (and only sites with over 0.5 acres in net buildable land areas are reflected as part-vacant lands).

The City’s community development and public works staff conducted an additional infrastructure analysis to ascertain known infrastructure conditions and related capacity constraints (if any) to providing adequate transportation, water, sewer, and stormwater requirements associated with future development. In accordance with OAR 660-009-025(3)(a)(C), City staff also provided estimated time frames and preliminary capital cost estimates for planned infrastructure improvements.

B. LONG-TERM EMPLOYMENT LAND INVENTORY

The existing vacant and part vacant land inventory for Wilsonville includes 53 tax lots with a total buildable land area of 194.7 buildable acres, as indicated in **Exhibit 3**. The City’s vacant land supply consists of 10 very small (less than 1 acre) tax lots, and 21 tax lots between 1 to 5 acres in size. The larger tax lots include 10 lots between 5 to 10 acres (66.2 acres total) and 2 tax lots over 10 acres in size (60.3 acres total). All of the land area within the City of Wilsonville is considered to be “development ready” with the exception of the 32-acre Elligsen parcel, which may be subject to market pricing constraints (where the owner is reported to be asking a land sales price that is higher than what the RAHI zone would likely support for many years).¹

Exhibit 3. Existing Vacant and Part-Vacant Lands by Parcel Size and General Zone Classification, Within City of Wilsonville

General Land Use Classification	0.5 to 1 acre		1 to 2 acres		2 to 5 acres		5 to 10 acres		10 or more acres		Total Gross Buildable	
	Tax lots	acres	Tax lots	acres	Tax lots	acres	Tax lots	acres	Tax lots	acres	Tax lots	acres
Commercial (V, PDCTC, PDC)	5	3.4	6	7.6	4	11.6	1	6.7	0	0	16	29.3
Industrial (PDI, RAHI)	5	3.5	13	16.7	8	24.9	9	59.5	2	60.8	37	165.4
Total	10	7.7	19	24.3	12	36.5	10	66.2	2	60.8	53	194.7

Source: City of Wilsonville estimates as of April 4, 2012.

In addition to the land area inside the City of Wilsonville, the City plans to provide urban services to the Coffee Creek Master Plan Area (located adjacent to the NW portion of the city), as well as a large portion of the Basalt Creek Plan Area (located north of the Coffee Creek Master Plan Area).

According to the Coffee Creek Master Plan and a follow-up study conducted by FCS GROUP and city staff, the Coffee Creek Master Plan Area contains approximately 187 gross acres of land area (174 net acres), of which 52 acres are considered buildable within the short-term (1-4 years) and 134.8 acres is deemed to be in the long-term (5-20 year land supply) category, based on the general timing and expectation for providing adequate public infrastructure (roads, water, sewer, and storm water facilities).

Preliminary estimates by Metro indicate that the southern portion of the Basalt Creek Plan Area contains approximately 349 acres, and is to be planned to accommodate a mix of employment and housing development over the long-term (4-20 year land supply). The concept plan for the Basalt Creek Plan Area is likely to be conducted over the next few years. Once complete, the concept plan will provide better estimates of potential buildable acres, development/land uses, and the public infrastructure facilities and costs required to serve this area.

¹ This conclusion is based on findings presented in a draft report titled *Regional Industrial Lands Inventory Findings*, October 27, 2011, prepared by Group McKenzie et. al.

C. SHORT-TERM EMPLOYMENT LAND INVENTORY

In addition to the long-term land supply, OAR 660-009-0005 also requires the identification of a short-term supply of land that is ready for construction within one year of an application of a building permit or request for a service extension.” OAR 660-009-0025 also requires that cities must provide “at least 25 percent of the total land supply within the urban growth boundary designated for industrial and other employment uses as short-term supply.”

This EOA considers all vacant land to be within the “short-term” land inventory if: adequate public facilities are currently in place or are adjacent to a site; or the site can be annexed and provided within adequate public facilities within 4 years (by end of year 2016); and no other development constraints are known to exist.

In Wilsonville’s case, all of the land supply currently included within the City limits, with the possible exception of the 32-acre “Elligsen parcel” is considered to be within the short-term supply category. Therefore, the City has existing roads, water, sewer, and other infrastructure facilities appropriately sized to handle about 133 acres of industrial development, and 29 acres of commercial (retail and office) development on the vacant (and part vacant) tax lots in Wilsonville, excluding the Elligsen parcel and the adjacent Coffee Creek Mater Plan Area (which likely has about 52 acres of land area that could be utilized for industrial development within 4 years if adequate public infrastructure is provided).

With approximately 162 vacant unconstrained acres of buildable industrial, employment, and commercial land area in the City, the commercial and industrial properties clearly meet the statutory requirements for short-term land supply. However, the fact that over 42% of Wilsonville’s remaining unconstrained land supply is contained in tax lots smaller than 5 acres, there may be limited opportunities for major industrial employers to locate into Wilsonville in the future.

In addition to documenting existing vacant and buildable land area within the Wilsonville area, the City also considered the development potential within the adjacent Coffee Creek Master Plan Area. This area contains approximately 174 developable acres of industrial land area, and is expected to accommodate about 1,800 jobs at build-out. A preliminary phasing plan for the Coffee Creek Master Plan Area includes approximately 50+/- acres of land area that could be served with adequate public facilities over the next 4 years.²

² *Analysis of Coffee Creek land supply based on City of Wilsonville public works staff estimates of land area contained in phases 1A, 1B, and 1C of the Coffee Creek Master Plan Area, as documented in the Coffee Creek Funding and Marketing Plan Memorandum from FCS GROUP to City of Wilsonville, dated April 5, 2011.*

SECTION III: EMPLOYMENT TRENDS

This section includes an analysis of economic trends and local competitive advantages to prepare employment growth forecasts for the Wilsonville city limits in accordance with OAR 660-009-0015(1-4). Local economic development visions, goals, and objectives were also considered in this process to inform the growth forecast scenarios.

A. EMPLOYMENT TRENDS ANALYSIS

FCS GROUP conducted an economic overview and real estate market analysis of office, commercial retail, industrial, and public government space development for the Wilsonville area. This analysis focused on the expected level of demand for new commercial, industrial, and public development, and related gross buildable land needs over the next 20 years (2012 to 2032).

The U.S. and Oregon economy are currently recovering from an 18-month economic recession that began in December 2007 and officially ended in June 2008, according to the National Bureau of Economic Research. The recent “Great Recession” is the longest on record since 1939 and has resulted in an economic slowdown across the U.S.

As of 2012, moderate economic expansion is occurring nationally and in Oregon. According to the U.S. Bureau of Economic Analysis, real Gross Domestic Product (GDP is the measure of the value of all goods and services produced annually) increased in 2011 at an annual rate of 1.7%; and increased at an annual rate of 3.0% in 2010.

The future GDP outlook is more promising. According to January 2012 projections by the Federal Reserve Bank, national GDP is expected to grow by over 2.2% in 2012, and by over 2.8% in 2013 and 2014. A comparison of GDP and Consumer Price Index (CPI) trends and a 2013 forecast for global developing and developed counties is provided in **Exhibit 4**.

Oregon’s economic growth is tempered by relatively high rates of unemployment and under-employment. Oregon posted a year-over-year overall job gain of 17,800 between December 2010 and December 2011. At the same time, the state’s seasonally adjusted unemployment rate fell from 10.6% in December 2010 to 8.9% in December 2011 (compared to 8.5% for the U.S.). Overall unemployment rates the greater Portland Region have been higher than the state average with 9.9% unemployment in December 2011, which was more favorable than 11.8% recorded one year prior. It should be noted that Oregon is also experiencing a high level of “under-employment” which is not reflected in these data trends. Fortunately, it appears that the Oregon and the Portland MSA economies are now undergoing a slow economic recovery.

Exhibit 4. GDP and CPI Comparisons, Year-over-Year Change

	GDP			CPI		
	2011	2012	2013	2011	2012	2013
Global (PPP weights)	3.5%	3.2%	3.7%	5.4%	4.2%	4.1%
Global (Market Exchange Rates)	2.4%	2.0%	2.5%	n/a	n/a	n/a
Advanced Economies ¹	1.5%	1.5%	2.1%	2.9%	1.7%	1.5%
United States	1.7%	2.0%	1.9%	3.2%	2.0%	2.0%
Eurozone	1.5%	-0.1%	1.8%	2.7%	1.7%	1.2%
United Kingdom	0.9%	0.8%	1.7%	4.5%	2.1%	1.6%
Japan	-0.2%	2.0%	1.5%	-0.2%	-0.1%	0.1%
Korea	3.6%	3.7%	3.7%	4.0%	3.4%	3.1%
Canada	2.3%	2.3%	3.0%	2.9%	2.2%	2.1%
Developing Economies ¹	5.9%	5.3%	5.7%	8.3%	7.0%	7.1%
China	9.2%	8.2%	8.6%	5.5%	3.6%	3.7%
India	7.3%	7.1%	7.7%	9.0%	7.7%	7.9%
Mexico	4.1%	4.3%	4.5%	3.3%	4.9%	5.3%
Brazil	3.0%	3.3%	4.0%	6.6%	5.5%	5.2%
Russia	4.1%	3.2%	3.0%	8.6%	6.7%	6.6%

Forecast as of: December 7, 2011

¹Aggregated Using PPP Weights

Source: Wells Fargo Bank.

In Oregon, state economists are predicting a continued upturn in the short term, although the Oregon Office of Economic Analysis calls it “a relatively, jobless” recovery” with employment growing slowly at about 2.0 percent in 2012. The Oregon economy should experience more rapid growth than the nation as a whole, but this is not expected to generate a corresponding rise in per capita personal income before 2017, since any income gains will be largely offset by increases in the state population.

Population levels continue to increase in both Oregon and Wilsonville due to population migration patterns, increases in immigrant population levels, and natural population increases. Population in Wilsonville increased to 19,509 residents in 2010, up from 13,991 residents in 2000 (U.S. Census). The average annual growth rate (AAGR) for population exceeded that of the county, state, or nation with a 3.4 percent average annual growth between 2000 and 2010 (see Exhibit 5).

For comparison, the population of the Portland-Beaverton-Vancouver Primary Metropolitan Statistical Area (PMSA) increased from 1,928,000 to 2,185,000 between 2000 and 2008, a 1.58 percent annual growth rate. According to Metro, the regional government, PMSA population is forecast to add between 346,500 and 467,300 people over the next 10 years.³

³ The Portland-Beaverton-Vancouver Primary Metropolitan Statistical Area (PMSA) consists of seven counties, including: Clackamas, Columbia, Multnomah, Washington and Yamhill (Oregon), and Clark and Skamania Counties (Washington).

Exhibit 5. Population Estimates, 2000 and 2010

Area	April 1, 2000	April 1, 2010	Compound Annual Growth Rate
Wilsonville			
Population	13,991	19,509	3.4%
Occupied housing units	5,891	7,859	2.9%
Average household size	2.4	2.5	0.4%
Clackamas County			
Population	338,391	375,992	1.1%
Occupied housing units	127,054	145,790	1.4%
Average household size	2.7	2.6	-0.3%
Washington County			
Population	445,342	529,710	1.8%
Occupied housing units	168,100	200,934	1.8%
Average household size	2.6	2.6	0.0%
Oregon			
Population	3,421,399	3,831,074	1.1%
Occupied housing units	1,333,723	1,518,938	1.3%
Average household size	2.6	2.5	-0.2%
U. S. A.			
Population	281,421,906	308,745,538	0.9%
Occupied housing units	105,480,101	116,716,292	1.0%
Average household size	2.7	2.6	-0.1%

Source: U.S. Census Bureau.

Employment levels (as measured by workers covered by unemployment insurance) within the City of Wilsonville increased measurably between 2002 and 2006 then dipped slightly. As of 2010, the Oregon Employment Department estimated that there were 18,478 “covered workers” in Wilsonville down from 19,935 workers in 2006. **While the number of “industrial” jobs in Wilsonville declined over the 2002 to 2010 time frame, jobs in other sectors, particularly retail and services, have been increasing in recent years** (see Exhibit 6).

Exhibit 6. Employment Trends, City of Wilsonville, 2002 to 2010

Employment Classification	2002	2006	2010	2002 to 2010 change	
				Number	Percent
Retail/Commercial	2,201	4,648	2,440	239	11%
Services	5,347	4,447	6,065	718	13%
Industrial	9,265	9,288	8,789	(476)	-5%
Government/Education	541	1,552	1,184	643	119%
Total	17,354	19,935	18,478	1,124	6%

Source: Oregon Employment Dept., Quarterly Covered Employment and Wages statistics.

At the end of 2010, the top private employers in Wilsonville included several large high tech companies (e.g., Xerox, Mentor Graphics, Tyco Electronics, Rockwell Collins, FLIR Systems), as well wholesale trade companies (Sysco) and health services companies (Infinity Rehab and

Avamere). As indicated in **Exhibit 7**, there have been several recent developments that have positively and negatively impacted job growth in the City of Wilsonville, which are discussed in Section III-C.

Exhibit7. Top Employers in Wilsonville, 2010

Employer	Industry Based on 3-Digit NAICS	Employees
Xerox Corporation	Computer and electronic product manufacturing	1,001-2,000
Mentor Graphics	Professional, scientific, and technical services	1,001-2,000
Coffee Creek Correctional Facility	Justice, public order, and safety activities	501-1,000
Tyco Electronics Corporation	Computer and electronic product manufacturing	501-1,000
Sysco	Merchant wholesalers, nondurable goods	501-1,000
Rockwell Collins Aerospace	Computer and electronic product manufacturing	251-500
Infinity Rehab	Ambulatory health care services	251-500
Flir Systems, Inc.	Computer and electronic product manufacturing	251-500
Avamere	Ambulatory health care services	251-500

Source: Oregon Employment Department.

Given the presence of Xerox, Mentor Graphics and other high tech firms, the top industry sectors (sorted by 3-digit North American Industrial Classification) in Wilsonville include: computer product manufacturing; and professional, scientific and technical services. Wholesale trade makes up the next leading sector, followed by health services, specialty trade contracts, and food services. As indicated in **Exhibit 8**, other leading sectors in Wilsonville include: administrative and support services; justice and public order (includes Coffee Creek Correctional Facility); and educational services (dominated by local public school district employees).

Exhibit8. Top Industry Sector Classifications in Wilsonville, 2010

3-Digit NAICS	Industry	Employees
334	Computer and electronic product manufacturing	2,914
541	Professional, scientific, and technical services	1,525
424	Merchant wholesalers, nondurable goods	1,125
423	Merchant wholesalers, durable goods	1,106
621	Ambulatory health care services	845
238	Specialty trade contractors	795
722	Food services and drinking places	772
561	Administrative and support services	748
922	Justice, public order, and safety activities	541
611	Educational services	512

Source: Oregon Employment Department.

Current employment estimates for Wilsonville were derived using the December 2010 Quarterly Census of Employment and Wage (QCEW) estimates by the Oregon Employment Department combined with Metro estimates of employment for areas immediately adjacent to the City. Current 2012 employment estimates were derived based on trends in growth for employment sectors in Washington and Clackamas counties between December 2010 and January 2012. FCS GROUP applied these growth rates to 2010 job estimates and adjusted the estimates to account for recent developments, including the Old Town Center to reflect local trends. As indicated in **Exhibit 9**, it is estimated that there were approximately 19,123 jobs in Wilsonville as of January 2012. Most of the job growth since 2010 has been in the retail/commercial and industrial sectors.

Exhibit 9. Estimated Employment in Wilsonville, January 2012

General Job Classification	2010 Est. by Metro ¹	2010 Est. by Oregon Emp. Dept. ²	2010-2012 Est. Change in Jobs ³	2012 Estimate ³
Retail/Commercial	2,489	2,440	265	2,705
Service/Office	6,105	6,065	122	6,187
Industrial	8,847	8,789	266	9,055
Government/Education	1,192	1,184	(8)	1,176
Total	18,632	18,478	645	19,123

Notes:

¹ Estimate derived from Metro gamma forecast with allocations among job classifications based on Oregon Emp. Dept. covered workforce estimates for Wilsonville.

² Estimate based on QCEW statistics provided by Oregon Employment Department.

³ Estimate derived from changes in current employment statistics for WA and Clackamas Counties between Dec. 2010 and Jan. 2012.

B. WILSONVILLE EMPLOYMENT GROWTH FORECASTS

Metro prepares forecasts for households and employment for all local jurisdictions in the Metro Urban Growth Planning Area. The most recently *adopted* Metro 2025 growth forecast (referred to as the Metroscope Generation 2.3 model), included a forecast period from 2005 to 2025. Those forecasts were used as a basis for the current 2008 Wilsonville EOA.

This 2012 EOA update utilizes the preliminary Metro “gamma” forecast for year 2025 (with year 2040 capacity forecasts). This Metro forecast is now being reviewed by local jurisdictions and is to be refined and adopted later this year by the Metro Council. As indicated in **Exhibit 10**, the current 2010 to 2025 Metro forecast anticipates that Wilsonville will add approximately 4,747 households and 9,105 jobs over the next 20-years. The Metro job growth forecast indicates that Wilsonville’s ratio of jobs to households will decline slightly from 2.11 jobs per household in 2010 to 2.04 by year 2025.

To assist the City of Wilsonville in evaluating the current Metro forecast, three employment growth forecast scenarios have been formulated for the Wilsonville EOA update:

- ◆ **Scenario A (Low Growth Scenario):** Assumes that the Metro 2025 job growth forecast will not be realized by year 2035 since the city may not have adequate funding to extend required public infrastructure (e.g., roads, water, and sewer main lines) to all portions of Coffee Creek and Basalt Creek planning areas for many years.
- ◆ **Scenario B (Medium Growth Scenario):** This scenario is generally consistent with the overall job growth forecast by Metro. The scenario job growth forecasts are consistent with Scenario A (low growth) for industrial and government/education sectors; and Scenario C (high growth) for retail and service sectors.
- ◆ **Scenario C (High Growth Scenario):** Assumes job growth is greater than the current Metro 2035 (extrapolated) growth forecast; and assumes build-out of Coffee Creek Master Plan area, and a portion of Basalt Creek Plan Area by year 2035.

Exhibit 10. Metro Household and Employment Forecast, 2010 to 2025

	2010 Metro Est.	2025 Metro Forecast	2010-2025 Change
Households			
Wilsonville City	7,407	9,190	1,783
Other City limits, East Emp. Area	557	582	25
Other City limits plus E. Coffee Ck.	18	18	0
Coffee Creek West	16	35	19
Basalt Creek Area	141	1,326	1,185
Other Adjacent Locations	711	2,446	1,735
Subtotal Wilsonville Area	8,850	13,597	4,747
Employment			
City of Wilsonville	11,296	16,869	5,573
Other City limits, East Emp. Area	3,999	4,455	456
Other City limits plus E. Coffee Ck.	1,778	2,822	1,044
Coffee Creek West	1,035	1,646	611
Basalt Creek Area	255	1,556	1,301
Other Adjacent Locations	269	389	120
Subtotal Wilsonville Area	18,632	27,737	9,105
Ratio of Jobs to Households			
Clackamas County	0.94	0.98	
Washington County	1.14	1.27	
Sub-region (2 counties)	1.06	1.15	
Wilsonville Area	2.11	2.04	

Source: preliminary MetroScope gamma forecast, February 2012.

The three job growth scenarios translate into net new employment growth forecasts over the 2012 to 2035 timeframe ranging from 8,614 jobs in the Low Growth Scenario; 10,669 jobs in the Medium Growth Scenario, and 13,398 jobs in the High Growth Scenario (see Exhibit 11).

Exhibit 11. Wilsonville Service Area Draft Employment Growth Forecasts, 2012 to 2035

General Job Classification	Low	Medium	High
Retail	554	958	958
Service/Office	3,038	4,688	4,688
Industrial	4,446	4,446	6,861
Government/Education	577	577	891
Total	8,614	10,669	13,398

Source: Low Forecast assumes Metro 2025 draft "gamma forecast" is realized by year 2035; High Forecast assumes growth assumes build-out of Wilsonville portion of Basalt Creek and Coffee Creek plan areas and other trends consistent with Metro "gamma forecast" assumptions; Medium Forecast is consistent with "High Forecast" for retail and service/office job growth, and assumes industrial and government/education growth consistent with the "Low Forecast."

C. OPPORTUNITIES AND CONSTRAINTS ANALYSIS

Current market trends regarding retail, office and industrial tenant absorption levels, existing vacancy rates, retail inflow/outflow, and input from state and regional economic development organizations are important factors to consider when evaluating the ability to achieve the low, medium, and high growth employment forecasts.

C1. Industrial Market Considerations

According to *CoStar*, the Portland region recorded positive overall industrial absorption levels during 2011, as average vacancy rates continued downward since 2010. Net absorption for the 4th quarter of 2011 totaled 1,054,869 SF for the 4-county market region (includes portions of Washington, Multnomah, Clackamas and Clark counties). Average industrial rental rates ended the year at \$5.92, and increase over the prior quarter.

Industrial market activity within the I-5 Corridor was positive with an overall absorption of 761,540 SF during 2011, of which Wilsonville accounted for over half of that amount with 419,354 SF of net absorption. As indicated in **Exhibits 12 and 13**, industrial vacancy rates remained relatively high in Wilsonville at 14.4% with about 1.15 million SF of floor area on the market, and over 90,000 SF was delivered or under construction by year end. Recent industrial projects in Wilsonville include 3 new buildings within the Wilsonville Road Business Park.

Recent developments since 2008 also include expansion at Rockwell Collins, a new Coca-Cola Bottling Plant and Georgia Pacific lease of the 275,000 SF former Joe’s Warehouse. Mentor Graphics is also constructing a new North American Data Center.

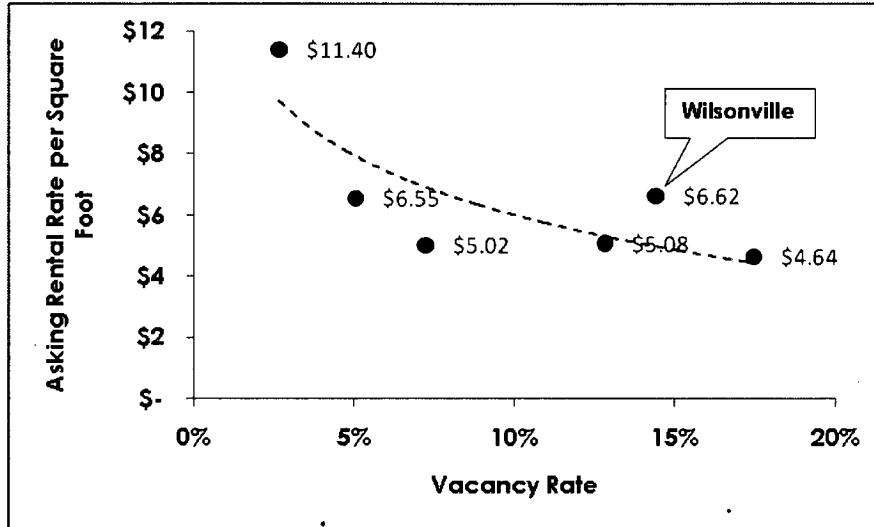
Wilsonville continues to attract new industrial tenants from around the region and the world. New tenants include SAM Medical Products (18 employees) and XZERES Wind Corporation (34 employees).

Exhibit 12. Industrial Market Activity in I-5 Corridor, 2011 (end of year)

Submarket	Rentable Area	Vacant Area	Vacancy Rate	2011 Net Absorption Area	Area Under Construction	Asking Rental Rate per Square Foot
Kruse Way	428,442	11,326	2.6%	-3,028	0	\$ 11.40
Lake Oswego/West Linn	1,206,869	154,686	12.8%	-6,798	0	\$ 5.08
Sherwood	1,512,830	264,054	17.5%	6,441	59,625	\$ 4.64
Tigard	6,686,720	336,856	5.0%	109,551	0	\$ 6.55
Tualatin	9,243,605	666,656	7.2%	236,020	165,400	\$ 5.02
Wilsonville	8,008,619	1,154,073	14.4%	419,354	90,798	\$ 6.62
	<u>27,087,085</u>	<u>2,587,651</u>	<u>9.6%</u>	<u>761,540</u>	<u>315,823</u>	

Sources: *CoStar Industrial Report, 2011, Portland Industrial Market*

Exhibit 13. Comparison of Industrial Lease and Vacancy Levels in I-5 Corridor, 2011 (end of year)



C2. Office Market Considerations

The office market in the Portland region also showed some improvement during 2011, after poor performance between 3rd quarter of 2008 and 2nd quarter of 2010. Average office vacant rates for the region fell to 10.4% at the end of 2011, and net absorption and rental rates increased over the preceding year.

As indicated in Exhibits 14 and 15, office market activity within the I-5 Corridor experienced a net absorption level of 126,687 SF during 2011, of which almost all was within the Wilsonville submarket. However, average vacancy rates within the I-5 Corridor remained relatively high at 17%, and Wilsonville was at 19.6% vacancy at year end.

Recent office development activity in Wilsonville included a new 2-level office building at 30485 SW Boones Ferry Road with 19,480 SF. Quoted rents at this new building are \$26.00 per SF, which is generally consistent with rent levels that support surface parking or a mix of surface and 2-level plaza parking configurations.⁴

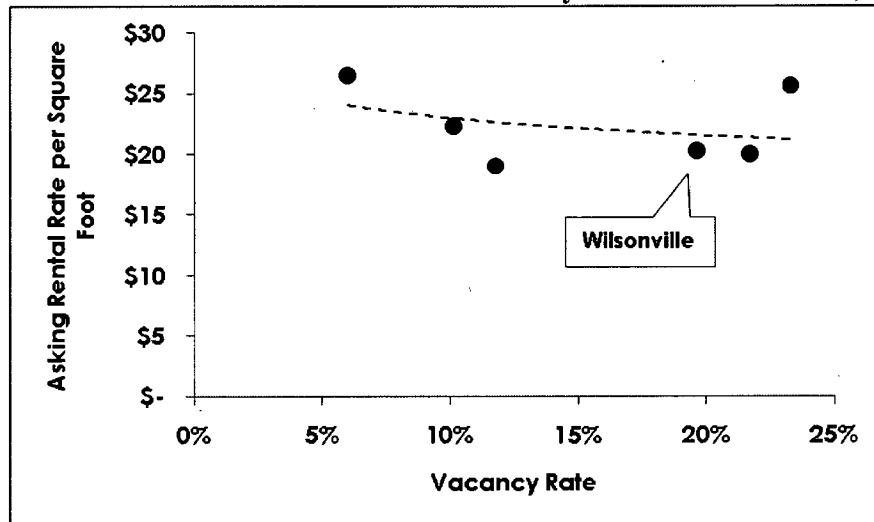
⁴ Development costs associated with 2-level parking plazas or above-ground parking structures are typically \$5,000 to \$15,000 higher per space than surface parking; and hence must generate about \$2.00 to \$6.50 more per square foot in annual rents to remain viable (or less with increases in building densities or reductions in parking demand).

Exhibit 14. Office Market Activity in I-5 Corridor, 2011 (end of year)

Submarket	Rentable Area	Vacant Area	Vacancy Rate	2011 Net Absorption Area	Area Under Construction	Asking Rental Rate per Square Foot
Kruse Way	2,757,943	642,991	23.3%	-72,464	0	\$ 25.62
Lake Oswego/West Linn	1,091,606	110,730	10.1%	13,859	0	\$ 22.30
Sherwood	158,223	9,485	6.0%	-35	20,594	\$ 26.48
Tigard	3,333,149	392,842	11.8%	65,210	11,500	\$ 19.00
Tualatin	1,238,607	269,236	21.7%	-3,654	24,000	\$ 20.01
Wilsonville	1,130,249	222,058	19.6%	123,771	19,480	\$ 20.31
	9,709,777	1,647,342	17.0%	126,687	75,574	

Sources: CoStar Office Report, 2011, Portland Office Market

Exhibit 15. Office Market Rents and Vacancy Rates in I-5 Corridor, 2011 (end of year)



C3. Retail Market Considerations

Wilsonville experienced significant retail growth during 2010 with the grand opening of the \$70 million, 262,000 SF Fred Meyer Old Town Square. This includes a new 145,000 SF Fred Meyer and 117,000 SF in other stores and mixed-use retail/multifamily housing. The commercial component is now almost 100% occupied (within 6 months of opening) and added approximately 350-400 permanent jobs (full and part-time jobs) and over 500 temporary construction-related jobs.

Prior to construction of the Fred Meyer Old Town Square, an analysis of retail sales inflow/outflow conditions within the City of Wilsonville, indicated that approximately 49% of the total retail sales in Wilsonville are derived from sales inflow (people living outside the City) and 51% of the retail sales are from local residents. Appendix B includes an analysis of retail sales inflow/outflow by store group type in 2010 (before Old Town Square opened). At that time, estimates by ESRI indicated that there was also nearly \$17 million in retail outflow (from local residents that purchase goods and services outside the city). A large portion of the retail sales outflow that existed in 2010 has likely been “captured” by the Fred Meyer Old Town Square.

In the future, as Wilsonville adds additional residents and aggregate income levels increase, new local-serving “neighborhood retail centers” could be supported within a short drive or convenient walk from emerging neighborhoods.

C4. Market Opportunities and Constraints

The overall preliminary findings from an opportunities and constraints analysis are summarized below.

Market Opportunities

- Proximity/visibility to I-5
- New I-5/Wilsonville Road Interchange with enhanced access
- Presence of established mix of international and regional employers
- Market success of recent industrial, office and retail developments
- Continued strong pace of housing development and increasing aggregate household income levels
- Planned employment center at Coffee Creek
- Employment site development opportunities (Coffee Creek, Basalt Creek, Elligsen parcel)
- Master planned industrial area (Coffee Creek)
- Large level of retail sales inflow
- Vacant industrial and office space (ready to accommodate new small and medium tenants)
- Rent levels for industrial and commercial buildings is rising
- New OIT campus planned
- Excellent local and regional transit service provided by SMART and WES Commuter Rail
- Adequate water capacity
- Planned sewer capacity

Market Constraints

- Limited I-5 connections (2 primary connections)
- Large lot industrial constraints (lacking infrastructure and/or pricing above market rates for sites over 10 acres in size).
- Very limited commercial zoned vacant land supply (with 16 tax lots less than 5 acres in size and one remaining vacant site between 6-7 acres in size).
- Corporate land banking by major employers.
- Limited established class A office locations.
- Lacking infrastructure (sewer and water main lines) to serve first phase of Coffee Creek Master Plan Area.
- Unknown cost to developers for future investments in Coffee Creek Master Plan Area. Need specific funding plan adopted to allay concerns over private and public return on investment.
- No adopted concept plan for Basalt Creek Master Plan area.
- Rent levels for office and retail do not currently support structured parking facilities.

It is recommended that this listing of market opportunities and constraints be refined with input from stakeholder groups during the development of the Wilsonville Economic Strategy.

D. TARGET BUSINESS CLUSTERS ANALYSIS

The business cluster analysis summarized in **Exhibit 16** identifies existing and emerging business sectors within the City of Wilsonville by their size and growth potential using their North American Industrial Classification System (NAICS) code. This code is used by the federal government to classify types of businesses for tax accounting and economic research purposes. The data used for the clusters analyses were derived from the OED wage and salary employment statistics for the year ending in 2010. The size of the bubbles in the following charts provides a relative comparison within each jurisdiction of the current location quotients (LQ) and the total direct wages paid to workers within each industry sector. LQs represent the propensity of an industry to locate in Wilsonville.

Exhibit 17 lists the top 20 existing business clusters within Wilsonville.

The clusters analysis classifies the existing business sectors in Wilsonville area into four general categories:

Industry Sectors with Large LQ/High Growth Potential (“Stars”)

- ◆ Wholesale Trade (durable and non-durable goods distributors)
- ◆ Wholesale Trade (agents and brokers)
- ◆ Specialty Trade Contractors

Industry Sectors with Small LQ/High Growth Potential (“Emerging”)

- ◆ Health Care Services
- ◆ Professional and Business Services
- ◆ Miscellaneous Services

Industry Sectors with Large LQ/Low Growth Potential (“Mature”)

- ◆ Computer and Electronic Component Manufacturing
- ◆ Non-metal Mineral Product Manufacturing
- ◆ Machinery Manufacturing
- ◆ Transportation & Warehousing
- ◆ Motor Vehicle & Parts Dealers

Industry Sectors with Small LQ/Low Growth Potential (“Challenged”)

- ◆ Government

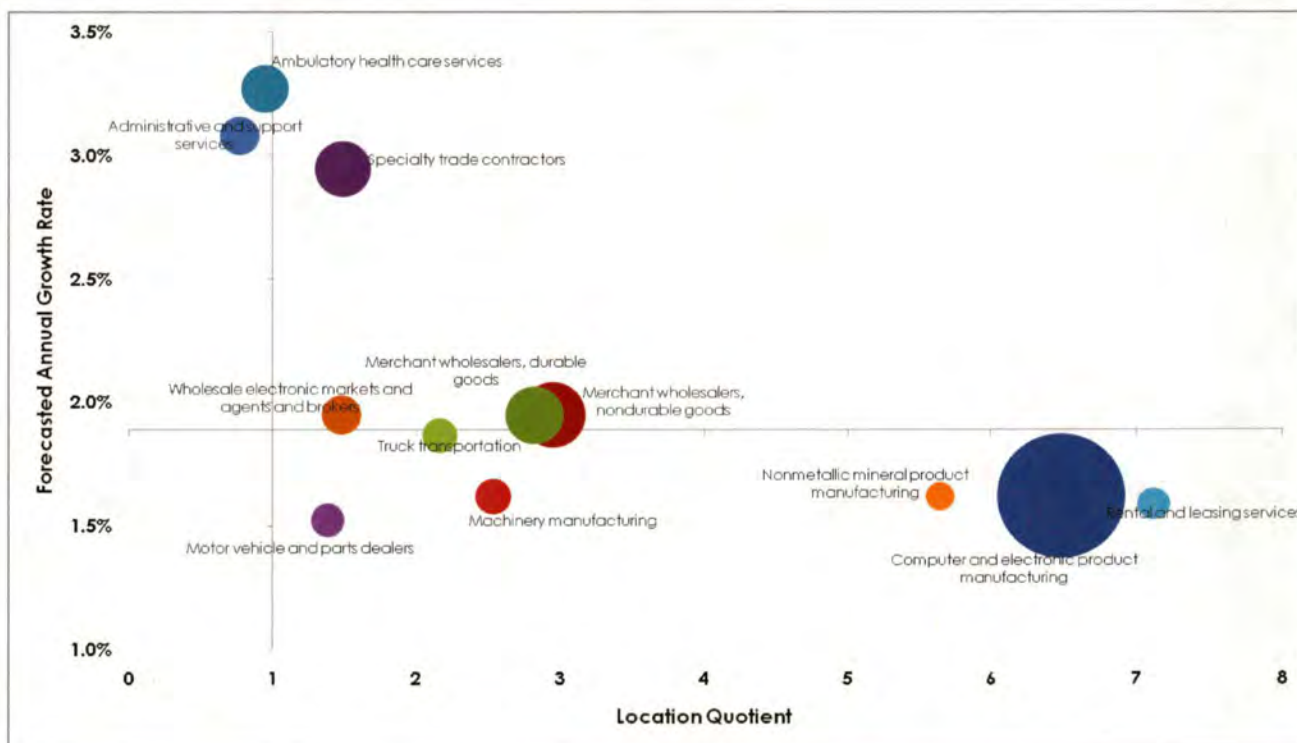
In addition to evaluating existing *local* business clusters, the City may also consider the expected *regional* growth in business sectors and emerging clusters. According to the Oregon Employment Department, the job sectors with the highest potential for new growth in the greater Portland metropolitan region include: health care; hotel/motel accommodations and food services; business administration and waste management; professional; scientific and technical service (such as computer science and engineering); state and local government; wholesale trade; finance and

insurance; retail trade; transportation; and utilities (includes warehousing, distribution and energy research, and private utilities).⁵

The manufacturing sectors with the greatest net new job growth potential in the greater Portland metropolitan region include: computer-related parts manufacturing; transportation equipment; other miscellaneous durable goods (such as solar panels); and miscellaneous non-durable goods (such as apparel research and design). Health-related medical devices and biomedical research, and organic food and beverage processing are also growing business sectors within the broader economy.

Focused marketing and business recruitment efforts are being made by the State of Oregon and regional economic development stakeholders to attract certain established and emerging business clusters. The business and industry clusters currently targeted by the Oregon Business Development Department, Portland Business Alliance, and the Portland Development Commission include advanced manufacturing; clean technology (with sustainability sub-clusters in green building, solar, and wind power); active wear/outdoor gear; and software.

Exhibit 16. Major Existing Clusters in Wilsonville, 2010



⁵ These emerging business clusters are documented in the regional WIRED (Workforce Innovation and Regional Economic Development, Global Development Strategy, prepared by FCS GROUP et.al, 2008.

Exhibit 17. Top 20 Clusters in Wilsonville, 2010

Rank	NAICS	Industry	Wilsonville Payroll	Location Quotient
1	491	Postal Services	\$ 1,481,809	18.60
2	532	Rental and leasing services	\$ 16,106,490	7.12
3	334	Computer and electronic product manufacturing	\$ 242,382,801	6.49
4	327	Nonmetallic mineral product manufacturing	\$ 13,162,171	5.64
5	533	Leassors of Nonfinancial Assets	\$ 1,091,813	5.22
6	443	Retail, electronics and appliances	\$ 7,900,039	3.24
7	326	Plastic materials and packaging manufacturing	\$ 6,375,437	3.09
8	424	Merchant wholesalers, nondurable goods	\$ 66,740,116	2.95
9	493	Warehousing and storage	\$ 11,249,911	2.87
10	423	Merchant wholesalers, durable goods	\$ 51,984,810	2.82
11	333	Machinery manufacturing	\$ 19,818,783	2.53
12	335	Appliance manufacturing	\$ 4,155,103	2.45
13	519	Information services	\$ 651,500	2.20
14	484	Truck transportation	\$ 18,745,219	2.16
15	221	Energy/power distribution	\$ 8,832,129	2.12
16	238	Specialty trade contractors	\$ 48,802,865	1.48
17	332	Hardware manufacturing	\$ 10,572,526	1.48
18	425	Wholesale electronic markets and agents and brokers	\$ 24,356,352	1.48
19	315	Apparel manufacturing	\$ 347,469	1.42
20	441	Motor vehicle and parts dealers	\$ 17,706,695	1.38

Recommended Target Clusters

In light of these findings, we recommend that Wilsonville focus on retaining and attracting a mix of existing and emerging business clusters that offer diverse employment opportunities. The current list of target industries that was adopted as part of the 2007 Wilsonville EOA includes:

- ◆ Light Manufacturing and Warehouse/Showroom Operations
- ◆ High-tech Manufacturing and Software Development
- ◆ Specialty Contractors and Construction Firms
- ◆ Creative Services (such as transportation logistics, legal services, management consulting, accounting, etc.).
- ◆ Sustainable Product Manufacturing and Distribution
- ◆ Health Care
- ◆ Secondary Education and Training (possibly in combination with OIT campus programs)

All of these clusters remain relatively strong or are beginning to emerge within the Wilsonville Area.

Potential additions or changes to the list of target clusters should be considered during the development of Wilsonville's economic strategy and could include clusters that focus on tourism, veterinary medicine, sports medicine and/or recreation, among others.

SECTION IV: EMPLOYMENT LAND NEEDS

OAR 660-009-0025 requires an analysis of 20-year land needs for employment growth in the Wilsonville service boundary along with attention to unique site needs based on the identified employment types. This analysis is intended to serve as a baseline preliminary forecast for the 2012 to 2035 time frame.

A. EMPLOYMENT SPACE NEEDS ANALYSIS

In order to forecast the demand for vacant employment land, the consultant first determined the amount of building floor area that would be required given the three job growth forecast scenarios described previously. Attention was given to actual recent development experience within the City of Wilsonville regarding approved and constructed commercial, office and industrial developments. The consultant utilized input from the City of Wilsonville's planning staff along with industry standards and Metro Urban Growth Report (December 2009) density assumptions to determine assumptions for converting employment growth into building types, and associated land needs by general zone classification (please refer to **Appendix C** for more detail).

Potential job growth in Wilsonville translates into new construction as well as opportunities to lease up existing vacant floor area, as well as redevelopment opportunities for outdated buildings. As indicated in **Exhibit 18**, the preliminary analysis indicates that the City of Wilsonville will require between 3,062,000 (low) and 4,767,000 (high) square feet of floor area in new construction on vacant lands to meet job growth expectations. In addition, we would expect a combination of refill and redevelopment to accommodate between 1,648,000 and 2,557,000 square feet of floor area demand over the 2012 to 2035 time frame.

After accounting for the level of expected redevelopment activity, the amount of vacant land demand in the Wilsonville service boundary for employment uses between 2012 and 2035 is expected to range from 234 acres (Low Scenario), 271 acres (Medium Scenario), and 364 acres (High Scenario). Preliminary estimates for vacant lands needs in Wilsonville service boundary by general land use zone classification are provided in **Exhibit 19**. Please refer to the **Appendix C** for more detailed methodology and supporting assumptions.

The actual amount and timing of new development will vary from year to year. The range in development forecasts reflects several issues:

- ◆ The ability to provide adequate infrastructure to service the Coffee Creek and Basalt Creek Planning areas.
- ◆ The ability to work with ODOT to fund and construct required transportation and infrastructure improvements (particularly within the North Wilsonville interchange area) that can accommodate new commercial and industrial development on vacant lands, particularly in the Basalt Creek Plan Area.

- ♦ The willingness of local property owners in areas adjacent to the city to opt for annexation or to pursue sale or development of their land holdings.

Exhibit 18. Wilsonville New Construction and Refill/Redevelopment Forecast by Building Type (floor area in square feet): 2012 to 2035

Wilsonville New Construction Forecast, 2012 to 2035*			
Building Type	Low	Medium	High
Office/Service	345,000	522,000	533,000
Government/Other	311,000	311,000	480,000
Flex/Business Park	781,000	899,000	1,212,000
General Industrial	1,050,000	1,033,000	1,623,000
Warehouse	192,000	208,000	301,000
Retail	383,000	618,000	618,000
Total SF Floor Area	3,062,000	3,591,000	4,767,000

Wilsonville Redevelopment/Refill Forecast, 2012 to 2035*			
Building Type	Low	Medium	High
Office/Service	230,000	348,000	356,000
Government/Other	35,000	35,000	53,000
Flex/Business Park	639,000	736,000	991,000
General Industrial	566,000	556,000	874,000
Warehouse	82,000	89,000	129,000
Retail	96,000	154,000	154,000
Total SF Floor Area	1,648,000	1,918,000	2,557,000

Source: forecast of building area requirements in floor area square feet based on analysis provided in Appendix C.

Exhibit 19. Wilsonville Vacant Land Need by General Land Use Zone Classification, 2012 to 2035 Forecast (buildable acres)

General Land Use Classification	Low	Medium	High
Commercial (primarily retail)	28	44	45
Office (primarily services)	21	33	34
Industrial/Other *	159	167	246
Government*	26	26	40
Total Acres (net buildable)	234	271	364

*Assumptions based on job growth shown in Exhibit 11, and local development density observations described in Appendix C; compiled by FCS GROUP. * Note, other excludes special sites for large uses, such as schools and parks.*

B. OVERALL EMPLOYMENT LAND NEED REQUIREMENTS

This EOA indicates that the existing Wilsonville service area contains an adequate short-term industrial and employment land supply to accommodate the forecasted level of employment growth that is expected to occur under all of the growth scenarios. However, long-term business demand and job growth will require new local land use policies and strategies to accommodate new industrial, office and commercial developments.

Commercial and Office Land Need Requirements

As indicated in **Exhibit 20**, with a long-term land demand forecast of 49 to 79 acres for commercial retail and office land needs, and an existing land supply of 29 acres of commercial (retail and office zoned land) inside the existing city limits, Wilsonville should explore new strategies to plan and annex appropriate locations for office and retail development.

The short-term supply should be adequate in meeting market demand. However, over the long-term, the City may need approximately 41 to 65 acres of additional land area for commercial and office development. This includes approximately 23 to 37 acres of land required for commercial (primarily retail development) and 18 to 28 acres required for office development.

Possible long-term strategies include completing master planning on adjacent planning areas, such as the southern portion of the Basalt Creek planning area for a combination of office, commercial and housing development. A portion of the Basalt Creek planning area will be needed to address Wilsonville’s long-term employment land need.

Long-term annexation requirements could also be tempered with more proactive redevelopment strategies inside the existing city limits in locations well-served by transit, such as around the WES Commuter Rail Station, and in the Wilsonville Town Center.

In light of the fact that the remaining land supply within the City of Wilsonville is primarily comprised of smaller tax lots (only one vacant commercial tax lot exists over 6 acres), **the Economic Strategy for the City of Wilsonville should explore whether the city desires to pursue strategies that support “special site” preferences for strategic uses, such as health care or corporate campuses or recreational uses that require sites greater than 6 acres in size.**

Exhibit 20. Commercial and Office Land Demand Forecast and Vacant Land Supply: 2012 to 2035

	Short-term (1-4 yrs)	Additional Long-term (5-23 yrs)	Total
Land Demand			
Commercial (primarily retail)	5 to 8	23 to 37	28 to 45
Office (primarily services)	4 to 6	18 to 28	21 to 34
Subtotal Demand	9 to 14	41 to 65	49 to 79
Land Supply			
Existing City Limits	29	--	29
Coffee Creek MP Area	0	0	0
Basalt Creek MP Area	0	41 to 65	41 to 65
Subtotal Supply	29	41 to 65	71 to 94
Prelim. Net Annexation Requirement	none	41 to 65	41 to 65

** primary locations for office include vacant parcels and redevelopment areas within Town Center as well portions of the 349-acre Basalt Creek Plan Area.*

Industrial and Other Land Need Requirements

As indicated in **Exhibit 21**, this EOA update indicates that the total long-term demand for industrial, government and other employment uses is expected to range from 185 to 286 acres. While the City appears to have a more than adequate short-term industrial/other land supply to meet demand, the long-term needs under a medium or high-growth scenario would require the City to fully serve all of the Coffee Creek Master Plan Area with adequate public facilities, which is consistent with the adopted Coffee Creek Master Plan.

It is recommended that the Economic Strategy for the City of Wilsonville consider whether special site requirements are needed over the long-term that would require additional land area to be annexed in locations such as a portion of the Basalt Creek Master Plan Area to accommodate large industrial uses that cannot be located on existing or planned industrial areas.

Exhibit 21. Industrial/Other Non-Commercial Land Demand Forecast and Vacant Land Supply: 2012 to 2035 (buildable acres)

	Short-term (1-4 yrs)	Additional Long-term (5-23 yrs)	Total
Land Demand			
Industrial/Other	28 to 43	131 to 203	159 to 246
Government	5 to 7	22 to 33	26 to 40
Subtotal Demand	33 to 50	153 to 236	185 to 286
Land Supply			
Existing City Limits	135	--	135
Coffee Creek MP Area	52	135	187
Basalt Creek MP Area	--	tbd	tbd
Subtotal Supply	187	135	322
Prelim. Net Annexation Requirement	52	135	187

*Source: Analysis by FCS GROUP based on land demand and supply findings. * reflects planned industrial land area within city and includes Coffee Creek Master Plan Area.*

C. SITE REQUIREMENTS

Wilsonville’s existing vacant commercial and industrial land supply is now primarily comprised of smaller sites (less than 5 acres in size). While existing vacancy levels and smaller parcels are likely to attract small to medium size employers in the short-term, the ability to recruit larger employers will require the City to consider strategies aimed at preserving and adding larger sites (10+ acres).

Small to medium businesses can locate within existing professional office or industrial buildings, or within new office or flex/industrial buildings developed on vacant sites with less than 5 acres in size.

Most small and medium business establishments (less than 100 workers) prefer to initially lease space in office or industrial/flex buildings, and/or could locate into redevelopment sites in near Town Center locations or in master planned employment centers (e.g., Coffee Creek Master Plan Area). No special vacant land requirements are identified for future small or medium businesses. However, the City could pursue more proactive policies and investments aimed at incubating and growing self-employed and small business establishments locally.

The City can also provide a variety of medium and large sites (5 to 10+ acres) that meet the targeted business and industrial requirements. As the region’s remaining land supply of large contiguous industrial and employment sites over 10 acres diminishes, these sites will be especially needed and highly valuable for retaining and attracting large businesses.

Once the remaining larger vacant sites are developed or acquired by businesses for future expansion (likely to occur within 20 years), large business establishments (over 100 employees) will have site size and infrastructure service requirements that cannot be easily met within the Wilsonville Town Center or the Coffee Creek Master Plan Area.

It is recommended that the Wilsonville Economic Strategy identify unique site requirements for large targeted employers, including special consideration regarding site access and infrastructure needs, site size, and zoning preference.

SECTION VI: POLICY CONSIDERATIONS

OAR 660-009-0020(1)(a) and OAR 660-09-0025 require adoption of local economic development objectives and policies with special attention to designating lands for industrial and commercial use.

A. POLICY ACTIONS

Consistent with EOA documentation requirements, the economic trends analysis, stakeholder input, and the target industry clusters analyses, the City of Wilsonville will need to undertake proactive steps (adopt new policies) to mitigate the following risks:

- ◆ Risk of Losing Large Regionally Significant Industrial Areas (large sites over 10 acres in size) or not providing replacement sites if rezoning occurs.
- ◆ Risk of Not Adequately Preparing for targeted commercial redevelopment in designated locations, such as the Town Center.
- ◆ Planning, permitting and transportation funding risks (particularly with regard to ODOT Interchange Area Management Plan requirements) from annexation and development within areas such as Coffee Creek and Basalt Creek.

These and other risk factors should be identified and discussed during the Wilsonville Economic Strategy.

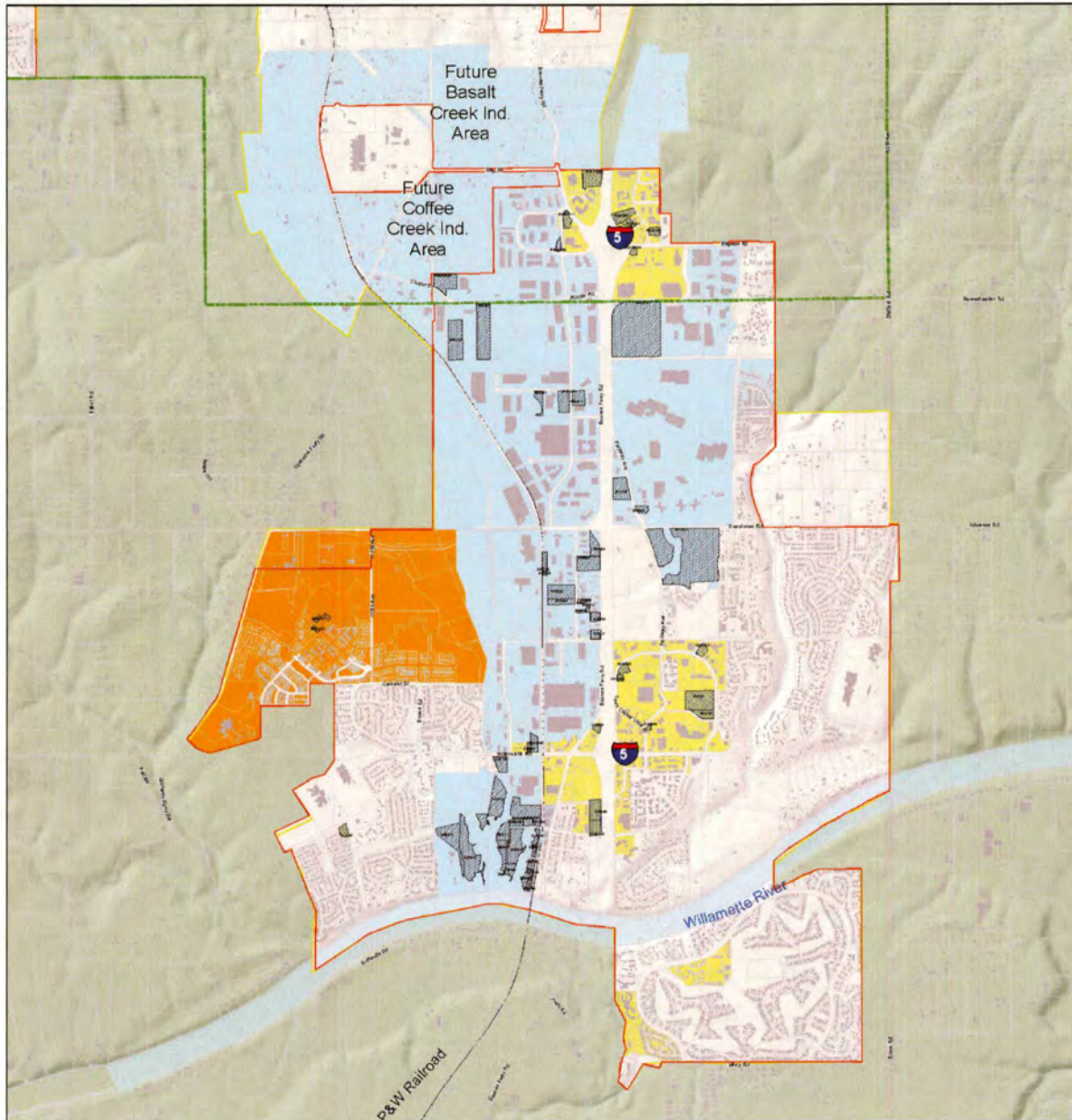
B. WILSONVILLE ECONOMIC DEVELOPMENT OBJECTIVES

OAR 660-009-0020 stipulates requirements for industrial and other economic development policies. Local comprehensive plans are required to provide community economic development objectives, a commitment to providing a competitive short-term land supply, and commitment to providing adequate sites and public facilities to serve new development. **The current Wilsonville Economic Strategy should revisit prior existing adopted economic goals and consider new objectives that address:**



- ◆ Commitment to Provide a Short-Term Land Employment Supply.
- ◆ Commitment to Provide Adequate Sites and Public Facilities.
- ◆ Commitment to Provide “No Net Loss” of existing RSIA Land Supply.
- ◆ Policies that Provide for Prime Industrial Land Development in Coffee Creek Master Plan Area.
 - This could include policies to assist property owners with obtaining Oregon Industrial Site Certification Process requirements, or assisting with land assembly.
- ◆ Policies that Promote Targeted Redevelopment in the Town Center and Other Areas.
- ◆ Policies that Work with ODOT, Washington and Clackamas Counties, and Metro on planning major I-5 transportation access connections.
- ◆ Policies that Provide Proactive Economic Development Marketing and Incentives Directed Towards Strategic Clusters.

APPENDIX

Appendix A. Vacant Employment Land Inventory Map



Vacant Commercial and Industrial Land

<p>Industrial Lands</p> <ul style="list-style-type: none"> Vacant (165.83 Acres) Stage II Committed (4.43 Acres) <p>Commercial Lands</p> <ul style="list-style-type: none"> Vacant (27.54 Acres) Stage II Committed (2.43 Acres) 	<p>Comprehensive Plan</p> <ul style="list-style-type: none"> Commercial Industrial Village <p><small>Notes</small></p> <p>1) Acreages do not include Coffee Creek and Basalt Creek areas.</p> <p>2) SROZ areas have been removed from acreage calculations.</p>	<p>Boundaries</p> <ul style="list-style-type: none"> City Limit UGB County Boundary 	<p>The City of Wilsonville, Oregon Clackamas and Washington Counties</p>  <p>February, 2012</p> 
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Appendix B. Wilsonville Retail Sales Inflow/Outflow Analysis, 2010

Retail Industry Summary						
	NAICS	Demand (Local Area)	Supply (Sales)	Retail Gap Inflow or (Outflow)	Inflow or Outflow as % of Sales	
Total Retail Trade and Food & Drink	44-45,722	\$218,488,072	\$425,138,720	\$206,650,648	49%	
Total Retail Trade	44-45	\$186,797,978	\$382,441,627	\$195,643,649	51%	
Total Food & Drink	722	\$31,690,094	\$42,697,093	\$11,006,999	26%	
Retail Industry Detail						
Motor Vehicle & Parts Dealers	441	\$45,262,436	\$118,151,187	\$72,888,751	62%	
Automobile Dealers	4411	\$38,338,937	\$104,927,084	\$66,588,147	63%	
Other Motor Vehicle Dealers	4412	\$3,471,960	\$6,820,375	\$3,348,415	49%	
Auto Parts, Accessories & Tire Stores	4413	\$3,451,539	\$6,403,728	\$2,952,189	46%	
Furniture & Home Furnishings Stores	442	\$5,047,442	\$7,600,472	\$2,553,030	34%	
Furniture Stores	4421	\$3,187,864	\$4,563,568	\$1,375,704	30%	
Home Furnishings Stores	4422	\$1,859,578	\$3,036,904	\$1,177,326	39%	
Electronics & Appliance Stores	4431	\$6,029,034	\$32,269,040	\$26,240,006	81%	
Bldg Materials, Garden Equip. & Supply	444	\$8,153,480	\$14,435,022	\$6,281,542	44%	
Bldg Material & Supplies Dealers	4441	\$6,390,109	\$5,497,836	(\$892,273)	-15%	
Lawn & Garden Equip & Supply Stores	4442	\$1,763,371	\$8,937,186	\$7,173,815	80%	
Food & Beverage Stores	445	\$40,003,053	\$68,808,921	\$28,805,868	42%	
Grocery Stores	4451	\$38,477,798	\$66,790,499	\$28,312,701	42%	
Specialty Food Stores	4452	\$749,843	\$861,894	\$112,051	13%	
Beer, Wine & Liquor Stores	4453	\$775,412	\$1,156,528	\$381,116	33%	
Health & Personal Care Stores	446,4461	\$4,520,743	\$3,976,187	(\$544,556)	-14%	
Gasoline Stations	447,4471	\$25,447,140	\$22,079,879	(\$3,367,261)	-15%	
Clothing & Clothing Accessories Stores	448	\$7,867,664	\$852,053	(\$7,015,611)	-823%	
Clothing Stores	4481	\$5,898,672	\$78,185	(\$5,820,487)	-7445%	
Shoe Stores	4482	\$905,183	\$293,506	(\$611,677)	-208%	
Jewelry, Luggage & Leather Goods	4483	\$1,063,809	\$480,362	(\$583,447)	-121%	
Sporting Goods, Hobby, Book & Music	451	\$2,709,385	\$6,360,470	\$3,651,085	57%	
Sporting Goods/Hobby/Musical Instr	4511	\$1,724,594	\$6,360,470	\$4,635,876	73%	
Book, Periodical & Music Stores	4512	\$984,791	\$0	(\$984,791)	-	
General Merchandise Stores	452	\$30,974,627	\$93,476,360	\$62,501,733	67%	
Department Stores Excluding Leased	4521	\$12,162,710	\$11,034,760	(\$1,127,950)	-10%	
Other General Merchandise Stores	4529	\$18,811,917	\$82,441,600	\$63,629,683	77%	
Miscellaneous Store Retailers	453	\$2,790,836	\$5,537,715	\$2,746,879	50%	
Florists	4531	\$103,150	\$216,840	\$113,690	52%	
Office Supplies, Stationery & Gift Stores	4532	\$589,376	\$735,183	\$145,807	20%	
Used Merchandise Stores	4533	\$292,546	\$0	(\$292,546)	-	
Other Miscellaneous Store Retailers	4539	\$1,805,764	\$4,585,692	\$2,779,928	61%	
Nonstore Retailers	454	\$7,992,138	\$8,894,321	\$902,183	10%	
Electronic Shopping & Mail-Order	4541	\$5,891,294	\$7,894,462	\$2,003,168	25%	
Vending Machine Operators	4542	\$125,384	\$999,859	\$874,475	87%	
Direct Selling Establishments	4543	\$1,975,460	\$0	(\$1,975,460)	-	
Food Services & Drinking Places	722	\$31,690,094	\$42,697,093	\$11,006,999	26%	
Full-Service Restaurants	7221	\$12,794,956	\$15,205,596	\$2,410,640	16%	
Limited-Service Eating Places	7222	\$16,177,207	\$26,334,885	\$10,157,678	39%	
Special Food Services	7223	\$687,387	\$273,947	(\$413,440)	-151%	
Drinking Places - Alcoholic Beverages	7224	\$2,030,544	\$882,665	(\$1,147,879)	-130%	

Data Note: Supply (retail sales) estimates sales to consumers by establishments. Sales to businesses are excluded. Demand (retail potential) estimates the expected amount spent by consumers at retail establishments. Supply and demand estimates are in current dollars. The Leakage/Surplus Factor presents a snapshot of retail opportunity. This is a measure of the relationship between supply and demand that ranges from +100 (total leakage) to -100 (total surplus). A positive value represents 'leakage' of retail opportunity outside the trade area. A negative value represents a surplus of retail sales, a market where customers are drawn in from outside the trade area. The Retail Gap represents the difference between Retail Potential and Retail Sales. Esri uses the North American Industry Classification System (NAICS) to classify businesses by their primary type of economic activity. Retail establishments are classified into 27 industry groups in the Retail Trade sector, as well as four industry groups within the Food Services & Drinking Establishments subsector. For more information on the Retail MarketPlace data, please view the

Source: Esri and Infogroup

February 09, 2012

Appendix C. Wilsonville Employment Growth and Vacant Land Needs Assumptions: 2012 to 2035

Net New Average Annual Employment Forecast (1 Year Forecast)

Employment Type	Scenario A - Low	Scenario B - Medium	Scenario C - High
Retail	24	42	42
Services	132	204	204
Industrial/Other	193	193	298
Government/Education	25	25	39
Total	375	464	583

Source: based on MetroScope Prelim. 2025 Gamma Forecast, 1/27/2012.

Net New Employment Forecast: 2012-2035

	Scenario A - Low	Scenario B - Medium	Scenario C - High
Retail	554	958	958
Services	3,038	4,688	4,688
Industrial/Other	4,446	4,446	6,861
Government/Education	577	577	891
Total	8,614	10,669	13,398

Source: based on MetroScope Prelim. 2025 Gamma Forecast, 1/27/2012.

Job Sectors and Building Type Assumptions

Employment Sectors	Office	Government/ Other	Flex/Bus. Park	Gen. Industrial	Warehouse	Retail	Total
Retail	5%	0%	20%	5%	5%	65%	100%
Services	60%	0%	20%	0%	0%	20%	100%
Industrial/Other	0%	0%	45%	50%	5%	0%	100%
Government/Education	20%	100%	0%	10%	0%	0%	130%

Source: based on Metro Draft Urban Growth Report, 2009; and local observations.

Projected Net New Employment Forecast by Building Type, Low

Employment Sectors	Office	Government/ Other	Flex/Bus. Park	Gen. Industrial	Warehouse	Retail	Total
Retail	28	-	111	28	28	360	554
Services	1,823	-	608	-	-	608	3,038
Industrial/Other	-	-	2,001	2,223	222	-	4,446
Government/Education	115	577	-	58	-	-	751
Total	1,966	577	2,719	2,308	250	967	8,787

Projected Net New 20-Year Employment Forecast by Building Type, Medium

Employment Sectors	Office	Government/ Other	Flex/Bus. Park	Gen. Industrial	Warehouse	Retail	Total
Retail	48	-	192	48	48	623	958
Services	2,813	-	938	-	-	938	4,688
Industrial/Other	-	-	2,001	2,223	222	-	4,446
Government/Education	115	577	-	-	-	-	693
Total	2,976	577	3,130	2,271	270	1,560	10,784

Projected Net New 20-Year Employment Forecast by Building Type, High

Employment Sectors	Office	Government/ Other	Flex/Bus. Park	Gen. Industrial	Warehouse	Retail	Total
Retail	48	-	192	48	48	623	958
Services	2,813	-	938	-	-	938	4,688
Industrial/Other	-	-	3,087	3,430	343	-	6,861
Government/Education	178	891	-	89	-	-	1,158
Total	3,039	891	4,217	3,567	391	1,560	13,665

Source: FCS GROUP based on Metro Draft 2009-2030 Urban Growth Report; modified to reflect local observations.

Appendix C (continued)

Building Type to Land Needs Assumptions*

	Office	Government/ Other	Flex/Bus. Park	Gen. Industrial	Warehouse	Retail
Refill/Redevelopment Rate ¹	40%	10%	45%	35%	30%	20%
Jobs Needing Vacant Land Rate ²	60%	90%	55%	65%	70%	80%
Building SF Per Job ²	325	630	550	700	1,100	510
Floor-Area-Ratio ²	0.40	0.30	0.35	0.30	0.35	0.35
Public Facility Net:Gross Adjustment ³	1.10	1.10	1.10	1.10	1.10	1.10
Work at Home Adjustment ⁴	0.10	0.05	0.05	-	-	0.03

* assumptions are intended to reflect a long-term average over 23 years.

1/ Adjusts for building refill & vacancy allowances.

2/ Building density derived from regional and local development observations.

3/ Allowances take into account land dedicated to public/utility easements.

4/ Allowance based on national statistics by US Dept. of Labor, Bureau of of Labor Statistics, Technical information: "Work at Home in 2004."

Source: assumptions are generally consistent with Metro Urban Growth Report, Dec. 2009 and local observations.

Projected Net New Refill & Redevelopment Building Space Needs (Floor Area)

	Office	Government/ Other	Flex/Bus. Park	Gen. Industrial	Warehouse	Retail	Total
Low	230,000	35,000	639,000	566,000	82,000	96,000	1,648,000
Medium	348,000	35,000	736,000	556,000	89,000	154,000	1,918,000
High	356,000	53,000	991,000	874,000	129,000	154,000	2,557,000

Projected Net New Building Floor Area on Vacant Lands (Floor Area)

	Office	Government/ Other	Flex/Bus. Park	Gen. Industrial	Warehouse	Retail	Total
Low	345,000	311,000	781,000	1,050,000	192,000	383,000	3,062,000
Medium	522,000	311,000	899,000	1,033,000	208,000	618,000	3,591,000
High	533,000	480,000	1,212,000	1,623,000	301,000	618,000	4,767,000

Projected Vacant Lands (gross buildable acres)

	Office	Government/ Other	Flex/Bus. Park	Gen. Industrial	Warehouse	Retail	Total
Low	22	26	56	88	14	28	234
Medium	33	26	65	87	15	45	271
High	34	40	87	137	22	45	364

Appendix C (continued)

Land Use Assignment Assumptions

Local Zoning Classification	Office	Government/ Other	Flex/Bus. Park	Gen. Industrial	Warehouse	Retail
Commercial	40%	0%	0%	0%	0%	70%
Office/Services	60%	0%	0%	0%	0%	30%
Industrial/Other	0%	100%	100%	100%	100%	0%
Other Zone Types	0%	0%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%

Assumptions by FCS GROUP based on local observations.

Projected Vacant Land Needs Forecast by Zoning Classification, Low

Land Use Classification	Office	Government/ Other	Flex/Bus. Park	Gen. Industrial	Warehouse	Retail	Total
Commercial	9	-	-	-	-	19	28
Office/Services	13	-	-	-	-	8	21
Industrial/Other	-	26	56	88	14	-	185
Total	22	26	56	88	14	28	234

Projected Vacant Land Needs Forecast by Zoning Classification, Medium

Land Use Classification	Office	Government/ Other	Flex/Bus. Park	Gen. Industrial	Warehouse	Retail	Total
Commercial	13	-	-	-	-	31	44
Office/Services	20	-	-	-	-	13	33
Industrial/Other	-	26	65	87	15	-	193
Total	33	26	65	87	15	45	271

Projected Vacant Land Needs Forecast by Zoning Classification, High

Land Use Classification	Office	Government/ Other	Flex/Bus. Park	Gen. Industrial	Warehouse	Retail	Total
Commercial	13	-	-	-	-	31	45
Office/Services	20	-	-	-	-	13	34
Industrial/Other	-	40	87	137	22	-	286
Total	34	40	87	137	22	45	364

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Wilsonville Economic Development Strategy Summary, July 2012

The Process

Why care about economic development?

Anyone following the news can see that governments at all levels are concerned about the health and development of their economies. For most households, jobs and income—the common objectives for local economic development—are quality of life, and things like high-quality, effective government services and environmental quality have indirect effects on business attraction and growth, and thus are important to economic development.

The private sector is the major driver of economic innovation and prosperity, but it relies on local governments for things like roads, other public facilities, and community services. Its success improves if it has local governments as willing and able partners in development.

Why create an economic development strategy?

Actions taken now affect future conditions; thoughtful actions will, on average, lead to more desirable consequences. The City's objective is to get multiple parties and interests to agree on an Economic Development Strategy to guide both (1) City investments and regulations, and (2) private supporting efforts. Agreement on a vision and key actions will make development more efficient and less contentious.

How was the Strategy developed?

With **people** and with **information**. An Economic Development Strategy Advisory Committee of residents, business people, and other stakeholders developed and reviewed comments on the vision, potential actions, and priority actions. It considered input from focus groups, interviews with business leaders, and Economic Summit, and surveys. It considered many reports and opinions to inform its conclusions (see sidebar).

What is special about the Strategy?

Wilsonville's development and fiscal problems are minor relative to those of most cities in Oregon (see sidebar on "factors"). The Advisory Committee believes the City can and should take a long view. Its actions in economic development should be *deliberative* (wait for businesses that fit the plan), *balanced* (economic development and quality of life are both important—the City can have both), *efficient* (the City's first priority should be to provide the land-use plan, infrastructure, and public services that are expected of it) and *fair* (do not make incentives for new business a standard practice—treat all businesses equally).

As the City implements the strategy, decision-makers must consider uncertainty and the need for flexibility in the Strategy. Wilsonville has many of the fundamentals necessary for it to do well economically relative to its regional neighbors. But the City has to make careful decisions that allow it to adapt its choices to changing circumstances.

Technical Basis for Recommended Actions

In thinking about Wilsonville's opportunities and constraints for economic growth over the next one to five years the Advisory Committee considered (1) the City's updated Economic Opportunity Analysis, (2) input from stakeholders in Wilsonville via focus groups, interviews, surveys, and the public Economic Summit (May 2012), and (3) staff and Committee knowledge of the economy in the Portland metropolitan region. The main factors that affect Wilsonville's economy include:

- Regional/Interstate accessibility
- Vacant land base (especially Coffee Creek and Basalt Creek)
- Vacant commercial and industrial built space
- Existing businesses, including national and international employers
- Established and emerging business clusters
- New Oregon Tech campus
- Similar number of residents and jobs
- Tourism
- Commuting patterns
- High quality housing, but a need for more affordable housing

Vision Statement

Wilsonville's sustained economic strength is fostered by a spirit of innovation and collaboration. Our residents and businesses have wisely invested the time, energy, and money to assure that Wilsonville retains the quality of life we value. We have leveraged our excellent location, ample land supply, top quality infrastructure and transit system to deliver desired economic benefits.

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Actions

The City of Wilsonville will achieve its vision through actions that address *six categories of factors* that influence the expansion and location decisions of businesses:

1. Agreement on amount, type, location and pattern of development

Action 1.1. Describe business attributes and impacts that are supportive of Wilsonville's economic and community development goals. A task force is formed to consider, make recommendations, and deliver a report to City officials and staff on the desired community impacts of businesses, without singling out the specific types of businesses that the City should try to attract to Wilsonville. (Immediately in Year 1)

2. Land and buildings

Action 2.1. Promote reuse of vacant buildings, infill development, and redevelopment. City staff members make recommendations to City Council on policies and locations to promote reuse of vacant buildings, infill development on underutilized properties, and redevelopment of underutilized properties or obsolete buildings. (Years 1- 5)

Action 2.2. Establish and master plan development districts. The City will establish development districts with buildable land in places with a high priority for development, including developing land use policies to support the desired development forms. (Years 2 to 5 and beyond)

3. Transportation and other Infrastructure

Action 3.1. Coordinate capital improvement planning to ensure infrastructure availability on employment land. City staff will continue coordinating capital improvement planning and funding with land use, transportation and other infrastructure planning to ensure that infrastructure is available for employment land, especially areas identified as having a high priority for development. City staff will investigate and recommend a funding plan for the capital improvements. (Year 1, on-going)

Action 3.2. Expand the hours of operation for SMART. SMART will expand hours of operation, as funds become available, in order to provide improved access to public transit. This will enable workers to get to and from their jobs and students to get to and from their place of education using public transit. (Year 1, on-going)

4. Workforce development

Action 4.1. Connect businesses with organizations involved in workforce training and education. City staff will help businesses make connections with organizations that provide workforce training and education. (Year 1, on-going)

Action 4.2. Adopt a policy demonstrating support for Oregon Tech. The City Council will adopt a policy that expresses the City's willingness to collaborate with Oregon Tech to help it succeed in its mission of training and education and also supporting other institutions of higher education. (Year 1)

5. Quality of life and public service

Action 5.1. Ensure that regulations support quality of life. City staff will continue to review building and development policies and procedures to (1) ensure that regulations that guide economic development will lead to a better quality of life in a cost-effective manner, and (2) evaluate whether there are actions that the City should take to maintain and enhance the quality of life. (Year 1, continue in Years 2 to 5)

6. Business communication and services

Action 6.1. Develop a marketing plan. City staff will work with local partners in economic development to develop a marketing plan, including materials that document Wilsonville's advantages and amenities that are attractive to businesses. (Year 2)

Action 6.2. Develop criteria to guide the use of incentives to attract or retain businesses. Create a task force that will recommend criteria for the use of incentives to attract or retain businesses. The criteria should describe (1) where incentives would be used, (2) what businesses would qualify for incentives and under what conditions, (3) what types of incentives would be available to businesses, (4) the funding sources to support the incentives, and (5) expectations of businesses given incentives. (Year 1, immediately)

Action 6.3. Develop a program to assist existing businesses. City staff will develop a program to assist existing businesses. The program will include an outreach strategy to assess what assistance businesses want and need from the City and will evaluate the need for an economic development director at the City. (Year 2)

Action 6.4. Streamline development code and permitting process. City staff will evaluate opportunities to streamline the development code and permitting process and will also identify changes in processes that can be made without revising the code. (Years 2 to 5)



**City of Wilsonville:
Economic Development
Strategy**

July 2012

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This document is the Economic Development Strategy of the City of Wilsonville. As a strategy, it focuses on a direction (a vision) and actions the City can take (policies) to move in that direction. Other documents provide technical information in support of the actions described here.¹

1.1 WHAT IS AN ECONOMIC DEVELOPMENT STRATEGY?

Economic information, on its own, is not an economic strategy. An economic *strategy* for a city or region is typically a document that describes what *actions* the public sector and business-interest organizations intend to take to improve economic activity.

Such a strategy builds from an understanding of past, current, and potential future economic conditions, but goes further. It considers, among other things: (1) existing legal requirements and policies; (2) values that different decision-makers, interest groups, and other stakeholders place on different possible policy outcomes; and (3) other aspects of City policy regarding quality of life, including land use, infrastructure, environmental quality, equity, and more.

1.2 WHAT IS THE FOCUS OF WILSONVILLE'S STRATEGY?

This project focused on:

People. Getting City decision-makers (members of the City Council and Planning Commission) and private sector representatives of economic development and business interests to agree on the product.

Product. An Economic Development Strategy that can:

Guide Actions. City investments and regulations, and private supporting efforts

Aimed at...Improving the efficiency of the City's efforts in recruiting, retaining, and expanding businesses within the City, in both the short run and the longer run.

¹ Appendices to this document provide greater detail about the process by which it was developed, information received from stakeholder groups and the public, and a longer list of actions considered. Concurrent with this project, the City updated its Economic Opportunity Analysis (EOA), which provides information about its economic conditions and prospects.

1.3 HOW WAS WILSONVILLE'S STRATEGY DEVELOPED?

To develop its strategy the City created an **Economic Development Advisory Committee**, composed of residents, business people, and other stakeholders involved in economic development in Wilsonville. The Advisory Committee met five times over a four-month-long period, from March through June 2012. The Committee developed and reviewed comments on the vision for economic development, potential actions, and priority actions.

The Advisory Committee considered input from the community that came from several sources:

- **Focus Groups.** More than 40 stakeholders participated, including business owners and managers, staff with Wilsonville's partner organizations in economic development, staff with public agencies, and other interested stakeholders.
- **Interviews with Business Leaders.** Primarily for large businesses that were unable to participate in the focus groups.
- **Economic Summit.** Wilsonville's public was invited to participate in conversations about the issues identified in the process of developing the economic development strategy. Over 60 attendees participated in the Summit event.
- **Public Comments.** The public has had opportunities comment throughout development of the Strategy, at the Economic Summit, during Advisory Committee meetings, and through giving input to City staff via email or the City's website.
- **City staff and decision-makers .** They provided insight into City policies and activities and helped develop the strategy.
- **Community survey.** The City recently completed a community survey, which asked questions about economic development issues.

2.1 WHAT IS ECONOMIC DEVELOPMENT?

The *traditional view* of economic development is that it is about retention and creation of jobs that offer competitive wages, meaningful and secure labor, and opportunity for advancement. The *emerging view* of economic development is that it is a process of improving a community's well-being through not only job creation, business growth, and income growth, but also improvements to the wider social and natural environment that strengthen the economy. These latter "quality of life" factors are important not only to the well-being of residents and workers. They also contribute to attractiveness of a place for businesses – in that sense, maintaining and improving these factors can legitimately be considered a strategy for business retention and attraction.

Every economic development strategy, including this one, has at its core the traditional focus on jobs and income. But this strategy is broader; it considers factors relating to quality of life for residents and employees that affect Wilsonville's ability to retain and expand existing businesses and attract new businesses.

Though economic development could be defined broadly to consider most activities of local government (e.g., including the provision of quality infrastructure, education, and recreation facilities and programs), *job growth and business growth are generally the primary objective of local government economic development efforts*. This growth comes from the creation of new firms, expansion of existing firms, and attraction of new firms or retention of existing firms. If economic development is about accommodating, creating, and expanding businesses, then it makes sense to think of how local economic development policies will affect factors that matter to business decisions about location and expansion. In the jargon of economics, any policy or action must affect a factor of production that influences business locations and expansion.² The typical *direct factors of production* are:

- **Natural resources and supplies.** Businesses producing goods and some services need access to materials to develop products that they can sell. The quality, quantity, and cost of locally available natural

² The information in this section is summarized from the American Planning Association's Planning Advisory Service Report "An Economic Development Toolbox: Strategies and Methods," 2006.

resources and supplies are all relevant. Historically access to forests, water, and cheap electrical power have drawn several industry sectors to Oregon. For Wilsonville today, the natural resource issues are relatively unimportant; the access to suppliers remains important, however, and Wilsonville's access in the Portland region is relatively good.

- **Land and built space.** Businesses need land that is entitled, buildable, and development-ready. Land and buildings must be in the right locations, sizes, and configurations.
- **Labor.** The relative productivity and cost of labor is often the single most important factor for businesses, especially service businesses. Businesses want a trained and educated workforce that is reliable and, if possible, available at relatively lower costs. An important part of labor is entrepreneurship, which includes trained, creative, and effective management.
- **Access to markets and materials.** Businesses need to bring their supplies and labor to and from other locations. Business look for proximity to markets and connections to transportation systems to access markets and materials.
- **Local Infrastructure.** An important role of government is to increase economic capacity by improving the quality and efficiency of infrastructure (e.g., roads, water and sewer systems, or airports).
- **Business clusters.** One way for businesses to reduce their costs is to choose a location where there are other similar businesses or other businesses that share a common supply chain, constituting a business cluster.

Businesses locate in a city or region not only because of the quality and cost of these direct factors of production, but also because of the presence of factors that can have indirect but important effects on the costs and profitability of doing business:

- **Quality of life.** "Quality of life" includes all the factors and amenities that attract people to a community because it is a nice place to be: good schools, a clean environment, affordable housing, nice parks, and an exciting culture. Quality of life can affect costs for businesses. The wage and salary costs of attracting and retaining both management and labor can be reduced if they have a larger "second paycheck" from the amenities and quality of life factors in the community.
- **Government policies.** Government policies can affect the supply, cost, and quality of the factors above. Businesses want the public

sector's help with most of the items above, but they would like the costs of that assistance (e.g., taxes and fees) to be low.

Not all factors are equally important to businesses in general, and their importance differs by type of business. The *location* decisions of businesses are primarily based on the availability and cost of labor, transportation, raw materials, and capital. In the words of professional site selectors, businesses typically do a *regional* screening first ("Which are the two or three best regions for our business?") and then work down to sites in the region as part of the final selection process. The availability and cost of these production factors are broadly similar within a region. Most economic development strategies available to local governments affect the cost and quality of these primary location factors only indirectly.

Local governments can most directly affect the other factors in the list above – for example, tax rates (within the bounds of Measures 5 and 50), land supply and permitting, the quality of public facilities and services and their costs to businesses and their employees, and workforce training.

Wilsonville's economic development strategy is organized around these factors of production: factors that businesses care about when making decisions about where and how to grow.

2.2 WHAT FACTORS AFFECT WILSONVILLE'S ECONOMY?

Developing an economic development strategy for Wilsonville requires an understanding of the community's comparative advantages and disadvantages in the context of the larger regional economy. Some key considerations:³

- **Regional and Interstate Accessibility.** One of Wilsonville's primary competitive advantages for economic development is the City's proximity to and visibility from Interstate 5. I-5 interchange improvements at Wilsonville Road will be complete in 2012, expanding capacity to improve traffic flow and safety. The primary limitation for I-5 access in Wilsonville for most businesses is that the city has three connections to I-5, providing access to the highway from the city's industrial and employment areas, with two of the connections located north of the Willamette River.

The I-205 connection to I-5 is located just two miles north of Wilsonville. With the combination of I-5 and I-205, the City also has excellent access to I-84 and Highway 217, which in turn connects with Highway 26.

Other transportation-related economic development advantages for Wilsonville include:

The City's public transit system (SMART), which provides local cross-town bus service and commuter linkages to Portland in the north, Salem in the south, and Canby in the east.

TriMet's Westside Express Service (WES) commuter rail system, which provides inter-city transit service to Beaverton (via Tualatin and Tigard). SMART uses the local WES station as a hub for operations, delivering commuters from the train to local businesses within 10 minutes during morning and evening commute times.

Aurora Airport, owned and operated by the Oregon Department of Aviation, provides hangers, fueling and transient aircraft services and maintenance operations for general aviation, charters, and corporate aircraft. In this regard, the Aurora Airport

³ The charge to the Advisory Committee process did not include the collection, analysis, and reporting of economic data or a formal environmental scan of Wilsonville's economy. The overview in this section of Wilsonville's opportunities and constraints for economic growth over the next one to five years derives from the City's updated EOA, input from stakeholders in Wilsonville (Section 1.3), and staff and Committee knowledge of the economy in the Portland metropolitan region.

provides valuable support to local businesses and to corporate executives.

- **Vacant land base.** The City has opportunities for development of vacant land in the next one to five years in the Coffee Creek area and over the next 20 years in the Basalt Creek area.

Portions of the Coffee Creek Master Plan Area have municipal services available, but larger portions of the area will require the extension of services (e.g., water and sewer lines). The total cost of building out the Coffee Creek Master Plan Area is not yet estimated, and the timing of service extensions is unspecified, making developers hesitant to make investments in the area. There is no adopted concept plan for development of the Basalt Creek Master Plan Area, but the cities of Tualatin and Wilsonville have agreed to cooperatively develop a concept plan for that area.

The City has an advantage within the Portland region in that it has a vacant land base to build on. The disadvantage is that the City does not have specific funding plans for servicing the remainder of the Coffee Creek and all of Basalt Creek areas.

- **Vacant built space.** The City has a substantial stock of vacant commercial and industrial built space, which can provide opportunities for growth of new businesses. Vacant buildings, however, detract from the sense of place in Wilsonville and can contribute to a lower property-tax base due to lower assessments that are often applied to vacant structures.
- **Existing businesses.** Wilsonville's existing business base is an advantage for economic development. The City's mix of businesses includes established international and regional employers. Five businesses have 500 or more employees. In addition, Wilsonville has a large base of small businesses, in a wide range of industries including: computer and electronic product manufacturing; professional and technical services; wholesalers; health care; specialty trade contractors; retail; and food services.
- **Business clusters.** Wilsonville has established business clusters in wholesale trade, specialty trade contractors, computer and electronic manufacturing, non-metal mineral manufacturing, machinery manufacturing, medical products manufacturing and distribution, transportation and warehousing, and motor vehicle and parts dealers. Emerging business clusters in Wilsonville are: health care services and professional and business services.

- **New Oregon Tech campus.** Oregon Tech (or Oregon Institute of Technology (OIT)) is consolidating its regional campuses in Wilsonville. This relocation and consolidation will provide opportunities for enhanced workforce training and partnerships between OIT and businesses, and will be a catalyst for growth of technology businesses in Wilsonville.
- **Tourism.** Wilsonville has a growing tourism cluster, anchored by local motels with over 900 rooms and the third largest full-service hotel/conference center in Washington County, and supported by local restaurants. The Wilsonville Area Chamber of Commerce operates a Regional Visitor Information Center, which provides gateway directory information to the traveling public.
- **Similar number of residents and jobs.** Historically, Wilsonville has had more employees than residents. In 2006, prior to the recent recession, Wilsonville had about 16,900 residents and 19,935 workers, about 1.18 jobs per persons. By 2010, Wilsonville had about 19,500 residents and about 18,500 employees, about 0.95 jobs per persons. These ratios are about twice the average for the tri-county Portland metropolitan area (about 0.5 jobs per person). The relatively high number of jobs in Wilsonville suggest the City advantages of a relatively large and diverse economy, which contributes to a broad tax base.
- **Commuting patterns.** Businesses in Wilsonville are able to attract workers from across the Portland metropolitan region and from the Willamette Valley to the south. The U.S. Census' American Community Surveys show that over 90% of employees who work in Wilsonville commute from other locations. In addition, many residents of Wilsonville commute out of the City for work. While the ability of workers to commute into and out of Wilsonville is an advantage for businesses and residents, the large amount of commuting means that commuters use a large share of the capacity on Wilsonville's transportation system and I-5 interchanges.
- **Housing.** According to stakeholder input, Wilsonville's housing stock is generally high-quality, which is an advantage for attracting businesses that want access to high-quality housing for their workers. Stakeholders report that Wilsonville's housing is not affordable to lower- and some middle-income households. The need for more affordable housing may contribute to the City's large amount of commuting.

The basis for the Economic Development Strategy is the community's vision for economic growth. The vision is that Wilsonville will have sustained economic growth based on the City's competitive advantages in the Portland metropolitan region.

3.1 WHAT IS A VISION STATEMENT?

A vision is a broad statement about a desired future, usually expressed in a few sentences. The vision is made more specific with goals, though they are still relatively broad statements about desired outcomes. A broad vision for the future development of Wilsonville could address many topics: not just jobs and land for employment, but also housing options and quality, transportation and infrastructure development, and quality of life (e.g., a high-quality K-12 education system or great parks).

The following vision was prepared by members of the Advisory Committee with input from participants at the public Summit. The criteria for the vision, established by the Advisory Committee and participants in the Summit, were that it should:

- Be short, inspiring, and motivating
- Emphasize Wilsonville's advantages and focus on the unique qualities of Wilsonville
- Focus on outcomes and the end-results of the Strategy
- Support the values of maintaining and enhancing the City's quality of life, cultural values, and amenities
- Be inclusive of all businesses, not limited to selected industries
- Emphasize a variety of job opportunities through sustained growth.

3.2 WHAT IS WILSONVILLE'S VISION FOR ECONOMIC DEVELOPMENT

Wilsonville's sustained economic strength is fostered by a spirit of innovation and collaboration. Our residents and businesses wisely invest the time, energy, and money to assure that Wilsonville retains the quality of life we value. We leverage our excellent location, ample land supply, top quality infrastructure and transit system to deliver desired economic benefits.

3.3 WHAT ARE THE DIRECTIONS FOR ACHIEVING THE VISION

The City of Wilsonville will seek to achieve its vision through actions that address six categories of factors that influence the location and expansion decisions of businesses:

1. **Agreement on amount, type, location, and pattern of development.** The City supports and facilitates communication and cooperation among the many parties with an interest in these issues.
2. **Land and buildings.** The City strives to use land effectively, carefully planning for long-term economic development, urban development (including housing and civic spaces), and the protection and enhancement of natural areas and open space.
3. **Transportation and other infrastructure.** The City provides public facilities to efficiently service land and buildings within the City. Where the City is not the principal provider, it shall advocate for full and efficient service of properties within its boundaries.
4. **Workforce development.** The City supports education and workforce development that leads to opportunities for jobs, advancement, entrepreneurship, and increased income for residents, by collaborating with organizations whose mission is to provide workforce training and education.
5. **Quality of life and public services.** The City supports and welcomes the growth of existing businesses and new businesses that share the community's values and enhance Wilsonville's livability.
6. **Business communication and services.** The City supports business development through open communication, coordinating among stakeholders, and fostering a positive business climate.

3.4 WHAT IS DIFFERENT ABOUT THIS VISION AND STRATEGY

Wilsonville's fiscal problems are smaller relative to those of most cities in Oregon (see Section 2.2). The Advisory Committee believes *the City can and should take a long view*. The City's actions in economic development should be *deliberative* (wait for businesses that fit the plan), *balanced* (economic development and quality of life are both important – the City can have both), *efficient* (the City's priority should be to provide the land-use plan, and to provide adequate infrastructure and public services when needed) and *fair* (do not make incentives for new business a standard practice).

The economic development vision is achieved through a series of actions, which are organized by the factors that the location and expansion decisions of businesses. Each of the six factors has at least one action that the City will accomplish during the five year period.

4.1 SUMMARY OF ACTIONS

The Advisory Committee considered dozens of potential actions in the six categories described in Section 3.3 (see Appendix C, for a longer list of actions considered). Noting that strategies with a large number of actions are hard to explain and implement, the Advisory Committee set itself the task of pruning the many actions to about 10: ones that needed immediate attention, were necessary for other actions to occur, were specific, and could generally be accomplished in a year or two (certainly less than five years). Table 4-1 summarizes the Advisory Committee's recommendations for high-priority actions. The rest of the chapter gives more details.

Table 4-1. Summary of Actions

Action	Description	Timing
1. Agreement on amount, type, location, and pattern of development		
Action 1.1. Describe business attributes and impacts that are supportive of Wilsonville's economic and community development goals	A task force is formed to consider, make recommendations, and deliver a report to City officials and staff on the desired community impacts of businesses, without singling out the specific types of businesses that the City should try to attract to Wilsonville.	Immediately in Year 1
2. Land and buildings		
Action 2.1. Promote reuse of vacant buildings, infill development, and redevelopment	City staff members make recommendations to City Council on policies and locations to promote reuse of vacant buildings, infill development on underutilized properties, and redevelopment of underutilized properties or obsolete buildings.	In Year 1, continuing through Year 5
Action 2.2. Establish and master plan key development districts	The City will establish development districts with buildable land in places with a high priority for development, including developing land use policies to support the desired development forms.	Years 2 to 5 and continue beyond
3. Transportation and other infrastructure		
Action 3.1. Coordinate capital improvement planning to ensure infrastructure availability on employment land	City staff will continue coordinating capital improvement planning and funding with land use, transportation and other infrastructure planning to ensure that infrastructure is available for employment land, especially areas identified as having a high priority for development. City staff will investigate and recommend a funding plan for the capital improvements.	Year 1, on-going
Action 3.2. Expand the hours of operation for SMART	SMART will expand hours of operation, as funds become available, in order to provide improved access to public transit. This will enable workers to get to and from their jobs and students to get to and from their place of education using public transit.	Year 1, on-going
4. Workforce development		
Action 4.1. Connect businesses with organizations involved in workforce training and education	City staff will help businesses make connections with organizations that provide workforce training and education.	Year 1, on-going
Action 4.2. Adopt a policy demonstrating support for Oregon Tech	The City Council will adopt a policy that expresses the City's willingness to collaborate with Oregon Tech to help it succeed in its mission of training and education and also supporting other institutions of higher education.	Year 1
5. Quality of life and public services		

Action	Description	Timing
<p>Action 5.1. Ensure that regulations support quality of life</p>	<p>City staff will continue to review building and development policies and procedures to (1) ensure that regulations that guide economic development will lead to a better quality of life in a cost-effective manner, and (2) evaluate whether there are actions that the City should take to maintain and enhance the quality of life.</p>	<p>Year 1, continue in Years 2 to 5</p>
<p>6. Business communication and services</p>		
<p>Action 6.1. Develop a marketing plan</p>	<p>City staff will work with local partners in economic development to develop a marketing plan, including materials that document Wilsonville's advantages and amenities that are attractive to businesses.</p>	<p>Year 2</p>
<p>Action 6.2. Develop criteria to guide the use of incentives to attract or retain businesses</p>	<p>Create a task force that will recommend criteria for the use of incentives to attract or retain businesses. The criteria should describe (1) where incentives would be used, (2) what businesses would qualify for incentives and under what conditions, (3) what types of incentives would be available to businesses, (4) the funding sources to support the incentives, and (5) expectations of businesses given incentives.</p>	<p>Immediately in Year 1</p>
<p>Action 6.3. Develop a program to assist existing businesses</p>	<p>City staff will develop a program to assist existing businesses. The program will include an outreach strategy to assess what assistance businesses want and need from the City and will evaluate the need for an economic development director at the City.</p>	<p>Year 2</p>
<p>Action 6.4. Streamline development code and permitting process</p>	<p>City staff will evaluate opportunities to streamline the development code and permitting process and will also identify changes in processes that can be made without revising the code.</p>	<p>Years 2 to 5</p>

4.2 ACTIONS

1. LOCAL AGREEMENT ON AMOUNT, TYPE, LOCATION, AND PATTERN OF DEVELOPMENT

Action 1.1. Describe business attributes and impacts that are supportive of Wilsonville's economic and community development goals

What is the action?	A task force is formed to consider, make recommendations, and deliver a report to City officials and staff on the desired community impacts of businesses, without singling out the specific types of businesses that the City should try to attract to Wilsonville.
Why is the City doing it?	Wilsonville is in the rare position of being able to be selective about the types of businesses that locate in the City. It wants economic growth to enhance and maintain the high quality of life in Wilsonville. But what, exactly, does that mean? The Economic Development Advisory Committee concluded that the City should not pick specific industry sectors or clusters for special treatment. It believed, however, that the City would occasionally need to make decisions about land use designation, infrastructure investment, or fees and incentives that might have the effect of supporting some types of development over others. Thus, the City would benefit from drafting a description of what kind of attributes <u>any</u> business would have to be compatible with a general objective of "supporting community goals."
When will work begin?	Immediately in Year 1
How does it work?	City staff and elected officials will work with stakeholder groups to identify membership for the task force. The task force will identify and prioritize the kinds of attributes and impacts that businesses would have if they were to fit well into the economic and community development objectives of the City. The task force should coordinate with the work of the task force in Action 6.2 (criteria for incentives; the two task forces could be combined into one).
Who will implement?	City Economic Development Team
How will the action be funded?	Volunteer task force; existing budgets for staff time; no dedicated funding source
How will the City know when it is done?	At a minimum, the task force will deliver a report to City Council. The Council may simply accept the report as guidance to staff, or it may take more detailed action.

2. LAND AND BUILDINGS

Action 2.1. Promote reuse of vacant buildings, infill development, and redevelopment

What is the action?	City staff members make recommendations to City Council on policies and locations to promote reuse of vacant buildings, infill development on underutilized properties, and redevelopment of underutilized properties or obsolete buildings.
Why is the City doing it?	There are opportunities for making better use of areas with existing buildings in Wilsonville. Vacancies in buildings, especially those that have been long vacant, can be used by new or expanding businesses. Land with existing development can be more efficiently used by infilling or redeveloping underutilized space.
When will work begin?	Year 1, continuing through Year 5
How does it work?	City staff will identify high priority underutilized sites to target for reuse. The highest priority sites might be large or highly visible buildings and land. Working with local real estate professionals and property owners, City staff will evaluate the reasons that land is underutilized or buildings are vacant or underutilized. Staff will work with property owners to identify opportunities for reuse of the site.
Who will implement?	City Community Development Department; support from the City Economic Development Team
How will the action be funded?	Existing budgets for staff time; no dedicated funding source for developing the policies Additional budget may be needed to fund reuse or redevelopment, depending on recommended policies,
How will the City know when it is done?	At a minimum, City staff will deliver a report with recommendations to City Council. Council will adopt some of those recommendations with a commitment to fund any policies that require funding.

Action 2.2. Establish and master plan key development districts

What is the action?	The City will establish development districts with buildable land in places with a high priority for development, including developing land use policies to support the desired development forms.
Why is the City doing it?	<p>The majority of buildable employment land available for Wilsonville's growth is in the Coffee Creek and Basalt Creek areas, which are outside of the City limits. The City plans to develop the Coffee Creek area for employment, with development happening over the next few years.</p> <p>The City's long-term plans for accommodating employment growth focus on the Basalt Creek area, which contains at least a 20-year supply of employment land for the City, based on results of the EOA.</p>
When will work begin?	Years 2 to 5 and continue beyond
How does it work?	<p>The City has a master plan for the Coffee Creek area, which includes land use and essential infrastructure, but which lacks explicit strategies for annexation and consolidation of ownerships. Much of the Coffee Creek area still lacks infrastructure necessary to support the development of employment areas. City staff will need to identify areas with highest priority for development and then plan to provide infrastructure to those areas, as part of Action 3.1. Additionally, development in the Basalt Creek area will be partially dependent on infrastructure that will come through the Coffee Creek area.</p> <p>The City will need to complete a master plan for the Basalt Creek Area, in cooperation with the City of Tualatin. The City will then need to identify areas with highest priority for development and then plan to provide infrastructure to those areas, as part of Action 3.1</p> <p>The staff's work will be guided by the Planning Commission and City Council, with input from stakeholders and the public as needed.</p>
Who will implement?	Community Development Department
How will the action be funded?	The City will need to identify funds to pay for the implementation of both the Coffee Creek and Basalt Creek Master Plan.
How will the City know when it is done?	<p>City staff complete an implementation strategy for the Coffee Creek Master Plan and a Basalt Creek Master Plan and take them through the review process with stakeholders, affected agencies, and the public.</p> <p>The City Council approves the Plan as amended.</p>

3. TRANSPORTATION AND OTHER INFRASTRUCTURE

Action 3.1. Coordinate capital improvement planning to ensure infrastructure availability on employment land

What is the action?	<p>City staff will continue coordinating capital improvement planning and funding with land use, transportation and other infrastructure planning to ensure that infrastructure is available for employment land, especially areas identified as having a high priority for development.</p> <p>City staff will investigate and recommend a funding plan for the capital improvements.</p>
Why is the City doing it?	<p>The City wants to provide the necessary services to accommodate growth both within the City limits and in areas identified for growth through annexation to the city limits. The majority of Wilsonville's potential vacant land for employment is in the Coffee Creek or Basalt Creek areas, which largely lack the infrastructure necessary to support employment uses. Providing infrastructure to these areas requires identifying one or more funding sources.</p>
When will work begin?	Year 1, on-going
How does it work?	<p>City staff will work with decision-makers to identify and prioritize areas within the City with highest priority for capital improvements. These areas may include places within the City where improvements are necessary. Other areas where capital improvement planning is necessary are Coffee Creek and, in the long-term, Basalt Creek. City staff will balance needs for improvements to existing facilities that serve existing businesses and residents with needs to provide infrastructure to vacant land to allow for new growth.</p> <p>City staff will identify funding sources to pay for capital improvements in the areas identified as high priorities. One tool the City is considering in the Coffee Creek area is urban renewal. The process for deciding whether to use urban renewal will be a transparent, public process that is led by the City Council.</p>
Who will implement?	Community Development Department
How will the action be funded?	Existing budgets for staff time; no dedicated funding source
How will the City know when it is done?	<p>City staff will prepare a capital improvement plan for infrastructure, including a funding plan. Staff will present it to City Council, and the Council will adopt some or all of those recommendations with a commitment to fund any items that require funding.</p>

Action 3.2. Expand the hours of operation for SMART

What is the action?	SMART will expand hours of operation, as funds become available, in order to provide improved access to public transit. This will enable workers to get to and from their jobs and students to get to and from their place of education using public transit.
Why is the City doing it?	Use of transit addresses some of the City's transportation concerns: (1) automotive congestion, especially from commuting and (2) providing transportation opportunities for households in a range of income groups.
When will work begin?	Year 1, on-going
How does it work?	<p>SMART will maintain the established level-of-service standards for existing routes. SMART will identify opportunities to provide more service (e.g., new routes or buses at different times) to meet the needs of employers and educational institutions.</p> <p>The biggest challenge in expanding hours of operation is identifying a funding source to pay for more service without reducing existing levels of service.</p>
Who will implement?	SMART
How will the action be funded?	SMART will evaluate potential funding sources to provide expanded hours of operation.
How will the City know when it is done?	SMART will identify additional funding sources and expand hours of operation.

4. WORKFORCE DEVELOPMENT

Action 4.1. Connect businesses with organizations involved in workforce training and education

What is the action?	City staff will help businesses make connections with organizations that provide workforce training and education.
Why is the City doing it?	The City recognizes the importance of workforce training and education in having a skilled workforce that can meet the needs of businesses. City staff have established working relationships with businesses and with workforce development and educational organizations, including the Art/Tech High School, Wilsonville High School, Clackamas Community College, Pioneer Pacific College, and Oregon Tech.
When will work on the action begin?	Year 1, on-going
How does it work?	City staff maintain relationships with people involved in workforce training and education, as well as with businesses. City staff can initiate outreach with stakeholders to strengthen existing relationships and build new relationships. This outreach could take the form of periodic meetings with stakeholders and informal opportunities to build relationships.
Who will implement?	City Economic Development Team
How will the action be funded?	Existing budgets for staff time; no dedicated funding source
How will the City know when it is done?	City staff will have periodic meetings about relationship building with workforce training and education organizations and businesses.

Action 4.2. Adopt a policy demonstrating support for Oregon Tech and other institutions of higher education

What is the action?	The City Council will adopt a policy that expresses the City's willingness to collaborate with Oregon Tech to help it succeed in its mission of training and education and also supporting other institutions of higher education.
Why is the City doing it?	The City recognizes the importance of having local opportunities for workforce training and higher education within the City. The City recognizes the significant opportunities that result from having a highly regarded university (Oregon Tech) consolidating its metropolitan campuses in Wilsonville. Oregon Tech's specialized technical training will be a valuable economic development tool, giving Wilsonville one more competitive advantage. The City is committed to making Oregon Tech's relocation successful and to helping businesses in Wilsonville benefit from the opportunities resulting from having Oregon Tech and other institutions of higher education in the community.
When will work begin?	Year 1
How does it work?	City staff will work with decision-makers to craft and adopt a policy in support of Oregon Tech.
Who will implement?	City's Economic Development Team will craft the policy, with input from Oregon Tech. The City Council will adopt the policy.
How will the action be funded?	Existing budgets for staff time; no dedicated funding source
How will the City know when it is done?	The City Council will adopt a policy demonstrating support for Oregon Tech.

5. QUALITY OF LIFE AND PUBLIC SERVICES

Action 5.1. Ensure that regulations support quality of life

What is the action?	City staff will continue to review building and development policies and procedures to (1) ensure that regulations that guide economic development will lead to a better quality of life in a cost-effective manner, and (2) evaluate whether there are actions that the City should take to maintain and enhance the quality of life.
Why is the City doing it?	<p>Residents and workers in Wilsonville value the high quality of life in the community. The National Citizen Survey of Wilsonville in 2012 showed that more than 90% of people think that Wilsonville is a good or excellent place to live and 75% think that the City is a good or excellent place to work.</p> <p>A key finding from the public process is that stakeholders want the City to make deliberate decisions to guide economic growth in ways that are compatible with community values and quality of life. City policies and regulations should balance growth with maintaining and enhancing Wilsonville's quality of life.</p> <p>The types of policies that City staff should review relate to public safety, environmental quality, aesthetics, parks, opportunities for live/work situations, and building forms. This evaluation is forward-looking, anticipating issues that may arise as Wilsonville grows.</p>
When will work begin?	Year 1, continue in Years 2 to 5
How does it work?	<p>This action is a continuation and extension of what City staff currently do, in concert with the Planning Commission. Staff will work with existing committees to (1) identify building and development business and economic development policies that directly affect quality of life for review, (2) identify potential changes to the policy to improve quality of life, (3) evaluate options for policy changes, and (4) decide what changes (if any) to recommend to decision-makers.</p> <p>In doing these evaluations, staff should cross-reference actions to streamline policies (Action 6.4). Streamlining regulations to make them faster or less expensive for businesses to comply with may have impacts on quality of life. These trade-offs should be considered when making changes to policies.</p>
Who will implement?	Community Development Department; support from the City administration, Planning Commission, and City Council
How will the action be funded?	Existing budgets for staff time; no dedicated funding source
How will the City know when it is done?	City staff will complete the evaluations and make recommendations to the Planning Commission regarding changes in regulations to maintain and enhance quality of life. The Planning Commission will decide which, if any, of the recommendations to forward to the City Council, who will adopt some or all of the recommendations.

6. BUSINESS COMMUNICATION AND SERVICES

Action 6.1. Develop a marketing plan

What is the action?	City staff will work with local partners in economic development to develop a marketing plan, including materials that document Wilsonville's advantages and amenities that are attractive to businesses.
Why is the City doing it?	The City can better meet its economic development goals if the City has a strategic marketing plan that describes the advantages businesses would have in locating in Wilsonville. Wilsonville's residents generally support encouraging economic growth. In response to the National Citizen Survey of Wilsonville in 2012, more than 90% of people support or strongly support actively recruiting businesses to Wilsonville and marketing the City to attract new businesses.
When will work begin?	Year 2
How does it work?	City staff would develop the marketing plan through working with the following partners: the Wilsonville Area Chamber of Commerce, Greater Portland Inc., Clackamas County Economic Development, and Business Oregon.
Who will implement?	City's Economic Development Team
How will the action be funded?	The City will need to identify a funding source to support developing the marketing plan.
How will the City know when it is done?	City staff will have a completed marketing plan.

Action 6.2. Develop criteria to guide the use of incentives to attract or retain businesses

What is the action?	Create a task force that will recommend criteria for the use of incentives to attract or retain businesses. The criteria should describe (1) where incentives would be used, (2) what businesses would qualify for incentives and under what conditions, (3) what types of incentives would be available to businesses, (4) the funding sources to support the incentives, and (5) expectations of businesses given incentives.
Why is the City doing it?	<p>The City has not used incentives to attract businesses and recently had a controversy over the proposed use of incentives. City staff and decision-makers recognize the importance of having clear policies to guide the use of incentives to attract or retain businesses. If the City is clear in advance about when incentives are acceptable and not acceptable, staff can respond better and faster to the opportunities for economic development that arise.</p> <p>In response to the National Citizen Survey of Wilsonville in 2012, 76% of residents support or strongly support providing financial incentives to help expand existing businesses and 69% support or strongly support providing financial incentives to attract new businesses. However, 24% or more of respondents opposed providing financial incentives to attract new businesses or retain existing businesses.</p>
When will work begin?	Immediately in Year 1
How does it work?	City staff and elected officials will work with stakeholder groups to identify membership for this task force. The task force will develop and recommend the criteria for making decisions about the use of incentives. The task force should coordinate with the work of the task force in Action 1.1 that addresses business attributes and impacts (the two task forces also could be combined into one). The City Council will review the recommended criteria and make a decision about adopting the criteria
Who will implement?	City Economic Development Team; support from the Community Development Department, City Manager's Office, and City Council
How will the action be funded?	Volunteer task force; existing budgets for staff time; no dedicated funding source. Additional budget may be needed to fund incentives
How will the City know when it is done?	At a minimum, the task force will deliver a report to the City Council. The Council may simply accept the report as guidance to staff or it may take more detailed action.

Action 6.3. Develop a program to assist existing businesses

What is the action?	City staff will develop a program to assist existing businesses. The program will include an outreach strategy to assess what assistance businesses want and need from the City and will evaluate the need for an economic development director at the City.
Why is the City doing it?	A key part of the City's approach to economic development is retention and expansion of existing businesses. The City can play a role in business retention through helping businesses through the City's development process and providing other assistance to businesses.
When will work begin?	Year 2
How does it work?	<p>City staff will work with community partners, such as the Wilsonville Area Chamber of Commerce, Greater Portland Inc., Clackamas County Economic Development, Business Oregon and others to develop the business assistance program. The basis for the program is outreach to existing businesses to assess how the City could assist businesses. This outreach may take the form of a survey or interviews with business owners and managers.</p> <p>One outcome of the evaluation may be that the City requires an economic development director to implement the program.</p>
Who will implement?	City Economic Development Team; support from the City Manager's Office and City Council
How will the action be funded?	<p>Existing budgets for staff time; no dedicated funding source for developing the program</p> <p>Additional budget may be needed depending on the recommendations to fund elements of the program</p>
How will the City know when it is done?	At a minimum, staff will develop a program, with recommendations to the City Council. The Council will accept, and if necessary, fund the recommendations.

Action 6.4. Streamline development code and permitting process

What is the action?	City staff will evaluate opportunities to streamline the development code and permitting process and will also identify changes in processes that can be made without revising the code.
Why is the City doing it?	The City recognizes the importance in helping businesses successfully complete the permitting process quickly. In response to the National Citizen Survey of Wilsonville in 2012, more than 80% of respondents supported or strongly supported streamlining the permitting process.
When will work begin?	Years 2 to 5
How does it work?	This action is a continuation and extension of what City staff currently do, working with the Planning Commission. Staff will work with existing committees to: (1) identify opportunities to streamline the development code and permitting process, (2) evaluate options for policy changes and whether changes will require changes to the code, and (3) decide what changes (if any) to recommend to decision-makers. In doing these evaluations, staff should understand the connections with actions to ensuring that regulations support quality of life (Action 5.1) and streamlining regulations. Policies that ensure quality of life may result in a slower or more costly development process. The City should consider these trade-offs when making changes to policies.
Who will implement?	Community Development Department, working with the Planning Commission
How will the action be funded?	Existing budgets for staff time; no dedicated funding source for the evaluation Additional budget may be needed depending on the recommendations to fund changes to policies
How will the City know when it is done?	At a minimum, City staff will deliver a report with recommendations to the Planning Commission. Planning Commission will decide which, if any, of the recommendations to forward to the City Council, who will adopt some (or all) of the recommendations.

4.3 NEXT STEPS

After the City Council adopts this Economic Development Strategy, the actions to complete first are Action 1.1 (Evaluating benefits to the community from attracting businesses) and Action 6.2 (Developing criteria for use of business incentives). These actions are essential to furthering implementation of the Strategy. The City must be clear on the desired community impacts of businesses and the incentives (if any) that the City will use to attract or retain businesses before it can fully implement any programs that have the goal of attraction or retention.

These actions should be completed within six months of adoption of this strategy. Once those actions are complete, the City should revisit the Strategy to evaluate whether the Strategy needs modifications. It would be appropriate and relatively straightforward to amend this document if necessary to reflect any changes to other actions in the Strategy. If its members were willing, the City could reconvene the Economic Development Advisory Committee to oversee and approve this task.⁴

In addition to the City's role of monitoring and updating the Strategy, the City must consider uncertainty and the need for flexibility in the Strategy. Information technology and globalization have increasingly made economies both more efficient and less predictable. Wilsonville has many of the fundamentals necessary for it to do well economically relative to its regional neighbors. But it has to choose carefully and adapt its choices to changing circumstances.

For example, there is now a broad technical and political consensus that Wilsonville's logical path for the development of new employment space is the Coffee Creek Area and, farther off, the Basalt Creek Area. But the cost of that development, the sources of funding, and the fiscal impacts on the City are not yet estimated.

Moreover, all the estimates of the need for that land come from an assumption that the U.S. and Portland economies will continue to grow and will demand the kind of space and locations that the Coffee Creek and Basalt Creek areas provide. Those assumptions are not unreasonable, but they will almost certainly have to be refined as events unfold.

⁴ Any revisions to the Strategy would include revisions to the section on *Next Steps* since those next steps will be different (or at least more specific) after Actions 1.1 and 6.2 are complete.

In that vein, the Economic Development Advisory Committee also noted that even though its process got to conclusions about a group of actions that seemed more important than others (i.e., those in Chapter 4 versus all those in Appendix C), it did not have time to dig into the details of the prioritization and funding of the actions in Chapter 4. There will inevitably be tradeoffs. For example, if the task force that addresses Action 6.2 on business incentives decides that incentives are merited under certain conditions. Will funding for those incentives come from taxes or an increase in fees, or will some other facility or service improvements be postponed? These decisions fall appropriately to the City Council. The Committee recognizes that the broad Strategy it has proposed must be flexible and implemented incrementally by City Council decisions about budget priorities.

The last row of each Action table in Section 4.2 asks “How will the City know when the action is done?” This Strategy has taken a short-run interpretation of that question and looks for a product and event that is clear and can be checked-off unambiguously. But the City should also consider a longer-run monitoring program that moves (in the language of performance measurement) from *outputs* to *outcomes*. Outputs are the intermediate products and actions (e.g., the adoption of plans and policies; the creation of programs and coordinating groups) that the City and its partners ultimately hope to will deliver desired outcomes: more economic development, building, jobs, tax revenue, community facilities and services, et cetera.

Thus, an additional action that the City should consider is creating a relatively simple set of performance measures and tracking them over time. Then, when the Strategy gets revisited and revised, the next Economic Development Advisory Committee will have direct information to help answer the question, Are the policies we are following getting us to the outcomes we desire?

Appendix A **List of Community Participants**

ECONOMIC DEVELOPMENT ADVISORY COMMITTEE MEMBERS AND ALTERNATES

Amy Dvorak, Planning Commission member
Ben Altman, Past-President, Wilsonville Chamber of Commerce; 2012
Chair, City Planning Commission
Brenner Daniels, Investment Advisor, Holland Partners Group
Clyde Holland, CEO, Holland Partners Group
Craig Olson, Sr. Director/Site Manager, Rockwell Collins
Dr. Chris Maples, President, Oregon Institute of Technology
Gale Lasko, General Manager, Lamb's Wilsonville Thriftway
Lita Colligan, Assoc. Vice President/Strategic Partnerships, Oregon
Institute of Technology
Lonnie Gieber, Wilsonville resident and Budget Committee member
Nancy Sage, VP/Sales, Xzeres Wind Corporation
Patrick Croasdaile, Marketing Specialist, Xzeres Wind Corporation
Marta McGuire, Wilsonville resident who serves on the Planning
Commission and Committee for Citizen Involvement
Ray Phelps, Past-President, Wilsonville Chamber of Commerce;
Commissioner, City Planning Commission; Commissioner, Clackamas
County Economic Development Commission
Scott Starr, Wilsonville City Council, Committee Co-Chair (ex-officio)
Steve Hurst, former Wilsonville City Council, Committee Co-Chair (ex-
officio)
Thomas Garnier, President, SSI Shredding Systems

BUSINESS LEADERS INTERVIEWED

Alan Kirk, Sr. VP/CFO, OrePac Building Products
Bill Sundermeier, President, FLIR Systems, Inc.
John Ludlow, Principal Broker, John Ludlow Realty Inc.
Jonathan Hill, Site Operations & Process Improvement Manager, Xerox
Corporation
Larry Gardner, Director of Worldwide Facilities, and **Ry Schwark**, Director
of Investor and Public Relations, Mentor Graphics Corporation

ECONOMIC DEVELOPMENT SUMMIT PARTICIPANTS

Alan Steiger, City Budget Committee
Amy Dvorak, City Planning Commission
Anne Easterly, Key Bank / City Budget Committee

Anthony Calcagno, T. Y. Lin International
Ben Altman, SFA Design Group LLC
Boyd Westover, Eaton Corp.
Brennar Daniels, Holland Partner Group
Brittany Miles, Oregon Tech / OIT
Bruce Bennett, Aurora Aviation
Carl Hosticka, Metro Council
Carolyn Hagemeyer, Costco
Catherine Comer, Clackamas County Economic Development
Cindy Hagen, Clackamas County Economic Development
Charlotte Lehan, Clackamas County Board of Commissioners
Richard Goddard, Wilsonville City Council
Dan Griffin, TVFR
Danielle Cowan, Clackamas County Tourism & Cultural Affairs
Dave Murray, Convergence
David Stead, Langdon Farms Golf Club
Doris Wehler, Cookies By Design
Elizabeth Peters, Oregon Veterans Foundation
Eric Postma, City Planning Commission
Jennifer Johnson, Wilsonville Chamber/Visitor Center, Oregon Horse
Country
Jim Bernard, Clackamas County Board of Commissioners
Jim Crowell, Clackamas County Economic Development Commission; e-
Tech
John Ludlow, John Ludlow Realty
Jonathan Schlueter, Westside Economic Alliance
Lindsay Berschauer, Oregon Transformation Project
Mary Swanson, Swanson Partners LLC
Maureen Showalter, CCCF-Coffee Creek Correctional Facility, Oregon
Dept. of Corrections
Melody Heuer, Windfield Village
Monica Keenan, Old Town Rep /City Development Review Board
Mychelle Ashlok, NW Rugs
Nancy Sage, Xzeres Wind
Pat Johnson, Wilsonville Chamber of Commerce
Paul Savas, Clackamas County Board of Commissioners
Peter Hurley, City Planning Commission
PK Melethil, Melethil Acupuncture Services
Rick Peters, Oregon Veterans Foundation
Sandra Suran, The Suran Group
Sorin Garber, T. Y. Lin International
Steve Gilmore, Wilsonville Chamber of Commerce
Steve Wheeler, Clackamas County Administration Dept.
Susan Myers, Capital Realty

Suzy Sivyer, Friends of the Library
Ted Millar, Southend Corporate Airpark
Theresa Taaffe, PGE
Tony Holt, Charbonneau Country Club
Vern Wise, Retired
Wendy Buck, PGE; Wilsonville Chamber of Commerce; City Budget Committee

FOCUS GROUPS PARTICIPANTS

Adrian Polliack, PhD, President, Sam Medical Products
Al Levit, Member, City Planning Commission
Andrew Karr, Member, City Development Review Board
Anne Easterly, Member, City Budget Committee; Small Business Relationship Manager, KeyBank Business Banking; Board Director, Strategic Economic Development Corp. (SEDOR)
Bob Oleson, Principal, Oleson Consulting
Boyd Westover, Plant Manager, Eaton Corporation
Brad Hansen, President, Wilsonville Rotary Club Foundation; Mortgage Consultant, Guild Mortgage Company
Carol White, Past-Vice-President, Charbonneau Country Club
Chad Freeman, Business Development Officer, Oregon Business Development Department
Cindy Hagen, Recruitment Specialist, Clackamas County Economic Development
Cindy Tyree, Member, City Parks & Recreation Advisory Board
Dale Hoogestraat, Board Chair, West Linn-Wilsonville School District
Danielle Cowan, Executive Director, Clackamas County Tourism & Cultural Affairs (CCTCA)
Dave Bernert, CEO, Wilsonville Concrete Products
Dave Jachter, GM/Owner, Wilsonville Toyota
David Brandstaetter, Director of Operations, Pioneer Pacific College
Donna Bane, President, Wilsonville Kiwanis
Fred Osborn, Education Director, Pioneer Pacific College
Gary Barth, Deputy Director, Economic Development, Clackamas County Economic Development
Jeff Brown, General Manager, Holiday Inn - South Portland/Wilsonville
Jennifer Johnson, Tourism Director/Visitor Center Manager, Wilsonville Chamber of Commerce / Clackamas County Regional Visitor Center
John Schenk, Member, City Development Review Board
Jonathan Schlueter, Executive Director, Westside Economic Alliance
Ken Rice, Member, City Parks & Recreation Advisory Board

Kim Parker, Executive Director, Clackamas County Business Alliance (CCBA); Executive Director, Workforce Investment Council of Clackamas County (WICCO)

Laura LaJoie, Principal, Joy of Life Chiropractic Clinic

Lenka Keith, Member, City Development Review Board

Mary Furrow, President, Furrow Pump, Inc.; former Board Chair, West Linn-Wilsonville School District

Melinda Merrill, Director of Public Affairs, Fred Meyer Stores

Michelle Labrie-Ripple, Principal, NW Automation & Control; Former Wilsonville City Councilor; Former Chair, City Advisory Committee on Master Planning

Mick Scott, Historian, Wilsonville-Boones Ferry Historical Society

Monica Keenan, Member, City Development Review Board

Peter Hurley, Member, City Planning Commission

Ryan Gillett, VP/Operations, SYSCO Food Services of Portland

Shelly Parini, Dean of College Advancement, Clackamas Community College Foundation

Shelly Tracy, Director, Wilsonville Training Center, Clackamas Community College

Stacey Rungay, Principal Broker, Wilsonville Realty

Susan Myers, General Manager, Capital Realty Corp.

Teresa Portner, Store Director, Albertsons

Theresa Decker, Administrator, Marquis Care at Wilsonville

Theresa Taaffe, Economic Development Manager, PGE - Economic Development

Tony Holt, Member, City Budget Committee

Summary of Focus Groups and Summit

This appendix presents brief summaries of key findings from discussion with stakeholders at the focus groups and summit.

FOCUS GROUP SUMMARY

ECONorthwest conducted four focus groups with stakeholders in Wilsonville on April 12, 2012 to discuss economic development issues in Wilsonville. The results of those discussions are summarized in the memorandum "Summary from Economic Development Focus Groups," which is available from the City. This section briefly discusses the implications of the focus group discussions for Wilsonville's economic development strategy.

Issues identified in the focus groups that will require consideration in the economic development strategy are:

- **Deliberate economic growth.** The focus group participants all supported economic growth in Wilsonville, with no participants advocating no-growth. Participants indicated that growth should be "deliberate." The City should not chase just anything; instead it should go after businesses that fit into a larger strategy of economic development and livability. A foundational assumption for the economic development strategy is that Wilsonville should plan for growth but make deliberate decisions about trade-offs between promoting growth and maintaining (or increasing) livability.
- **City identity.** The discussion in each focus group touched on the perception that Wilsonville does not have a clearly articulated city identity. The economic development strategy should contribute to the discussion of the City's identity by addressing questions about: (1) the sort of community Wilsonville wants to be in the future, (2) the City's priorities for economic development, (3) who the City's policies will serve (e.g., residents, businesses, employees, or others), and (4) the policies to serve each group.
- **Types of businesses to attract.** Participants generally agreed that Wilsonville's advantages for economic development are so great that the City can attract the growth that the City wants. There have been recent disagreements about the types of business that the City should attract. For example, should the City choose to attract

Cabela's because it would bring jobs and attract shoppers from across the Portland region and beyond? A business like Cabela's will use resources (e.g., land and transportation capacity) that will not be available for other businesses. Some of these resources may be unique and difficult to replace, such as serviced land suitable for industrial uses. The economic development strategy should provide guidance about the types of businesses that the City wants to attract.

- **Incentives for attracting businesses.** Several of the focus groups discussed the use of incentives for attracting new businesses (e.g., reductions in systems development charges, property tax reductions, provision of infrastructure). The discussions did not come to agreement about whether incentives should be used and, if so, which incentives are appropriate. The economic development strategy should articulate the City's policies about use of incentives. If incentives are used, the strategy should give guidance on: (1) the types of businesses that are eligible for incentives, (2) the conditions under which incentives would be offered, and (3) the incentives available to businesses in specific conditions.
- **Workforce development.** Each focus group discussed the importance of workforce development for: (1) existing businesses with workers who need new training, (2) existing businesses who have difficulty finding qualified workers, and (3) attracting businesses that consider locating in Wilsonville but will need specially trained workers. The economic development strategy should guide coordination on workforce development efforts with education and training organizations and the City.
- **Jobs and housing balance.** Discussions in the focus groups emphasized the importance of increasing the jobs and housing balance through creating opportunities for affordable workforce housing. Jobs and housing balance is related to workforce development because residents of Wilsonville have (and will have greater) access to workforce training in Wilsonville. The economic development strategy should address the jobs and housing imbalance.
- **Coordination with the Chamber.** Participants discussed the need for greater coordination with the Chamber on economic development planning. The economic development strategy should clarify roles within the community for economic development and increase coordination between the City and the Chamber.

SUMMIT SUMMARY

The City of Wilsonville held a public summit to discuss ideas for the economic development strategy on May 31, 2012. Approximately 60 people participated in the summit. This section summarizes discussions of small-group discussions at the summit. A more detailed summary of feedback from the summit is presented in the memorandum "Notes: Wilsonville economic development summit" dated June 1, 2012, which is available from the City.

Summit participants discussed and provided feedback on at least one of the following eight-breakout discussion topics:

- **Vision statement.** Participants provided comments about the draft vision statement. In general, they found it too long, wordy, and vague. They suggested that the vision statement should be more inspiring, motivating, and exciting for the community. They wanted the statement to focus on what Wilsonville offers that is unique for economic development.
- **Desired type of development.** Participants discussed a range of topics: land available for economic development in Wilsonville, issues related to the regional urban growth boundary, types and characteristics of businesses that may be appropriate for Wilsonville, the City's role in attracting and retaining businesses, the imbalance of jobs and housing, and issues related to quality of life. Participants suggested that the City should be clear about what types of development it wants and pay close attention to providing infrastructure and protecting the land base.
- **Land and buildings.** Participants provided ideas about the efficient use of land, such as infill and redevelopment strategies. Participants discussed what would be necessary to accommodate employment growth in the Coffee Creek and Basalt Creek areas, such as development policies or financing options for providing public infrastructure. Participants discussed long-term strategies for accommodating growth, after the Basalt Creek area is developed.
- **Transportation and infrastructure.** Discussion focused on the role of transportation in economic development. Participants discussed the need for better north-south automotive infrastructure within Wilsonville and potential capacity issues at the Boone Bridge on I-5. Participants discussed Wilsonville's opportunities related to the Aurora Airport, SMART, rail lines, and bike paths. Participants discussed infrastructure funding issues and the need to coordinate

infrastructure development with stakeholders internal to the City and external stakeholders (e.g., ODOT).

- **Workforce development.** Comments in this group focused on how the City can work with Oregon Tech, such as including Oregon Tech in the City's discussions about economic development. In addition, Oregon Tech is hopeful that the City will expand SMART service to provide evening and weekend students with options for transportation.
- **Quality of life and public services.** Discussion in this group focused on the desire to balance economic development with maintaining and enhancing the existing quality of life for residents and workers in Wilsonville.
- **Business services, process, and communication.** This group discussed business communication with the City. Suggestions for improving the business climate in Wilsonville included: streamlining the permitting and development process, improving communication between the City and existing businesses, and improving Wilsonville's marketing efforts to prospective businesses. Participants advised the City to maintain high standards and to protect the high quality of life in the City.
- **Potential business incentives.** The group discussed the tension between a targeted approach to economic development that attracts and incents specific types of businesses and an approach that focuses on ensuring that the fundamentals that support any business are in place. If the City offers business incentives, participants generally agreed that the City should establish a set of criteria by which incentives might be distributed. They thought the criteria should not give incentives to businesses based on job classification or income, but rather should focus on evaluating the degree to which potential incentive recipients participate in community-building activities. The criteria should answer questions such as: Will the business be a good civic partner? What is its track record of community contributions?

List of Actions Considered

This appendix summarizes a longer list of actions considered by the Advisory Committee and its initial assessment. From this longer list, the Advisory Committee selected the Actions in Chapter 4 as the top priorities for immediate implementation.

Action	Assessment and Priority
Goal 1: Local agreement on amount, type, location, and pattern of development	
Use the economic opportunities analysis as the guide for planning the amount of employment growth	Important, 1st Year
Work with stakeholders to develop criteria to identify the types of businesses that Wilsonville wants to attract based on the impacts on the community, use of existing infrastructure, and other characteristics identified as important (e.g., high wage jobs, benefits of the business for existing residents, new or existing businesses, or size of business)	Important, 1st Year
Develop amenities and assets that encourage the growth of particular industries (e.g., retail, tourism, business services, or manufacturing)	Not included in strategy
Goal 2: Land and buildings	
Engage the public in a dialogue about potential changes in land use, such as proposed zoning amendments, annexations, and policies to promote infill and redevelopment	Important, 1st Year
Develop policies to promote reuse of vacant industrial buildings, such as inventorying vacant built space	Important, 1st Year
Develop policies to promote infill and redevelopment in specific areas, such as Town Center, or with specific sites, such as sites with vacant warehouses	Important, Years 2 to 5
Establish development districts with buildable land in places with a high priority for development, including developing land use policies to support the desired development forms	Important, Years 2 to 5
Develop policies to provide a supply of prime industrial land in the Coffee Creek Master Plan Area	Important, Years 2 to 5
Develop policies to provide a supply of employment land in the Basalt Creek Area	Long-term
Provide an adequate supply of buildable land in varying locations and sizes to accommodate growth (the EOA has addressed this issue)	Not included in strategy
Provide municipal services to unserved industrial land	Not included in strategy
Work with property owners to ensure that prime employment development sites throughout the City are preserved for future employment needs and are not subdivided or used for non-employment uses	Not included in strategy
Work with property owners to ensure that prime development sites throughout the City are known, aggregated, ready to develop, and marketed	Not included in strategy

Action	Assessment and Priority
Encourage development of energy efficient building codes, practices, and operations	Not included in strategy
Provide an adequate supply of land that can be developed within one-year (the EOA has addressed this issue)	Not included in strategy
Adopt policies that preserve regionally significant industrial areas to discourage or prohibit land divisions	Not included in strategy
Goal 3: Transportation and other infrastructure	
Coordinate capital improvement planning and funding with land use, transportation and other infrastructure planning to ensure that infrastructure is available for employment land, especially areas identified as having a high priority for development	Important, 1st Year
Work with ODOT and regional partners to plan for major Interstate-5 transportation projects and provide access and connections	Not Directly Economic Development
Improve connectivity within the local street system to minimize barriers created by I-5, the Willamette River, and other barriers	Not Directly Economic Development
Provide adequate public transit to support employment for a range of income groups and students at educational institutions, with expanded hours of operation to provide service throughout the weekday and on weekends	Not Directly Economic Development
Identify funding options for wastewater and municipal water system expansion and incorporate the new information into the Capital Improvement Plan (CIP)	Not Directly Economic Development
Address parking issues in areas with insufficient parking	Not Directly Economic Development
Study the feasibility of building the proposed French Prairie Bridge over the Willamette River for bicycle, pedestrian, and emergency vehicle access and to promote bicycle-tourism	Not included in strategy
Goal 4: Workforce development	
Develop a program to coordinate the connections between businesses with organizations that do workforce training, including identifying key stakeholders and working with businesses to understand training needs	Important, 1st Year
Adopt a policy that expresses the City's willingness to collaborate with Oregon Tech to help it succeed in its mission of training and education and the City's	Important, 1st Year
Make changes to SMART schedules to provide bus service to Oregon Tech students who take classes on evenings and weekends	Not Directly Economic Development
Attract businesses that Oregon Tech can provide workforce training for Note: There is disagreement in Wilsonville about the idea of targeting attraction of specific types of businesses. We need more input about whether to include this in the strategy as an action	Not included in strategy
Assist the school district with funding under specific conditions	Not included in strategy

Action	Assessment and Priority
Provide coordination to identify and encourage "spin-off" ventures from OIT through technology-transfer and other tools	Not included in strategy
Goal 5: Quality of life and public services	
Develop policies to ensure that economic growth does not outpace growth of public services and infrastructure capacity, so that livability is not compromised	Important, 1st Year
<p>Balance maintaining the high quality of life and livability in Wilsonville with economic development aspirations by being selective of the types of businesses that Wilsonville allows</p> <p>Note: There is disagreement in Wilsonville on this idea. We need more input about whether to include this in the strategy as an action</p>	Not included in strategy
Evaluate the diversity of housing options to meet needs of changing demographics	Not included in strategy
Encourage development of affordable workforce housing to increase the balance of jobs and housing	Not included in strategy
Inventory cultural resources and amenities that enhance the community's quality of life.	Not included in strategy
Encourage participation in City events by the business community	Not included in strategy Development
Provide public services that help residents facing "situational poverty"	Not included in strategy
Goal 6: Business communication and services	
Work with local partners in economic development to develop a marketing plan, including materials that document Wilsonville's advantages and amenities that are attractive to businesses	Important, 1st Year
Develop criteria for making decisions about the use of incentives to describe where incentives would be used, what businesses would qualify for incentives, and expectations of businesses given incentives	Important, 1st Year
Create an ombudsman position to assist businesses, connect businesses to other organizations (e.g., workforce development agencies), and advocate for economic development	Important, Years 2 to 5
Streamline the sign code and permitting process, including evaluating barriers to development in the development code	Important, Years 2 to 5
Develop and implement an outreach strategy to determine how the City can assist existing businesses	Long-Term
Assess the needs of existing businesses to identify actions the City can take to keep businesses in the City	Important, Years 2 to 5
Leverage social media use in the City's branding and marketing efforts. Several actions in the May survey encouraged increased communication and coordination among the City and stakeholder groups. This idea is incorporated into the actions, throughout the categories of actions	Not included in strategy

King, Sandy

From: Steve Gilmore <Steve@wilsonvillechamber.com>
Sent: Monday, August 20, 2012 3:47 PM
To: Celia Nunez (celianunez01@gmail.com); Richard Goddard (richardgoddard2010@gmail.com); Scott Starr (sstarr@guildmortgage.net); Mayor Tim Knapp; Cosgrove, Bryan
Cc: Lashbrook, Stephan; Ottenad, Mark; Rachel Stark (rstark@oregonian.com)
Subject: Economic Strategy Passage Letter 8 20 12 (2)
Attachments: Economic Strategy Passage Letter 8 20 12 (2).pdf

Friends,

Thank you for all of your hard work on this very important issue. We appreciate all of your efforts!!

Steve

WILSONVILLE
AREA CHAMBER OF COMMERCE
A South Metro Business Advocate

August 20, 2012

To: Wilsonville City Council

CC: Bryan Cosgrove, City Manager, City of Wilsonville

From: Wilsonville Area Chamber of Commerce Board of Directors

Re: Economic Development plan and EOA update

The Wilsonville Chamber of Commerce is pleased to support passage of the economic development strategy. We strongly encourage that the city council discuss and work with the community on the prioritization and budget to implement the strategy. The Wilsonville Chamber of Commerce appreciated working with city staff, EcoNW consultants, and the many of community volunteers on the development of the strategy.

We believe this is a good first step in focusing on economic development in a way that is inclusive and considers the values that are important to the community. We appreciated the process which included business leaders, concerned citizens, Clackamas County officials, Aurora State Airport representatives, and officials from West Linn-Wilsonville School District and Oregon Institute of Technology.

The chamber is uniquely positioned to help with business expansion and retention efforts, and recently sent a memo to the city outlining programs that we are currently analyzing.

Economic development efforts need to be about collaboration, and we are fully committed to working with the city on any effort that will bring more jobs, and in turn, more resources for the city and community.

Please let us know how we can continue to support this vital effort to continue to improve the health of Wilsonville's economy. We fully support your passage of the economic development strategy and once again voice our continued commitment to work with the city on these efforts.

If you have any questions regarding this letter, feel free to contact Wilsonville Chamber CEO Steve Gilmore at 503-682-0411.

Thank you,

Wilsonville Area Chamber of Commerce Board of Directors

Resolution No. 2376

A Resolution of the
Wilsonville City Council Adopting
the Wilsonville Economic
Development Strategy of 2012

Wilsonville City Council Meeting

August 20, 2012

Resolution No. 2376

**A Resolution of the
Wilsonville City Council Adopting
the Wilsonville Economic
Development Strategy of 2012**

**Presented by City “Ec-Dev” Team:
*Stephan Lashbrook, Mark Ottenad
and Kristin Retherford***

Resolution No. 2376

Adopting Economic Development Strategy

City Council Goals for 2011-12:

*“Develop, Adopt and Begin
Implementation of a
Comprehensive Economic
Development Strategy.”*

Resolution No. 2376

Adopting Economic Development Strategy

City Manager Implemented

City Council Goal:

- *Economic Opportunity Analysis (EOA) update by FSC Group*
- *Economic Development Strategy process by ECONorthwest*

Resolution No. 2376

Adopting Economic Development Strategy

Economic Development Advisory Committee (EDAC):

- *Co-Chaired by City Councilors
Steve Hurst and Scott Starr
(ex-officio)*
- *14 members/alternates recruited
and appointed by City Manager*

Resolution No. 2376

Adopting Economic Development Strategy

Economic Development Advisory Committee (EDAC):

- *Diverse membership of community, both residential and business*
- *Major industrial employer, retailer, manufacturers, developer, higher-ed, chamber of commerce, residents*

Resolution No. 2376

Adopting Economic Development Strategy

Economic Development Advisory Committee (EDAC):

- *Five meetings over four months*
- *Four focus-group meetings with 40+ participants*
- *Economic Development Summit with 60+ participants*

Resolution No. 2376

Adopting Economic Development Strategy

City Council:

- *Council members active participation in EDAC and Summit discussions*
- *August 6 special joint work session of City Council and Planning Commission*
- *August 20 City Council meeting*

Resolution No. 2376

Adopting Economic Development Strategy

Next Steps to Implement Economic Development Strategy:

- *City Manager to establish task force(s)*
- *Further review and recommendations:*
 1. *“Targeted” business recruitment and retention of specific sectors*
 2. *Possible use of financial incentives*

Resolution No. 2376

Adopting Economic Development Strategy

Next Steps to Implement Economic Development Strategy:

- *Planning Commission may consider changes to Comprehensive Plan if called for in strategy*
- *City Manager returns to Council with implementation work plan*

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Wilsonville City Council Meeting
August 20, 2012

**CITY COUNCIL MEETING &
 URBAN RENEWAL AGENCY MEETING
 STAFF REPORT**

Meeting Date: August 20, 2012	Subject: Resolution No. 2377; Addendum No. 4, Matrix Development Agreement, a Previous Agreement Between Multiple Parties for a Portion of Villebois Village Staff Member: Nancy Kraushaar, PE Department: Community Development
Action Required	Advisory Board/Commission Recommendation
<input type="checkbox"/> Motion <input type="checkbox"/> Public Hearing Date: <input type="checkbox"/> Ordinance 1st Reading Date: <input type="checkbox"/> Ordinance 2nd Reading Date: <input checked="" type="checkbox"/> Resolution <input type="checkbox"/> Information or Direction <input type="checkbox"/> Information Only <input type="checkbox"/> Council Direction <input type="checkbox"/> Consent Agenda	<input checked="" type="checkbox"/> Approval <input type="checkbox"/> Denial <input type="checkbox"/> None Forwarded <input type="checkbox"/> Not Applicable Comments:
Staff Recommendation: Staff recommends the City Council adopt Resolution No. 2377.	
Recommended Language for Motion: I move to approve Resolution No. 2377.	
PROJECT / ISSUE RELATES TO: <i>[Identify which goal(s), master plans(s) issue relates to.]</i>	
<input type="checkbox"/> Council Goals/Priorities	<input checked="" type="checkbox"/> Adopted Master Plan(s) Villebois
<input type="checkbox"/> Not Applicable	

ISSUE BEFORE COUNCIL:

The subject Addendum No. 4 amends the Matrix Development Agreement (for portions of Villebois Village) which was originally between Matrix Development Corporation, several property owners, and both the City of Wilsonville (City) and the City of Wilsonville Urban Renewal Agency (URA).

Council action by resolution is needed to approve Addendum No. 4 for the City.

Addendum No. 4 documents the responsibilities to be undertaken by a new party (Polygon Northwest Company, LLC) when they acquire property that is subject to the existing development agreement. It also clarifies pertinent City and URA obligations. See attached Vicinity and Location Map for location of the property in Villebois Village.

EXECUTIVE SUMMARY:

In 2004, the City and the URA entered into the Matrix Development Agreement with Matrix Development Corporation and several property owners. The agreement addresses the subject parties' obligations regarding the development of portions of the Villebois Village Master Plan.

That agreement was since amended by Addenda Nos. 1, 2, and 3 as approved by the City Council and Urban Renewal Agency. These addenda were needed to address refinements to financial, construction, and maintenance roles and responsibilities for infrastructure and parks. The addenda also added new parties to the agreement.

Addendum No. 4 has now been prepared to address the responsibilities of Polygon Northwest, LLC (Polygon) in anticipation of their potential purchase of a property (the Bischof/Lund property) that is subject to the Matrix Development Agreement. Addendum No. 4 applies to the City, the URA, and Polygon and clarifies their respective obligations if Polygon acquires the property and receives approvals for the portion of the Villebois Village Master Plan referred to as SAP East, PDP-3 ("PDP-3E"). This area is contemplated to include approximately 184 lots. Addendum 4 addresses the parties' obligations for financing, reimbursement, and construction for parks, roads, sewer, and water improvements.

EXPECTED RESULTS:

The Addendum No. 4 agreement prepares the parties for further development of the Villebois Village Master Plan and assures that Polygon, the City, and the URA have agreed and committed to their obligations when Polygon purchases the Bischof/Lund property.

TIMELINE:

The Addendum No. 4 agreement could result in further development in this area of the Villebois Village Master Plan within the next 2 to 5 years.

CURRENT YEAR BUDGET IMPACTS:

There are no expected FY 2012-13 budget impacts.

FINANCIAL REVIEW / COMMENTS:

Reviewed by: JEO_____ Date: 8/10/12_____

No financial impact.

LEGAL REVIEW / COMMENT:

Reviewed by: MEK__Date: _8/7/2012_

The Resolution is approved as to form. The Agreement was negotiated by the City Engineer and the City Attorney. Due to the Matrix bankruptcy and the inclusion of the Lowrie Primary School, the Matrix Development Agreement was amended and the City agreed to take on the primary

role of designing and constructing Regional Park 7 and 8 with no timeline for development. Addendum 4 allows the City to have Polygon be assigned the task of design and constructing Regional Park 7 and much of Regional Park 8 with the intent that this occur at the beginning of Polygon's development. Additionally, the Addendum also anticipates two further agreements: one that would allow the extension of Villebois Drive west of 110th and one that would have Polygon purchasing the surcharge rock being used on the Boeckman extension repair project that would allow a major recoupment of costs for the City.

COMMUNITY INVOLVEMENT PROCESS:

Public outreach specific to the Addendum No. 4 agreement was not undertaken. However, the outcome of the documented obligations are consistent with the adopted Villebois Village Master Plan.

POTENTIAL IMPACTS or BENEFIT TO THE COMMUNITY:

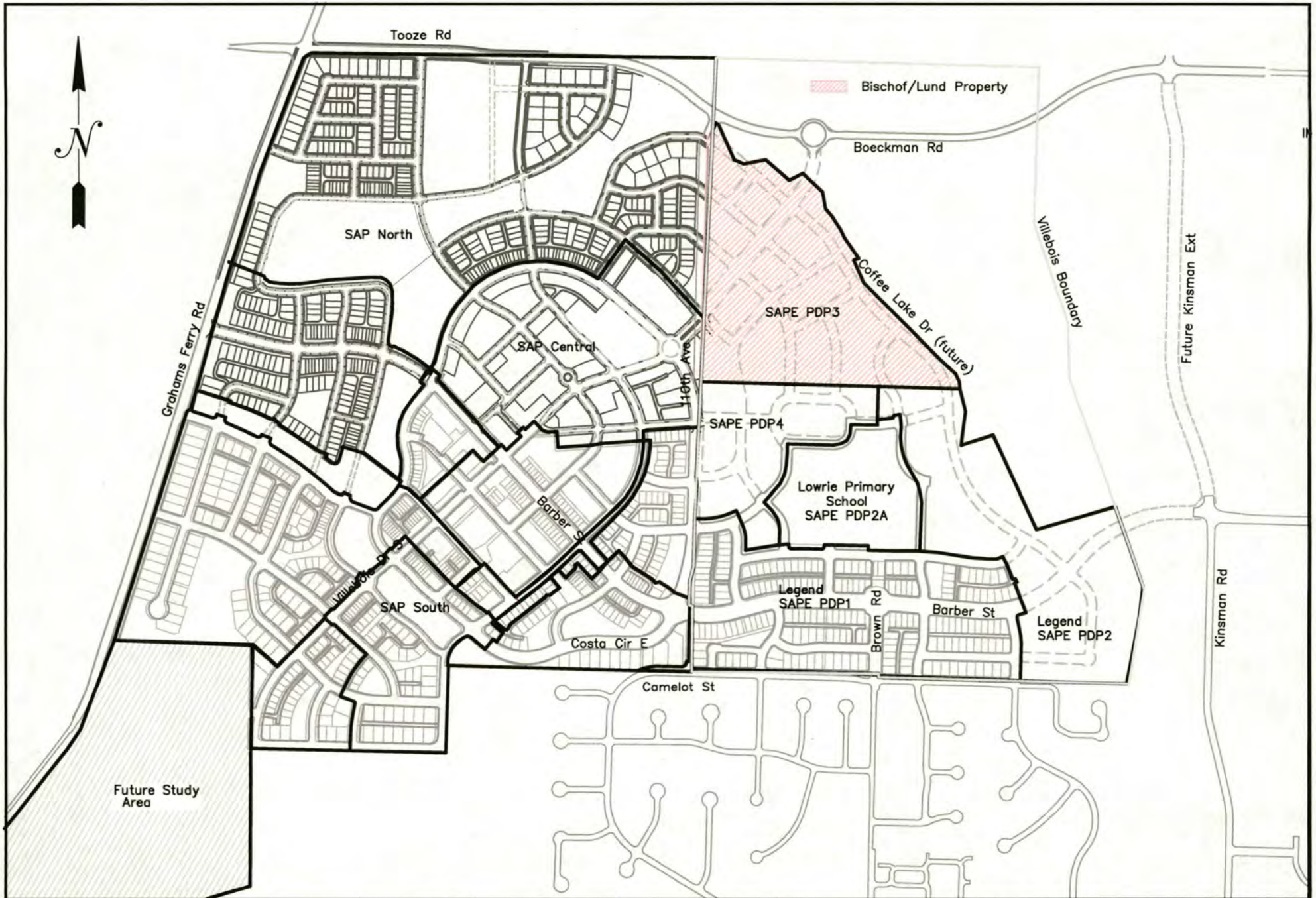
The Addendum No. 4 agreement allows for continuation of public and private partnering for the financing and construction of public improvements in Villebois that are consistent with the adopted master plan and will benefit existing and future Villebois residents as well as the Wilsonville community (residents, visitors, students, and the business community) who use the park, road, water, and sewer improvements in the area.

ALTERNATIVES:

Not applicable.

ATTACHMENTS

- A. Location Map
- B. Summary of Development Agreement History for Villebois SAP-E and Reimbursement District
- C. Resolution No. 2377
- D. Addendum No. 4 to the Development Agreement



Location Map
Bischof/Lund Property

Aug 13, 2012

SCALE: N.T.S.

DRAWN BY: SR

CITY OF WILSONVILLE



Engineering Division

SUMMARY OF
DEVELOPMENT AGREEMENT HISTORY
FOR VILLEBOIS SAP-E AND REIMBURSEMENT DISTRICT

1. The Villebois Master Plan is a land use plan regulating the development of approximately 500 acres of a planned, mixed use community of internal commercial and a mix of an anticipated 2,600 residential uses, with trails, parks, and open spaces, supported by approximately \$140 million in infrastructure improvements. In approximately June 2004, for the purposes of developing home sites within the Villebois Master Plan area, Matrix Development Co. (Matrix) acquired certain land interests in approximately 150 acres of land east of 110th Street and entered into the 2004 Matrix Development Agreement. This acreage subsequently became known under the Villebois Village Zoning Code as Special Area Plan East (SAP-E). In this regard, Matrix purchased the Kirkendall property, succeeding to their interests in the Matrix Development Agreement; purchased some of the property owned by DeArmond/Fasano and optioned to purchase the balance; purchased some of the property owned by Bischof/Lund and optioned to purchase the balance; purchased a portion of the property owned by Arthur C. and Dee W. Piculell, and purchased development rights to mitigate wetlands on the balance not purchased.
2. In conjunction with the purposes of acquiring the aforementioned property and developing it, Matrix entered into certain loan agreements with Wachovia Bank (now Wells Fargo Bank), which included financing certain of the land purchases and development costs and providing Wachovia with security interests therein.
3. Matrix was authorized to enter into, and participate on behalf of the parties in, the adoption of the land use planning regulations for the properties to implement the Villebois Master Plan, including but not limited to the provisions of Coffee Lake Drive and the Coffee Lake Drive Sewer Line. It was anticipated that Matrix would be developing 655 single family dwelling units.
4. Subsequently, after developing a portion of the southern section of its development, which was known as Special Area Plan East, Preliminary Development Plan 1 (SAP-E, PDP-1), Matrix and its construction entity, Legend Homes, Inc. ("Legend"), filed for Chapter 11 bankruptcy protection in the United States Bankruptcy Court for the District of Oregon, Case No. 08-32798-tmb 11. On May 11, 2010, the Bankruptcy Court adopted the Matrix Second Amended Reorganization Plan ("Reorganization Plan"), effective June 1, 2010. As part of the proceedings, Matrix abandoned its optioned property to the above referenced owners and, through the Reorganization Plan, certain of its other property was transferred to Wells Fargo, as successor in interest of Wachovia Bank, and subsequently assigned to its property development company, Redus OR Lands, LLC ("Redus Property"). Under the Reorganization Plan, Matrix and Legend merged into a reorganized single entity, Legend, and Legend retained the land and development of SAP-E, PDP-1. Prior to the bankruptcy and the abandonment, Matrix had proposed a portion of the balance of the property to be developed as SAP-E, PDP-2, and a map depicting the proposed lot development is marked as **Exhibit 1**, attached hereto and

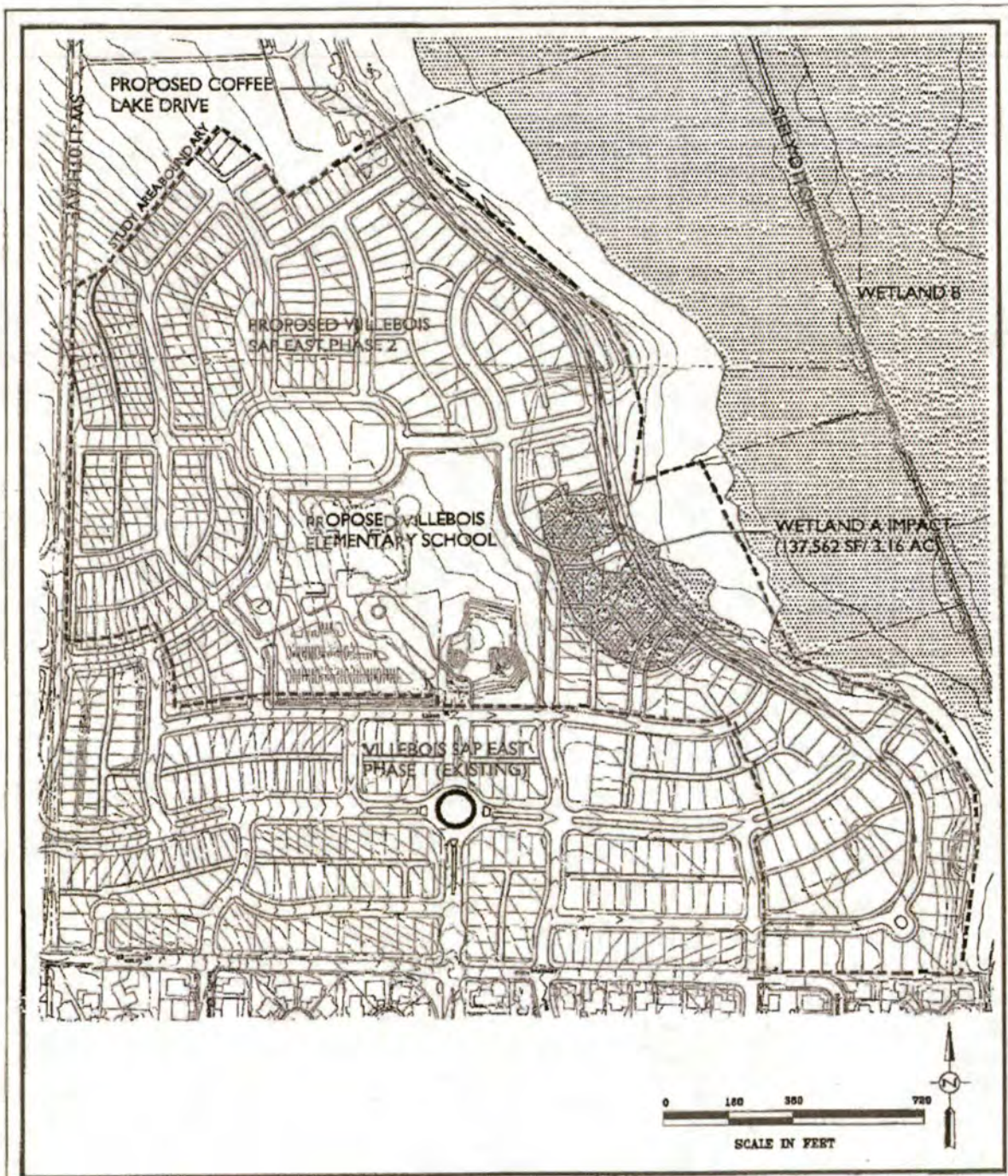
incorporated by reference herein. A map depicting the respective interests after abandonments is marked as **Exhibit 2**, attached hereto and incorporated by reference herein.

5. As part of the Reorganization Plan, Legend was relieved of infrastructure costs associated with SAP-E, PDP-1, including but not limited to Coffee Lake Drive and the Coffee Lake Drive Sewer Line. A separate amending agreement of the Matrix Development Agreement between the City, the URA, and Fasano/DeArmond, and a second separate amending agreement between the City, the URA, and Redus were reached in order for the City and the URA to acquire land from each of the ownerships for the construction of a grade school by the West Linn-Wilsonville School District (“District”) within portions of then PDP-1 and PDP-2. See discussion below. Subsequently, Redus obtained City development approval, subject to conditions, of an 88-lot subdivision for land that Redus now owns within PDP-2. This subdivision is now referenced as SAP East, PDP-2 (hereinafter “PDP-2”). Fasano/DeArmond has not yet applied for development approval.
6. The City, the URA, and a third-party developer, Polygon Northwest Company, L.L.C., who anticipates purchasing the Bischof/Lund Property pursuant to an agreement with Bischof/Lund, are in the process of amending the Matrix Development Agreement to provide the framework for development of the Bischof/Lund Property. This land contains 192 lots, as originally proposed by Matrix for the Bischof/Lund Property. Polygon proposes 184 lots rather than 192 due to wetland conditions. This 184 lot subdivision will now be known as SAP East, PDP-3 (hereinafter “PDP-3”).
7. The Villebois Master Plan required that a 10-acre site be designated for a grade school and sports fields. The designated land was initially located west of 110th and adjacent to Tooze Road. The School District, in anticipation of building at the Tooze Road site, had passed a bond issue to build the school. Due to the recessionary economic conditions, the housing development needed to support the extension of infrastructure to the Tooze Road site was delayed and therefore funding for the improvements needed for Tooze Road improvements was not available. There was an immediate need for the school to serve over-crowded conditions and also to avoid bond arbitrage issues. Given the aforementioned lack of funds for extending infrastructure to the Tooze Road site, the Villebois Master Plan was amended to provide for a substituted school site with a lower infrastructure cost, at an estimated savings of \$4 million. The URA and the City purchased property from Legend, Redus, and DeArmond/Fasano and combined the purchased parcels into one site. This approximate 10-acre site was made part of an exchange agreement with the School District for an approximate 10-acre site east of the City for recreational purposes. A reduced copy of page 1 of Partition Plat No. 2010, depicting the school site (Parcel 2) and a plan layout of the school site, is marked as **Exhibit 3**, attached hereto and incorporated by reference herein.
8. The District entered into an Infrastructure Development Agreement with the City and the URA. As part of the negotiation with Fasano/DeArmond, Redus, and also Bischof/Lund, the details of the Infrastructure Agreement were shared with all parties. Under the Infrastructure Development Agreement, the District provides certain infrastructure to

serve the school, such as local roads, storm drainage, and sewer lateral lines. Some of this infrastructure was oversized and provides extra capacity, which will benefit the neighboring properties. This entitles the District to reimbursement from the benefitting properties at time of development of the benefitting properties through a Road and Utility Reimbursement District. There was also a need for the school to be tied into the proposed Coffee Lake Drive Sewer Trunk Line, which was on land that Redus acquired in the reorganization. The construction of the trunk line was not funded and would normally be constructed by the developer of the land in conjunction with development under an SDC methodology, with credit for oversizing by the responsible developer. Although Redus had sought and received development approval for the 88 lot PDP-2, Redus was not a developer and did not intend any immediate sale for development until an issue of filling a wetland on its property was permitted. Given the exigent school circumstances, it was determined that there was a need to develop an alternative but equitable funding mechanism.

9. Except for PDP-1, the parties recognized that in order for the remaining properties to develop there was a beneficial need for a segment of the 15-inch sewer trunk line to be constructed within the right of way of the planned Coffee Lake Drive. Coffee Lake Drive traverses the eastern edge of SAP-E, commencing from Barber Street to the south to the planned Villebois Drive to the north. A portion of the sewer trunk line is located within the Coffee Lake Drive right of way, but only the segment from a little south of Barber to the Bischof/Lund southern property line was needed to be constructed for the school to open. This segment of the proposed sewer line was located within the Redus Property, and Redus agreed to provide the necessary easement to the City. As noted above, a different funding approach was needed than had been provided in the Matrix Development Agreement. Thus, the Infrastructure Agreement with the School District, Addendum No. 3 to the Matrix Development Agreement involving Redus and Legend, and the Purchase Agreement with Fasano/DeArmond provided for formation of a Reimbursement District to reimburse a portion of the sewer line cost, with the School District contributing 24% to the costs and to advance the remaining costs. It was subsequently determined that the City would advance the costs and seek the reimbursement. The sewer line was constructed and oversized to benefit certain properties yet to be developed, which would hook into the sewer line upon development. The Benefitted Properties are subject to a pro rata reimbursement for this segment upon development. Under the reimbursement provisions of its code, the City will be seeking reimbursement for the District from the Benefitted Property owners through a Coffee Lake Drive Sewer Reimbursement District.
10. During the process of constructing the sewer line, it was determined that the corresponding segment of Coffee Lake Drive could be constructed at a substantial savings. Redus had sought development approval for PDP-2 to be able to better market the property for sale to a developer. The Development Approval was conditioned, in part, on building this segment of Coffee Lake Drive. To achieve the cost savings, this segment of Coffee Lake Drive was constructed with the sewer line segment. The sewer line, if constructed alone, would need a 15' access strip with a base of approximately 21 feet. This was accounted for in the cost of construction for the sewer line and was not

included in the portion of the Coffee Lake Drive base that is attributed to Redus under its condition of approval. The City intends to seek reimbursement through a separate mechanism, apart from the Coffee Lake Drive Sewer Reimbursement or the Road and Utility District, for the Coffee Lake Drive Road construction attributable to Redus and which the approved conditions required the developer to build.

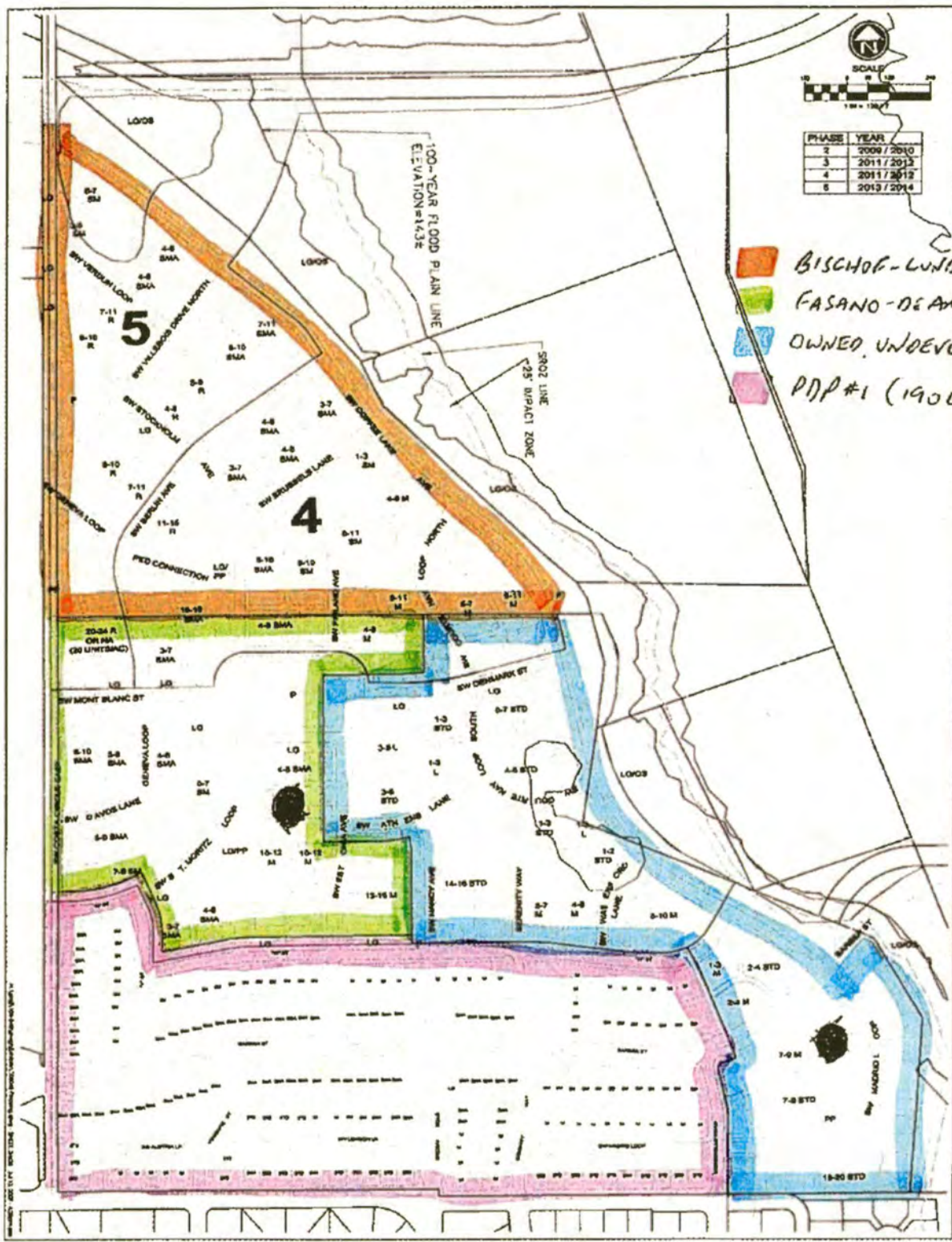


3/19/10
4573

PHS
Pacific Habitat Services, Inc.

Proposed site plan and wetland impacts at Villebois SAP East Phase 2 planning area in Wilsonville, Oregon. Provided by City of Wilsonville, 2010.

FIGURE
5




 7200 SW NEVADA AVE
 PORTLAND, OR 97209
 503-253-1133
 www.alphacommunity.com

VILLEBOIS
 SAP EAST

PHASING
 PLAN

PROJECT NO. 156
 REVISION 01

Summary of Development Agreement History
 Villebois SAP E & Reimbursement Dist

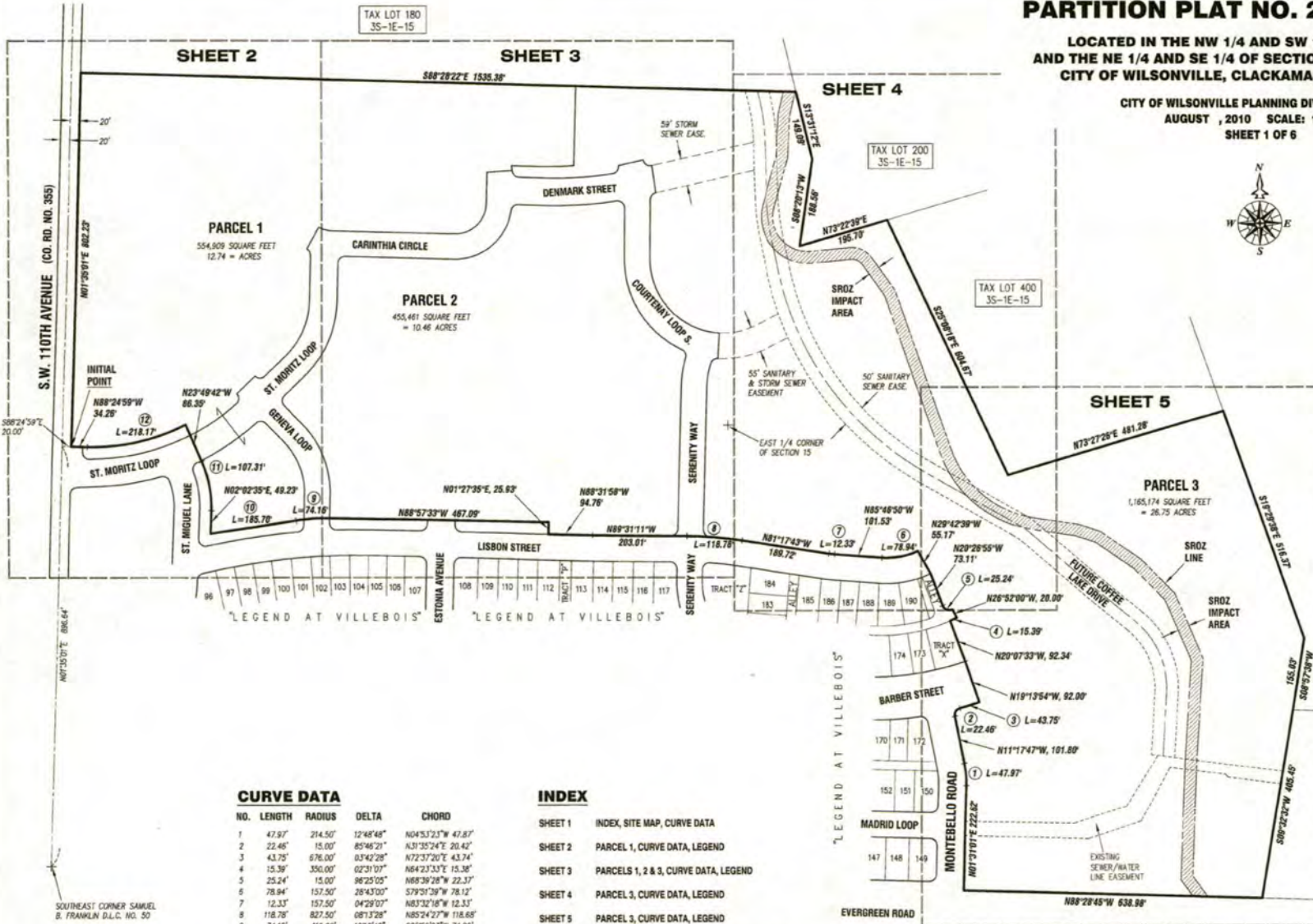
PARTITION PLAT NO. 2010 -

LOCATED IN THE NW 1/4 AND SW 1/4 OF SECTION 14,
AND THE NE 1/4 AND SE 1/4 OF SECTION 15, T.3S., R.1W., W.M.
CITY OF WILSONVILLE, CLACKAMAS COUNTY, OREGON

CITY OF WILSONVILLE PLANNING DIVISION FILE NO.

AUGUST, 2010 SCALE: 1" = 150'

SHEET 1 OF 6



CURVE DATA

NO.	LENGTH	RADIUS	DELTA	CHORD
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- SHEET 2 PARCEL 1, CURVE DATA, LEGEND
- SHEET 3 PARCELS 1, 2 & 3, CURVE DATA, LEGEND
- SHEET 4 PARCEL 3, CURVE DATA, LEGEND
- SHEET 5 PARCEL 3, CURVE DATA, LEGEND
- SHEET 6 APPROVALS, SURVEYOR'S CERTIFICATE, NARRATIVE DECLARATION, ACKNOWLEDGMENTS, RESTRICTIONS

REGISTERED
PROFESSIONAL
LAND SURVEYOR

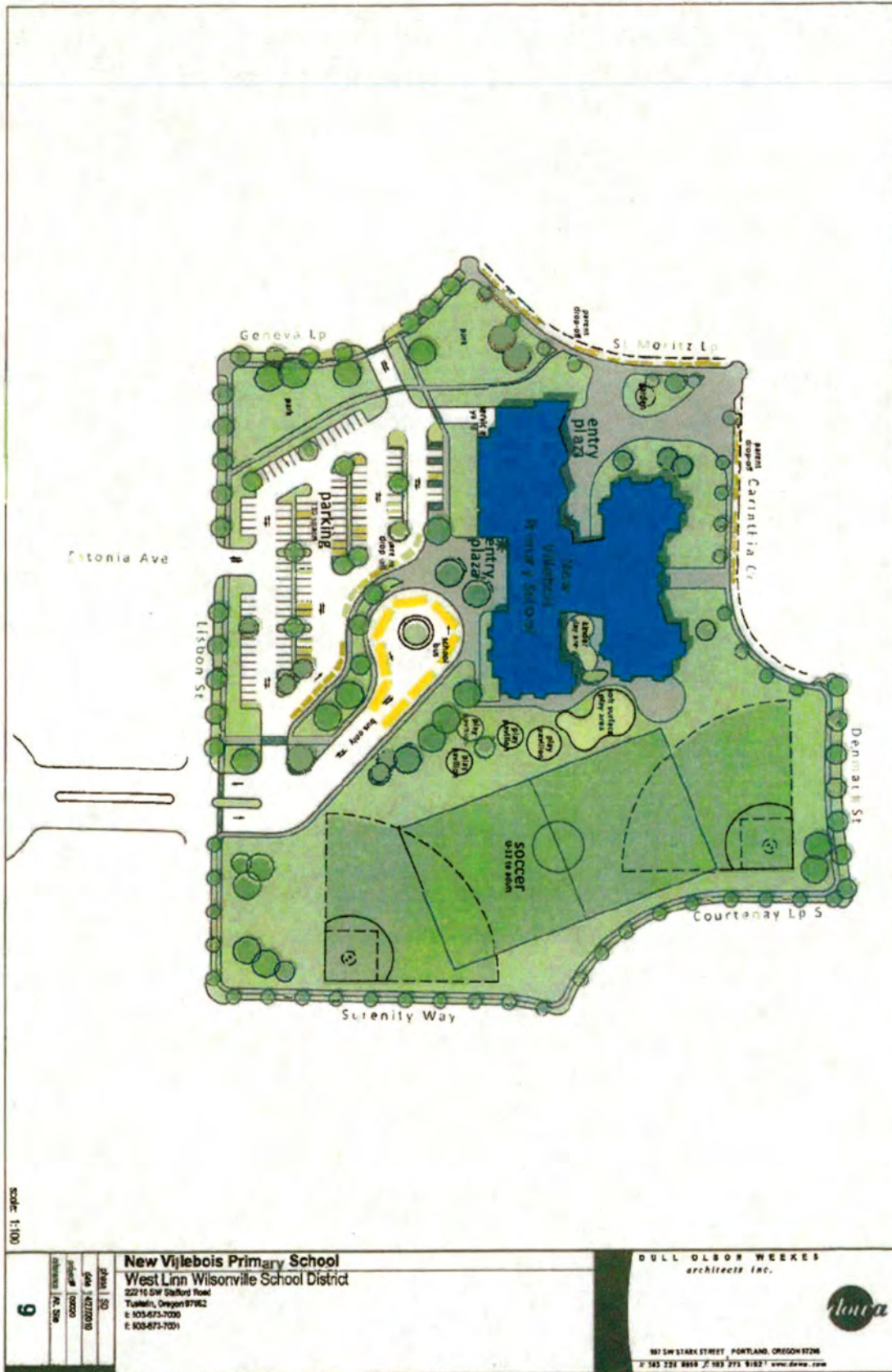
Michael A. Rademacher

OREGON
JULY 16, 1987
MICHAEL A. RADEMACHER
2303

DATE OF SIGNATURE: 9-9-10
EXPIRES: 12/31/2010

ENGINEER/SURVEYOR
COMPASS ENGINEERING
4105 INTERNATIONAL WAY, SUITE 501
MILWAUKIE, OREGON 97222
PHONE: 503-953-9093
6788 Part.dwg (MMM)
JOB NO. 6788 (PARTITION)

SOUTHEAST CORNER SAMUEL
B. FRANKLIN D.L.C. NO. 50



RESOLUTION NO. 2377

A RESOLUTION OF THE CITY OF WILSONVILLE APPROVING ADDENDUM NO. 4 TO THE DEVELOPMENT AGREEMENT OF JUNE 14, 2004 BY AND BETWEEN THE CITY OF WILSONVILLE (CITY) AND THE URBAN RENEWAL AGENCY OF THE CITY OF WILSONVILLE (URA) AND MATRIX DEVELOPMENT CORPORATION (DEVELOPER) AND PROPERTY OWNERS DONALD E. BISCHOF / SHARON L. LUND, ARTHUR C. / DEE W. PICULELL, THE DeARMOND FAMILY LLC / LOUIS J. / MARGARET P. FASANO (OWNERS) AND VALERIE AND MATTHEW KIRKENDALL (KIRKENDALL)

WHEREAS, in 2004, the City of Wilsonville ("City") and the Urban Renewal Agency of the City of Wilsonville ("URA") entered into a Development Agreement ("Matrix Development Agreement") with Matrix Development Corporation ("Developer") and several property owners for the residential development of certain real property in the community known as Villebois Village ("Villebois Property"), pursuant to the Villebois Master Plan; and

WHEREAS, the Matrix Development Agreement has been amended by Contract Addendum Nos. 1, 2, and 3; and

WHEREAS, Addendum No. 4 is the subject of this Resolution and is between the City, the URA and Polygon Northwest Company, L.L.C. ("Polygon"). All other parties to the Development Agreement are not parties to this Addendum 4.

WHEREAS, the purpose of Addendum No. 4 is to outline certain responsibilities to be undertaken by Polygon as the potential successor in ownership interest to Donald E. Bischof and Sharon L Lund property located within the Villebois Master Plan ("Bischof/Lund Property").

WHERE, if Polygon does not purchase the Bischof/Lund Property, as provided in Addendum No. 4, then Addendum No. 4 will automatically become null and void.

WHEREAS, to assist the public in understanding the complexities of the Matrix Development Agreement and other Villebois development as it relates to this Addendum No. 4, the following historical chronological summary of the Villebois Village Master Plan Project is provided:

SUMMARY

1. The Villebois Master Plan is a land use plan regulating the development of approximately 500 acres of a planned, mixed use community of internal commercial and a mix of an anticipated 2,600 residential uses, with trails, parks, and open spaces, supported by

approximately \$140 million in infrastructure improvements. In approximately June 2004, for the purposes of developing home sites within the Villebois Master Plan area, Matrix Development Co. (Matrix) acquired certain land interests in approximately 150 acres of land east of 110th Street and entered into the 2004 Matrix Development Agreement. In this regard, Matrix purchased the Kirkendall property, succeeding to their interests in the Matrix Development Agreement; purchased some of the property owned by DeArmond/Fasano and optioned to purchase the balance; purchased some of the property owned by Bischof/Lund and optioned to purchase the balance; purchased a portion of the property owned by Arthur C. and Dee W. Piculell, and purchased development rights to mitigate wetlands on the balance not purchased.

2. In conjunction with the purposes of acquiring the aforementioned property and developing it, Matrix entered into certain loan agreements with Wachovia Bank (now Wells Fargo Bank), which included financing certain of the land purchases and development costs and providing Wachovia with security interests therein.
3. Matrix was authorized to enter into, and participate on behalf of the parties in, the adoption of the land use planning regulations for the properties to implement the Villebois Master Plan, including but not limited to a Revised Master Parks Plan, Special Area Plan East (SAP-E) for the properties east of 110th, and the platting of Preliminary Development Plan Phase 1 (“PDP-1”), which was the first phase of development of SAP-E.
4. The parks and open space classifications are pocket parks, linear greens, neighborhood parks, and regional parks. The general location of these parks and open spaces are depicted in Figures 5, 5A, and 5B to the Revised Villebois Village Parks Master Plan. A copy of Figures 5, 5A, and 5B are marked as **Exhibit 1**, attached hereto and incorporated by reference herein. Without provision for these parks, development cannot proceed.
5. In August of 2005, Matrix entered into a financing contract with the City and the URA in the form of Contract Addendum No. 1 to the Matrix Development Agreement. Addendum 1 replaced the local improvement district (“LID”) funding mechanism to provide traffic trip capacity for the development’s impacts at the I-5/Wilsonville Road Interchange with a prepayment by Matrix for trip impacts that would be generated by its

development. A certain amount of development, based on projected traffic trips were thereby vested in accordance with Addendum 1 and the prepayment provided funding for improvements to increase the interchange's trip capacity to allow for that development. The prepayment was made and Matrix was vested in the trips set forth in Addendum 1.

6. In December of 2007, the financial provisions of the parks and open spaces to be developed by Matrix were memorialized by the City, the URA, and Matrix in Addendum No. 2 to the Matrix Development Agreement. The key features of Addendum 2 are as follows: the total costs of the parks and open spaces were estimated to be \$4,837,293; Matrix would construct these parks and open spaces; and Matrix would provide a proposed PDP-2 that, together with PDP-1, provided for 655 lots which would produce \$1,568,070 (655 lots x \$2,394) in park SDCs, against which Matrix would receive a \$1,113,210 credit against the City's park SDCs, leaving the balance of \$454,860 to be paid by PDP-1 (190 x \$2,394). Thus, accounting for the SDC credits, the remaining proposed 465 lots would not pay any park SDCs, given Matrix's responsibility to provide the parks and open spaces. Included in the total of Matrix's responsibility was the construction of a community center for the homeowner's association (to include an interpretive center), at an estimated cost of \$1,019,000.
7. Matrix and its construction entity, Legend Homes, Inc. ("Legend"), filed for Chapter 11 bankruptcy protection in the United States Bankruptcy Court for the District of Oregon, Case No. 08-32798-tmb 11. On May 11, 2010, the Bankruptcy Court adopted the Matrix Second Amended Reorganization Plan ("Reorganization Plan"), effective June 1, 2010. As part of the proceedings, Matrix abandoned its optioned property to the above referenced owners and, through the Reorganization Plan, certain of its other property was transferred to Wells Fargo, as successor in interest of Wachovia Bank, and subsequently assigned to its property development company, Redus OR Lands, LLC. ("Redus Property"). Under the Reorganization Plan, Matrix and Legend merged into a reorganized single entity, Legend, and Legend retained the land and development of PDP-1. Prior to the bankruptcy and the abandonment, Matrix had proposed a portion of the balance of the property to be developed as PDP-2, and a map depicting the proposed lot development is marked as **Exhibit 2**, attached hereto and incorporated by reference

herein. A map depicting the respective interests after abandonments is marked as **Exhibit 3**, attached hereto and incorporated by reference herein. A list of the respective parks and open spaces in SAP-E, the property ownership upon which they occur, and their estimated costs is set forth on **Exhibit 4**, attached hereto and incorporated by reference herein.

8. As part of the Reorganization Plan, Legend was relieved of all parks costs, except for certain fixed park SDCs on a graduated scale for the 159 remaining residential lots of PDP-1 that had not been built upon, which Legend retained under the Reorganization Plan, and an approved, agreed upon sum toward the design and construction of Neighborhood Park 6 under the Reorganization Plan. These park SDCs and costs to Legend were negotiated and agreed upon between Legend, the City, the URA and Redus. With Legend being relieved of its other parks and open spaces participation, except as noted above, the remaining responsibility for the parks and open space requirements and related costs fell to the remaining land owners, to be imposed at the time of development. A separate amending agreement of the Matrix Development Agreement between the City, the URA and the Fasano/DeArmond, and a second separate amending agreement between the City, the URA and Redus were reached to address, in part, the parks and open space requirements and their respective funding. Included in these agreements, among other things, the City and the URA acquired land from each of the ownerships for the construction of a grade school by the West Linn Wilsonville School District (“District”) within portions of then PDP-1 and PDP-2. Subsequently, Redus obtained City development approval, subject to conditions, of an 88-lot subdivision for land within PDP-2 that Redus now owns. This subdivision is now referenced as SAP East, PDP-2 (hereinafter “PDP-2”). Fasano/DeArmond has not yet applied for development approval.
9. The City, the URA and Polygon, who anticipates purchasing the Bischof/Lund Property (pursuant to an agreement with the current owners thereof), now desire to amend the Matrix Development Agreement to provide the framework for development of the Bischof/Lund Property. This land contains 192 lots, as originally proposed by Matrix for the Bischof/Lund Property, and will now be known as SAP East, PDP-3 (hereinafter “PDP-3”).

10. As part of the Reorganization Plan, Legend retained the trip vesting benefits of contract Addendum 1 for its PDP-1 development and transferred the balance to Redus. Having provided the loan funds to Matrix for development, including that for paying for the vesting of trip capacity through the I-5 Interchange, and with the Bankruptcy Court's approval and Matrix' abandonment of certain portions of a proposed PDP-2 to Wachovia, the City and the URA reached agreement with Redus to retain the same vested trip benefits for its PDP-2 property. Without the application of the vesting of trip funds to the interchange improvements, which are scheduled to be completed July 2012 to allow capacity for Villebois development, development by Matrix or Legend or any of the landowners involved, or their successors, would not be able to proceed under the City's infrastructure concurrency policy. However, to the extent that the collected and expended vesting of trips funds would apply to other Villebois properties under the Development Agreement, Redus is entitled to recoup the applicable balance of the payment from those property owners at their property's development. This amounts to \$690 per lot under the original agreement with Matrix. The City, the URA and Redus reached an agreement for repayment upon development of these other properties. Polygon has agreed to the City's surcharge of \$690 per lot against each lot proposed for the Bischof/Lund Property at the time of building permit application to build on the lots which the City and URA will then reimburse the surcharged amount to Redus upon the collection. Polygon proposes 184 lots rather than 192 due to wetland conditions.
11. The Villebois Master Plan required that a 10-acre site be designated for a grade school and sports fields. The designated land was initially located west of 110th and adjacent to Tooze Road. The School District in anticipation of building at the Tooze Road site had passed a bond issue to build the school. Due to the recessionary economic conditions, the housing development needed to support the extension of infrastructure to the Tooze Road site was delayed and therefore funding for the improvements needed for Tooze Road improvements was not available. There was an immediate need for the school serve over crowded conditions and also to avoid bond arbitrage issues. Give the aforementioned lack of funds for extending infrastructure to the Tooze Road site, the Villebois Master Plan was amended to provide for a substituted school site with a lower infrastructure cost.

The URA and the City purchased the substitute site within the lands of Matrix, Redus, and DeArmond/Fasano. A reduced copy of page 1 of Partition Plat No. 2010, depicting the school site (parcel 2) and a plan layout of the school site, is marked as **Exhibit 5**, attached hereto and incorporated by reference herein.

12. The District entered into an Infrastructure Development Agreement with the City and the URA. Under the Infrastructure Development Agreement, the District will provide certain infrastructure to serve the school, such as local roads, storm drainage, and sewer lateral lines. Some of this infrastructure was oversized and provides extra capacity, which will benefit the neighboring properties. This entitles the District to reimbursement from the benefiting properties at time of development of the benefitting properties through a Road and Utility Reimbursement District. There was also a need for the school to be tied into the proposed Coffee Lake sewer trunk line, which was on land that Redus acquired in the reorganization. The construction of the trunk line was not funded and would normally be constructed by the developer of the land in conjunction with development and under an SDC methodology with credit for oversizing by the responsible developer. Redus was not a developer. Given the exigent circumstances, it was determined that there was a need to develop an alternative, but equitable funding mechanism.
13. Except for PDP-1, the parties recognized that in order for the remaining properties to develop there was need for a segment of the 15-inch sewer trunk line to be constructed within the right of way of the planned Coffee Lake Drive. Coffee Lake Drive traverses the eastern edge of SAP-E, commencing from Barber Street to the south to the planned Villebois Drive to the north. The sewer trunk line is located within the Coffee Lake Drive right of way; but only the segment from a little south of Barber to the Bischof/Lund southern property line was needed to be constructed for the school to open. This segment of the sewer line is located within the Redus Property and Redus agreed to provide the necessary easement to the City. As noted above, a different funding approach was needed than had been provided in the Matrix Development Agreement. Thus, the Infrastructure Agreement, Addendum No. 3 to the Matrix Development Agreement involving Redus and Legend, and the purchase agreement with Fasano/ deArmond, provided for formation of a Reimbursement District to reimburse a portion of the sewer line cost with the School

District contributing 24% to the cost. The sewer line was constructed and oversized to benefit certain properties yet to be developed, including the Bischof/Lund Property ("Benefited Properties") All Benefited Properties are subject to a pro rata reimbursement for this segment upon development. The District was to advance the funds for this segment of the 15-inch sewer trunk line, subject to reimbursement. Under the reimbursement provisions of its code, the City will be seeking reimbursement for the District from the Benefitted Property owners through a Coffee Lake Drive Sewer Reimbursement District and through a separate reimbursement district for that constructed segment of Coffee Lake Drive that the developers of PDP-2 were conditioned to provide. (Road and Utility Reimbursement District"). The Road and Utility Reimbursement District is a separate and further reimbursement district to which the Benefited Property owners will be subject.

14. If Polygon purchases the Bischof Lund Property, Polygon desires to deliver community elements such as roads, utilities, and parks early in the development process and to streamline the development process in order for the parties to realize the resulting economic benefits, including some cost savings to Polygon and some relief to the City and the URA from advancing funds for some of these elements, as envisioned in the amended Matrix Development Agreement. Pursuant to Addendum No. 4, if Polygon purchases the Bischof Lund Property on or before December 15, 2015, Polygon will advance the capital required to construct the parks and infrastructure described in Addendum No. 4, subject to SDC credits, as provided in Addendum No. 4 and subject to reaching certain other agreements with third party developers or landowners in Villebois as provided in Addendum No. 4.

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

1. City Council hereby authorizes the City Manager to enter into Contract Addendum No. 4 to the Development Agreement, to benefit past and future development at Villebois Village, addressing construction roles, financing responsibilities, timing for improvements to be made, in substantially the form attached hereto as **Exhibit A**, as approved by the City Attorney.

2. This Resolution, incorporating the Summary, is effective upon adoption.

ADOPTED by the City Council of the City of Wilsonville at a regular meeting thereof this ___ day of August, 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

Council President Núñez

Councilor Goddard

Councilor Starr

Attachments:

Exhibit 1 – Parks and Open Space Plan

Exhibit 2 – Proposed Site Plan PDP-2

Exhibit 3 – Map Depicting Respective Interests After Abandonment

Exhibit 4 – Parks/Open Spaces in SAP-E, Ownership and Estimated Costs

Exhibit 5 – Partition Plat No. 2010 and School Site

Exhibit A: Development Agreement Contract Addendum No. 4

Figure 5

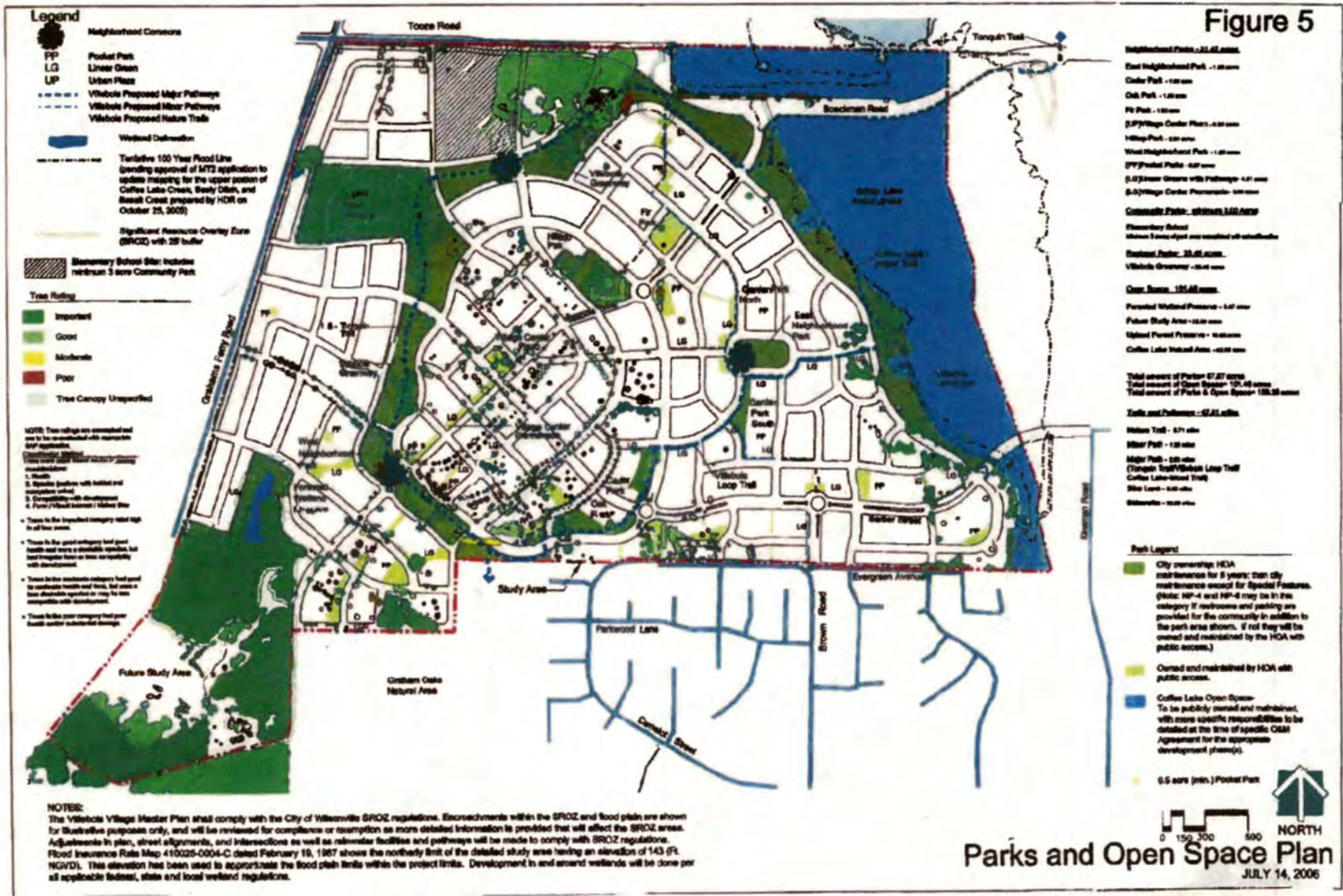


Figure 5A

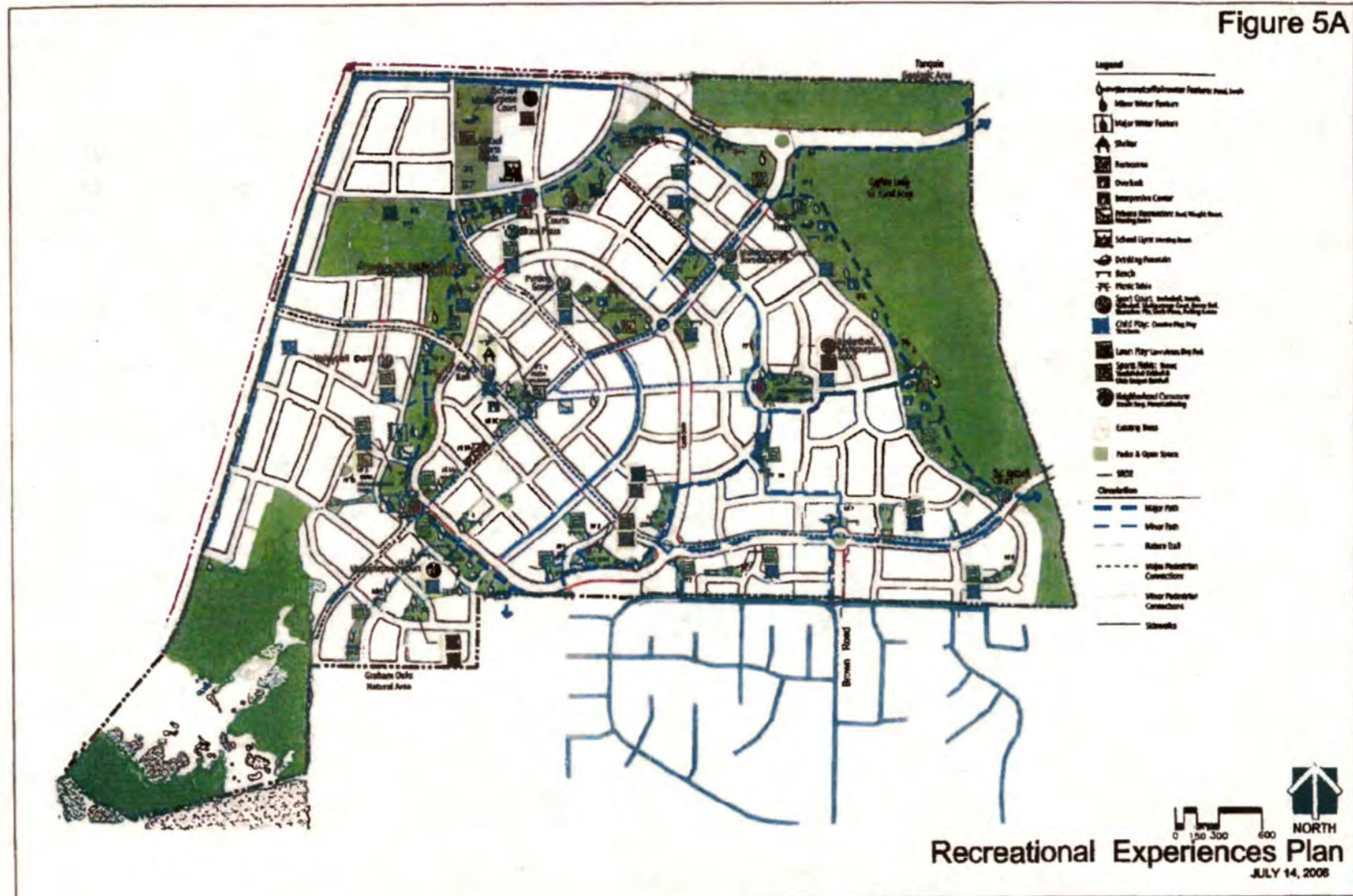
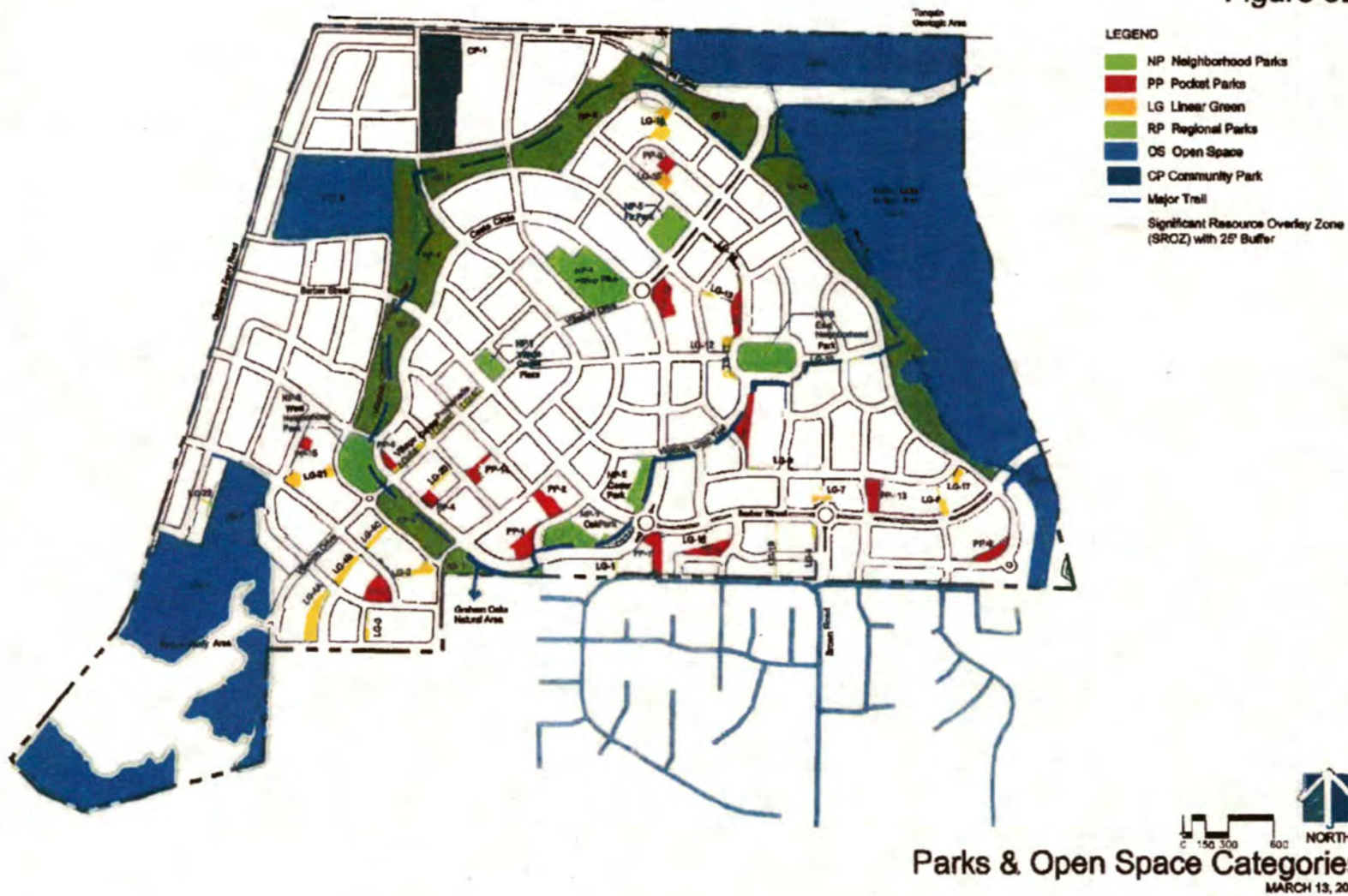
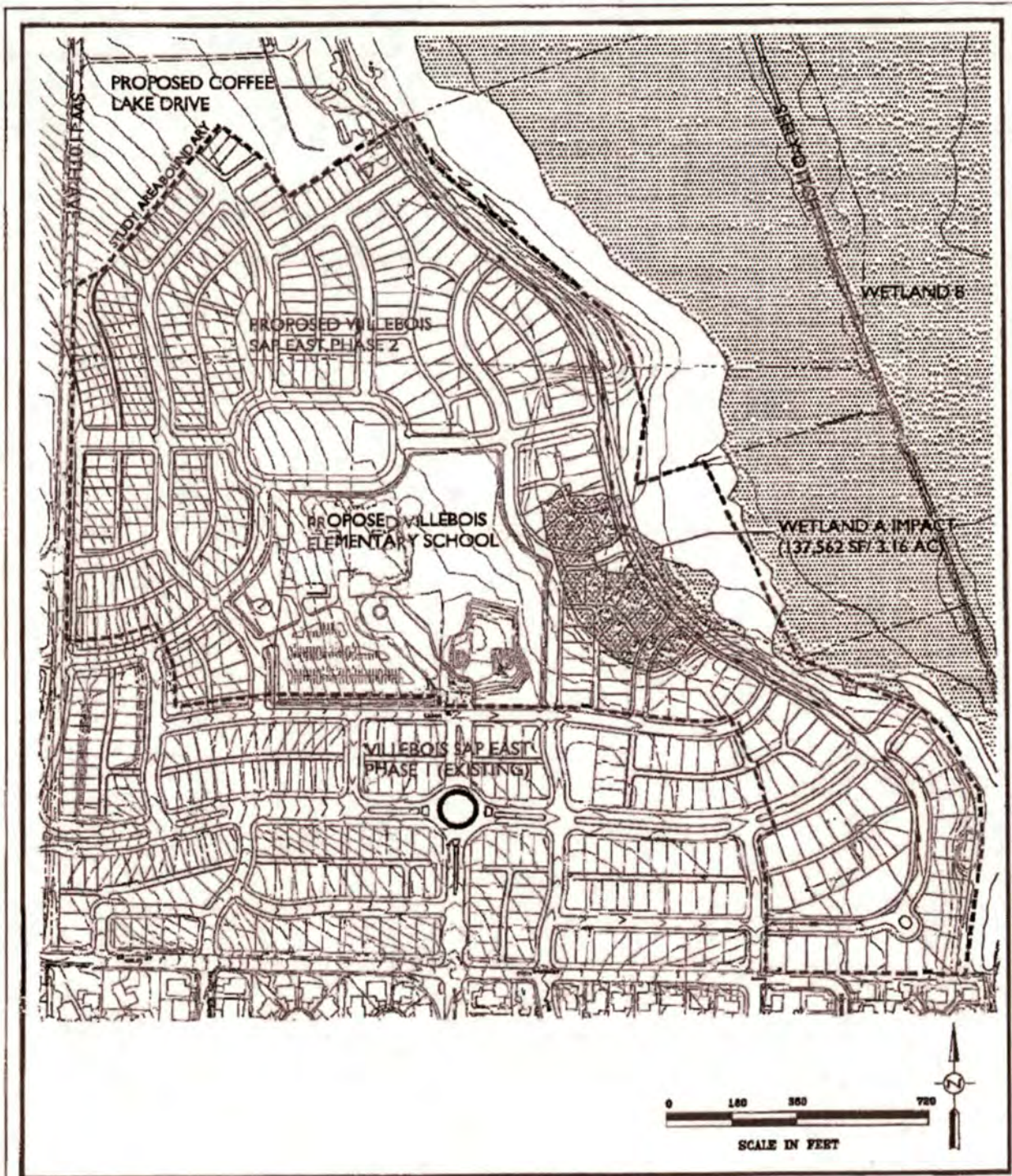


Figure 5B



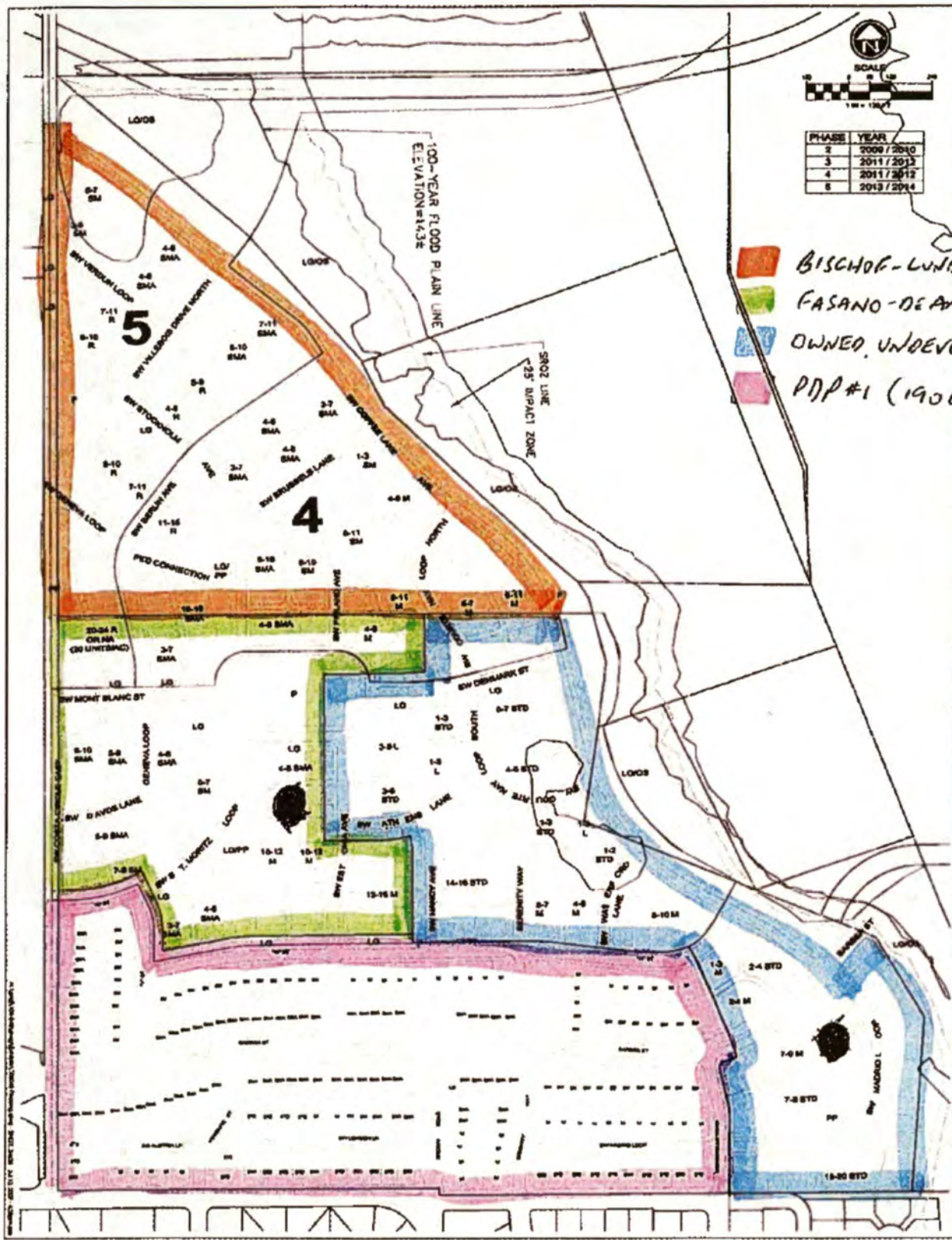


3/19/10
4573


Proposed site plan and wetland impacts at Villebois SAP East Phase 2 planning area in Wilsonville, Oregon. Provided by City of Wilsonville, 2010.

Pacific Habitat Services, Inc.

FIGURE
5



PHASE	YEAR
2	2009 / 2010
3	2011 / 2012
4	2011 / 2012
5	2013 / 2014

- BISCHOP-LUNA
- FASANO-DEARMOND
- OWNED, UNDEVELOPED
- PDP #1 (190 LOTS)

PREPARED BY: [Redacted]
 DATE: [Redacted]
 REVIEWED BY: [Redacted]

PHASING PLAN

VILLEBOIS
SAP EAST

5200 SW 10TH AVE
 SUITE 100, OREGON, OR 97105
 503-425-1122
 www.alphaconsulting.com

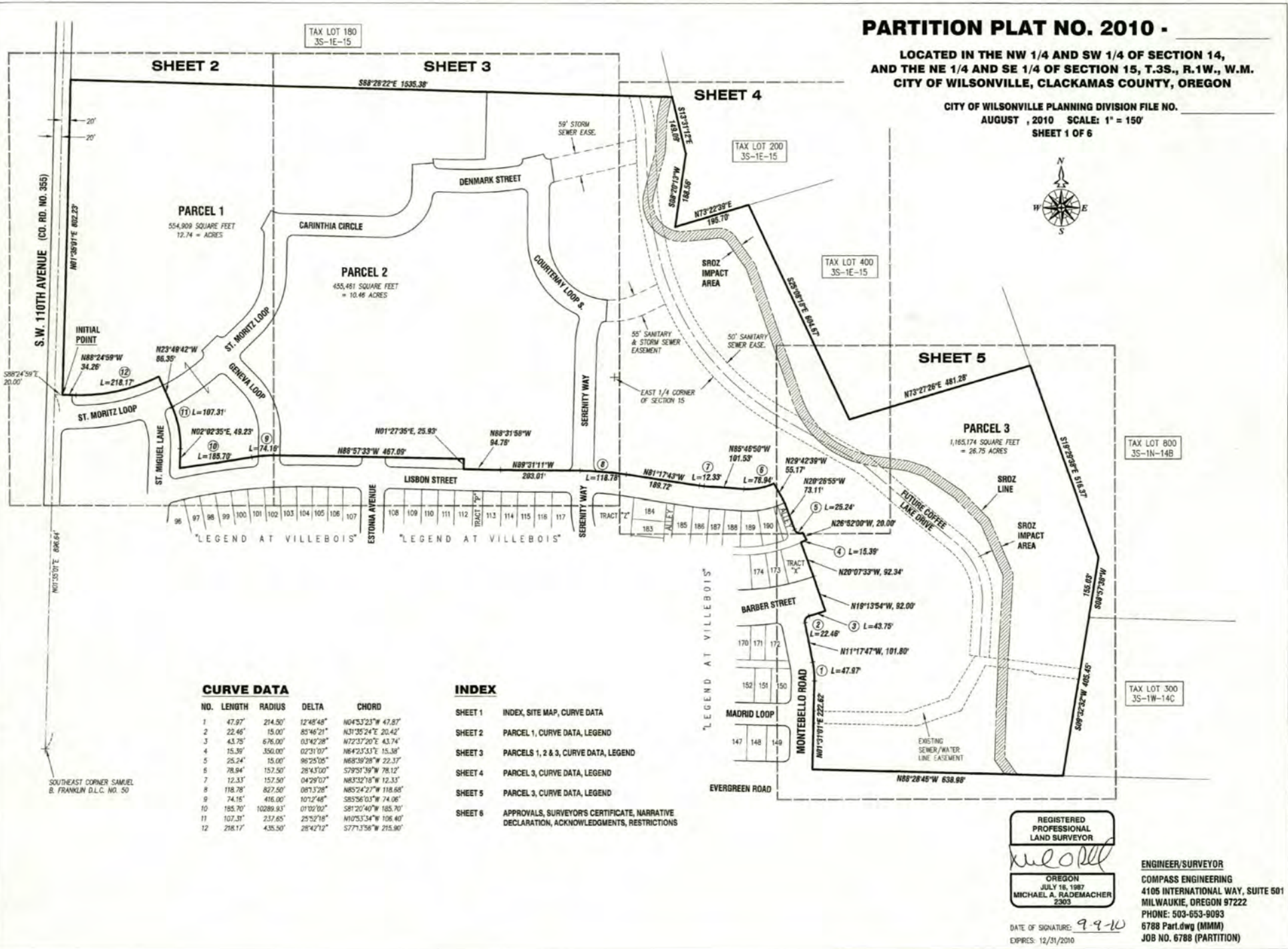


SAP East	PARK COST	LEAD	Property Owner
Neighborhood Park 5 (Fir Park) 41%	\$ 84,085	PRIVATE	Bischoff/Lund
Neighborhood Park 6 (East Neighborhood Park):	\$ 481,715	CITY	De/Fasano&Wachovia
Regional Park 7:	\$ 252,317	CITY	Bischoff/Lund
Regional Park 8:	\$ 3,254,379	CITY	Wachov/Bischoff/Lund
Linear Green 7:	\$ 80,315	PRIVATE	Matrix
Linear Green 15:	\$ 1,959	PRIVATE	Bischoff/Lund
Pocket Park 6:	\$ 177,539	PRIVATE	Matrix
Pocket Park 8:	\$ 119,327	PRIVATE	Wachovia
Pocket Park 9:	\$ 14,423	PRIVATE	Bischoff/Lund
Pocket Park 10:	\$ 152,511	SCHOOL	De/Fasano
Pocket Park 12:	\$ 25,894	PRIVATE	Bischoff/Lund
Pocket Park 13:	\$ 192,829	PRIVATE	Wachovia
Sap East Total	\$ 4,837,293		
Total	\$ 4,837,293		
Linear Green 16 (omitted in calcs)		PRIVATE	Bischoff/Lund
Linear Green 17 (omitted in calcs)		PRIVATE	Wachovia
Pocket Park 11 (omitted in calcs)		PRIVATE	De/Fasano/Bis/Lund

PARTITION PLAT NO. 2010 -

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AND THE NE 1/4 AND SE 1/4 OF SECTION 15, T.3S., R.1W., W.M.
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OREGON
JULY 16, 1987
MICHAEL A. RADEMACHER
5293

ENGINEER/SURVEYOR
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PHONE: 503-653-9093
6788 Part.dwg (MMM)
JOB NO. 6788 (PARTITION)

DATE OF SIGNATURE: 9-9-10
EXPIRES: 12/31/2010



scale: 1:100

9	sheet: 502
	date: 3/27/2010
	project: 10000
	revision: 1st SWS

New Villebois Primary School
 West Linn Wilsonville School District
 22210 SW Stark Road
 Tualatin, Oregon 97062
 P: 503-673-7030
 F: 503-673-7001

DULL OLSON WEEKES
 architects inc.



101 SW STARK STREET, PORTLAND, OREGON 97206
 P: 503 226 8600 / 503 275 6182 / www.doww.com

**ADDENDUM NO. 4
TO THE DEVELOPMENT AGREEMENT OF JUNE 14, 2004
BY AND BETWEEN THE CITY OF WILSONVILLE (CITY) AND
THE URBAN RENEWAL AGENCY OF THE CITY OF WILSONVILLE (URA)
AND MATRIX DEVELOPMENT CORPORATION (DEVELOPER)
AND PROPERTY OWNERS DONALD E. BISCHOF / SHARON L. LUND,
ARTHUR C. / DEE W. PICULELL,
THE DeARMOND FAMILY LLC / LOUIS J. / MARGARET P. FASANO (OWNERS)
AND VALERIE AND MATTHEW KIRKENDALL (KIRKENDALL)**

THIS ADDENDUM NO. 4 ("Addendum 4") to the above captioned Development Agreement (hereinafter referred to as the "Matrix Development Agreement") is entered into this ___ day of July, 2012, by and between the City of Wilsonville ("City"), a municipal corporation of the State of Oregon, the Urban Renewal Agency of the City of Wilsonville ("URA"), a municipal corporation of the State of Oregon, and Polygon Northwest Company, L.L.C., a Washington limited liability company ("Polygon"). This Addendum 4 only applies to the City, the URA, and Polygon, and does not apply to the other parties to the Matrix Development Agreement.

RECITALS:

1. The Villebois Master Plan is a land use plan regulating the development of approximately 500 acres of a planned, mixed use community of internal commercial and a mix of 2,600 residential uses, with trails, parks, and open spaces, supported by \$140 million in infrastructure. In approximately June 2004, for the purposes of developing home sites within the Villebois Master Plan area, Matrix Development Co. (Matrix) acquired certain land interests in approximately 150 acres of land east of 110th Street and entered into the 2004 Development Agreement set forth in the title above (known as the "Matrix Development Agreement").

2. Polygon has entered into an option agreement to purchase a portion of the property affected by and included in the Matrix Development Agreement, which is currently owned by Sharon L. Lund and Donald E. Bischof (the "Bischof/Lund Property"). The Bischof/Lund Property is described on the attached **Exhibit 1**. The City, the URA, and Polygon wish to clarify certain respective obligations under the Matrix Development Agreement that pertain to the Bischof/Lund Property if Polygon acquires the Bischof/Lund Property and Polygon receives its requested approvals for the development of SAP East, PDP-3 ("PDP-3E") as shown on the attached **Exhibit 2** (the "Site Plan"). The Site Plan contemplates 184 lots being developed on the Bischof/Lund Property.

3. Terms not specifically defined herein shall be as defined in the Development Agreement.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are acknowledged, the City, the URA, and Polygon agree as follows:

TERMS AND CONDITIONS:

1. **Condition Precedent.** Polygon hopes to acquire the Bischof/Lund Property much earlier than December 31, 2015. However, as a condition precedent to the implementation of this Addendum 4, Polygon must purchase the Bischof/Lund Property (except for any such land dedicated to or purchased by the City from Bischof/Lund) on or before December 31, 2015. In the event Polygon does not purchase the Bischof/Lund Property by December 31, 2015, this Addendum No. 4 shall become null and void unless the parties otherwise mutually agree, in writing.

2. **Supplemental I-5/Wilsonville Street Fee.** Polygon, as the developer of PDP-3E, shall pay a supplemental I-5/Wilsonville Road street SDC of \$690 per Dwelling Unit ("DU") at issuance of the building permit for each lot within PDP-3E. This supplemental street SDC is separate and apart from the basic street SDC and is not intended by the parties hereto to be a part of any street SDC credit or street SDC credit calculation that is set forth in this Addendum 4. The estimated supplemental street SDC to be paid by Polygon for the currently proposed 184 lots at \$690/DU is \$126,960.

3. **Villebois Drive North Extension from Coffee Lake Drive to Boeckman.**

3.1. The Matrix Development Agreement for SAP East provides that the City will construct Villebois Drive North from the existing roundabout on Boeckman Drive to Coffee Lake Drive. Polygon, as the developer of PDP-3E, hereby agrees to construct Villebois Drive North from the existing roundabout on Boeckman Drive to Coffee Lake Drive, subject to a full credit of those expenses against street SDC fees for PDP-3E. The parties estimate the length of this segment to be 310 feet and that the estimated cost to construct, with utilities, is \$650 per linear foot, which is calculated to be \$201,500, together with soft costs estimated at 24% of the construction cost, or \$48,360, which totals \$249,860. The breakdown of soft costs is set forth in Section 12.1.

3.2. The City shall provide the necessary permits of entry and construction easements to allow Polygon to construct this segment of roadway and the City shall dedicate for public use such segment of the roadway which is located on City property.

4. **Villebois Drive North Extension from 110th to Coffee Lake Drive.** Polygon, as the developer of PDP-3E, shall construct Villebois Drive North from Coffee Lake Drive to the Bischof/Lund Property boundary. Polygon will receive credits for those expenses against street SDC fees for PDP-3E for 12 feet additional paving width and the additional base rock depth over the entire street width that is required to upgrade from a local street to a collector street (typically two additional inches of base rock). The extra paving width for bike lanes is calculated at 10,260 sq. ft., at a unit price of \$2.00 a sq. ft., for an estimated cost of \$20,520. Rock needed for the extra paving is calculated at 10,260 sq. ft., at \$1.33 a sq. ft., for an estimated cost of \$13,646. The extra base rock depth is calculated to be 42,750 sq. ft. at \$0.50 a sq. ft., for an estimated cost of \$21,375. The total estimated cost of all of the foregoing is \$55,541. The soft costs are

calculated at 24% of the costs for the extra paving width and rock, which is estimated at \$13,330. The total street SDC credits are estimated at \$68,871.

5. Villebois Drive Central/Costa Circle Extension and Roundabout.

5.1. Under a separate and different development agreement with Villebois Village LLC ("Villebois Village"), the developer of SAP Central, Villebois Village is required to construct Villebois Drive Central from 110th Avenue, the property line of PDP-3E, to Costa Circle Drive, the roundabout, and Costa Circle Drive from Villebois Drive Central to its current terminus, subject to the standard credits of those expenses against street SDC fees. Villebois Village, along with its successors and assigns, as the current owners of SAP Central (see paragraph 5.2 below) are not currently ready to proceed with this construction. However, because this is an important transportation linkage within the community, the parties to this Addendum 4 agree that residents of Villebois and others within the City of Wilsonville will benefit from having this road linkage in use, and both the City of Wilsonville and Villebois land holders will benefit from having this community investment in place and paid for.

5.2. Based on the foregoing, if the Villebois Drive Central/Costa Circle extension and roundabout have not been completed by the SAP Central developer by the time the Bischof/Lund Property is developed, and subject to the conditions below, Polygon, as the developer of PDP-3E, hereby agrees to construct Villebois Drive Central from 110th Avenue (property line of PDP-3E) to Costa Circle Drive, the roundabout, and Costa Circle Drive from Villebois Drive Central to its current terminus, subject to the following conditions: A separate agreement(s) is executed with all affected land owners of SAP Central, meeting the requirements of this Section 5.2. The current affected property owners of SAP Central are Costa Pacific Communities, Inc. or its affiliate, Villebois Village Center LLC ("Costa"), and Zions National Bank ("Zion"). Polygon has entered into preliminary negotiations with them to pursue this goal. Under such separate agreement(s), Costa and Zion must provide the road dedications and construction easements required to build these roads and roundabout; Costa must waive its right to collect its portion of the Master Planning Fee for all lots in PDP-3E; and Costa and Zion must agree to a supplemental street SDC equal in total to the actual street SDC credits provided by the City for Polygon for the streets and roundabout, which shall be paid to the City as future building permits are issued for the development in SAP Central. Polygon, as the developer of PDP-3E, shall receive a full credit of the expenses for constructing the Villebois Drive Central/Costa Circle extension and roundabout against street SDC fees for PDP-3E and against that portion of the Master Planning Fee owed by Polygon to the master developer (see Section 11). A map of these streets and the roundabout, with the designation of the proposed portion thereof that is the responsibility of Costa or Villebois Village Center LLC is set forth in **Exhibit 3**, attached hereto and incorporated by reference herein. A table of the estimated respective costs and SDC credits are set forth in **Exhibit 4**, attached hereto and incorporated by reference herein.

5.3 The City shall provide the necessary permits of entry and construction easements to allow Polygon to conduct the Villebois Drive Central/Costa Circle extension on 110th Street.

6. Coffee Lake Drive Through Property.

Polygon, as the developer of PDP-3E, shall construct Coffee Lake Drive, within the property boundary, and receive street SDC credits for the construction of paving wider than 20 feet and the easterly curb against street SDC fees for PDP-3E. The SDC credits are calculated as follows: extra paving width of 12,240 sq. ft. at \$2.00 a sq. ft. is estimated at \$24,480; rock for the extra paving of 12,240 sq. ft. at \$1.33 a sq. ft. is estimated at \$16,279; the easterly curb of 2,040 lineal ft. at \$15.00 per linear ft. is estimated at \$30,600, for a total estimate of \$71,359; soft costs, at 24% of the above sum, are estimated at \$17,126; and the total SDC credits are estimated at \$88,485.

7. Regional Park 7 and North Portion of Regional Park 8.

7.1. Subject to the cap on costs described in Section 7.2, Polygon, as the developer of PDP-3E, shall construct that portion of Regional Parks 7 and 8 within the Bischof/Lund Property boundary and the Metro Property area as shown on **Exhibit 5**, attached hereto and incorporated by reference herein.

7.2. Polygon believes it can significantly reduce the cost by providing the design/plans for and the management of construction of the park described in Section 7.1. Polygon's obligation to spend funds for the design and construction of that portion of Regional Parks 7 and 8, as described in Section 7.1, is capped as follows: Polygon shall not be obligated to spend more than the park SDCs, currently set at \$4,602 per lot, which may be adjusted annually, in accordance with the Seattle Engineering Record's published construction cost index, until the park work is completed (the "Capped Amount"). The City will agree to a redesign of that portion of Regional Parks 7 and 8 so that the costs will not exceed the Capped Amount. The City shall review and approve draft plans at 30%, 60%, and 90% of plan completion. The total park SDC credits are currently estimated at \$846,768 (\$4,602 x 184 lots, subject to annual adjustment) and shall be provided by the City as against the Capped Amount for Polygon to design and construct the northern part of Regional Parks 7 and 8. In the event the City receives timely final approval from Metro for park construction on that portion of the Metro Property shown on **Exhibit 5**, Polygon and the City further agree that Polygon will design and construct the trail facilities on Metro property as long as the cost of the design and construction of that segment of the trail facilities, when added to the cost to design and construct the portion of Regional Parks 7 and 8 located within the Bischof/Lund Property, as described in Section 7.1, will not exceed the Capped Amount. Polygon will provide an updated more reliable cost estimates for construction for both the northern part of Regional Park 8 on the Bischof/Lund Property and the Metro property when the 30% design is completed. The parties shall then determine whether it is feasible to proceed with further design and construction of Regional Park 8 on both properties or just within the Bischof/Lund Property without including the Metro Property. In the event the estimated costs exceed the Capped Amount at the 30% design phase, Polygon shall not be obligated to spend any more than the Capped Amount. In such case, the City reserves the option to elect, at its discretion, to contribute Park SDC funds or other funds to cover the amount that exceeds the Capped Amount. If the City does not elect to pay the amount

in excess of the Capped Amount, the parties will redesign to stay within the Capped Amount or elect to build some or all of the park improvements at a later date.

7.3. The City has received Metro's tentative approval for the conceptual park improvements on the Metro Property, as depicted in the above **Exhibit 5**. The City will facilitate obtaining Metro's final approval to construct the trail facilities on the Metro Property.

8. **Miscellaneous Parks: Linear Greens (LG) 15 & 16, Pocket Parks (PP) 9 & 12, and Neighborhood Park (NP) 5.** These parks were initially designed to be located on the Bischof/Lund Property and the adjacent parcels owned by private ownership to the west, which property is not included in the Matrix Development Agreement. 110th Avenue currently runs through the middle of these parks. These parks are located and described on the map attached hereto as **Exhibit 6**, and incorporated by reference herein. It is anticipated that in order to develop the parks as shown, Polygon must enter into an agreement with this private property owner to allow for development of a portion of the parks on that other property. The City will endeavor to contact this property owner, who is currently located overseas, to determine whether the property owner is agreeable to allowing a portion of its property to be included in the park or parks Polygon will design and build. Polygon acknowledges it has the responsibility to develop the park areas located within the Bischof/Lund Property in PDP-3E, but the City and Polygon would prefer that the full parks, as currently contemplated in the Master Plan, be developed, if appropriate agreement can be obtained from the property owner. The plan to remove 110th will need to provide for existing easements of Northwest Gas and Kinder Morgan Petroleum utilities. If the other property owner does not enter into an agreement with Polygon to allow for park construction on its land, Polygon will develop that portion of the parks located on the Bischof/Lund Property and require the homeowner's association to maintain them, once constructed.

9. **Coffee Lake Drive 15-Inch Sewer.**

9.1. A 15-inch sewer trunk line in Coffee Lake Drive will serve all of SAP East, portions of SAP Central and SAP North, and all of UPA3. The sewer line has been extended by the City from Barber Avenue to Denmark Street (property line of Bischof/Lund). This segment has been constructed and a Reimbursement District is being formed by the City to pay the cost thereof.

9.2. The parties agree that Polygon, as the developer of PDP-3E, shall construct the 15-inch sewer line in Coffee Lake Drive from Denmark Drive (Bischof/Lund Property line) to 110th Avenue at its cost and receive sewer SDC credits for all lots within PDP-3E for oversizing the line above an 8-inch line to provide extra capacity for the future benefitted properties within the service area. Polygon acknowledges and agrees to formation of the Reimbursement District and that PDP-3E will be subject to assessments for a reimbursement of proportionate costs under the Reimbursement District.

9.3. Oversizing of sewer line reimbursement estimates have been in the range of \$55 - \$60 a linear foot, to date, in Villebois. Thus, SDC credits are estimated at \$57.50 a

linear foot for 2,040 feet, for a total of \$117,300, plus soft costs estimated at \$28,152, for a total estimated cost of \$145,452.

10. **Villebois Drive 18-Inch Waterline.** Polygon, as the developer of PDP-3E, shall construct an 18-inch water line in Villebois Drive from Coffee Lake Drive to the westerly property line, at an estimated cost of \$106,020, inclusive of soft costs. Polygon shall receive water SDC credits for the construction of oversizing from a 12-inch line to an 18-inch line against water SDCs for the lots in PDP-3E, in the estimated total sum of \$31,806, inclusive of soft costs, as set forth on page 4 of **Exhibit 4**.

11. **Master Planning Fee.** The Matrix Development Agreement for SAP East provides that the developer will pay a Master Planning Fee of \$900 per lot, with \$690 of that fee being paid to the master planner, Costa Pacific Communities, and \$210 of that fee being paid to the City. In the event Costa Pacific Communities, as a land owner in SAP Central, waives its Master Planner Fee, as proposed in Section 5 above, Polygon, as the developer of PDP-3E, shall only be required to pay the City a Master Planning Fee of \$210 per lot at the time of building permit issuance for each lot within PDP-3E.

12. **SDC Credit Calculations.**

12.1. **Included Costs.** The standards for calculating the costs of constructing infrastructure, including both soft and hard construction costs, are standards known to the City and Polygon, and have been used for the calculations herein, against which SDC credits are calculated. Soft costs incurred in connection with the improvements described in this Addendum 4 are included in SDC credits. Polygon shall be treated equitably and consistently with the other developers receiving SDC credits in Villebois, and such soft costs for the purposes of SDC credits shall be calculated as a percentage of construction costs as follows: Design, Engineering, and Surveying, 10%; City Permit Fee, 7%; Geotechnical Inspection, 2%; and Construction Management, 5%, for a total of 24% of construction costs. The Matrix Development Agreement addresses the respective SDC and SDC credit calculations and is to be followed, except as may otherwise be specifically set forth in this Addendum 4. All SDC credits shall be credited to Polygon before Polygon must pay any system development charges for the Bischof/Lund Property lots. That is, upon completing an infrastructure project and becoming entitled to the applicable SDC credits as provided in this Addendum 4, Polygon may apply, in whole or in part, such applicable SDC credits against the SDC otherwise owed, until such credits may become exhausted, before Polygon is obligated to pay any remaining applicable SDC that may be owed.

12.2 **Excluded Costs.** The parties to this Addendum 4 agree that the various infrastructure costs and SDC credit calculations shall not include the cost of any property or any easement, right of entry, or license for any property necessary to be dedicated to or otherwise transferred by any of the respective parties to this Addendum 4 to the City for the infrastructure improvements, including parks, provided for in this Addendum 4 and which shall be provided to the City without cost to the City. Polygon will not be required to pay for any rights of entry, easements, or dedications.

12.3. **Final Estimates and True Up.** In order to secure a public works permit for the infrastructure provided for herein, plans for the construction of the infrastructure, including parks, must be provided to and approved by the City. In constructing the infrastructure, the approved plans must be followed and, to ensure the cost for providing the infrastructure is reasonable, and thus any credit entitlement is reasonable, Polygon shall provide the construction contract costs to the City as the final estimate for the City's review and approval, which approval shall not be unreasonably withheld. The final cost and SDC credits shall be based on actual costs trueed up from the construction contract costs; provided, however, that for any such true-up change cost, the parties must mutually agree they are reasonable.

12.4. **Insurance and Bonds.** Prior to commencement of construction of the infrastructure set forth in this Addendum 4, Polygon must provide to the City performance and payment bonds satisfactory to the City to provide for the respective infrastructure set forth in this Addendum 4. Polygon shall cause the City to be named as an additional insured on the applicable contractor's insurance policy for the construction of the respective infrastructure provided for in this Addendum, in amounts and coverage satisfactory to the City.

13. **GAP Parcel.** Bischof/Lund donated approximately 4.454 acres of land to the URA to be used for parks and open space. This land is referred to as the GAP parcel and it makes up a portion of those parks identified as Regional Parks 7 and 8 in the Revised Villebois Parks Master Plan. The GAP parcel is identified on **Exhibit 2**. Polygon and the URA agree that Polygon will include this area in the design and construction of Regional Parks 7 and 8, subject to the costs incurred by Polygon for all the work described in Section 7 not exceeding the Capped Amount.

14. **Recitals Incorporated.** The recitals set forth above, inclusive of exhibits, are incorporated by reference as general terms of this agreement to provide for the intent of the parties in developing and constructing the specific provisions of the Terms and Conditions of this Addendum No. 4 Agreement.

15. **Miscellaneous.** This Addendum 4 amends the Matrix Development Agreement as specifically set forth herein. Except as set forth in Addendum 4, the Matrix Development Agreement, as previously amended, remains in full force and effect as to the parties to the Matrix Development Agreement.

16. **Assignment.** Polygon shall have the right to assign, without release, this Addendum No. 4 to an affiliate of Polygon, including Polygon at Villebois, L.L.C. An affiliate of Polygon is defined as any entity that is managed or controlled by the same people who manage Polygon.

17. **SDC Adjustments.** All references to SDCs in this Addendum 4 are references to system development charges established for the 2011-2012 fiscal year. Those charges are subject to adjustment on an annual basis proportionate to the changes in the Seattle Engineering Record's published construction cost index.

18. **Notices.** All notices, demands, consents, approvals, and other communications which are required or desired to be given by either party to the other hereunder shall be in writing and shall be faxed, hand delivered, or sent by overnight courier or United States Mail at its address set forth below, or at such other address as such party shall have last designated by notice to the other. Notices, demands, consents, approvals, and other communications shall be deemed given when delivered, three days after mailing by United States Mail, or upon receipt if sent by courier; provided, however, that if any such notice or other communication shall also be sent by telecopy or fax machine, such notice shall be deemed given at the time and on the date of machine transmittal.

To City: Michael E. Kohlhoff
City Attorney
City of Wilsonville
29799 SW Town Center Loop East
Wilsonville OR 97070

To Polygon: Polygon Northwest Company, L.L.C.
Attn: Fred Gast
109 E. 13th Street
Vancouver WA 98660

With a copy to: Radler White Parks & Alexander LLP
Attn: Barbara Radler
111 SW Columbia Street, Suite 1100
Portland, OR 97201

IN WITNESS WHEREOF, the parties have hereunto set their hands as of the day and year first written above.

POLYGON NORTHWEST COMPANY, L.L.C.

CITY OF WILSONVILLE

By: Brentview, Inc., its Manager

By: _____
Print Name: _____
As Its: _____

By: _____
Bryan Cosgrove
As Its: City Manager

THE URBAN RENEWAL AGENCY OF THE
CITY OF WILSONVILLE

By: _____
Bryan Cosgrove
As Its: Executive Director

Approved as to form:

Michael E. Kohlhoff, OSB #690940
City Attorney

EXHIBIT 1

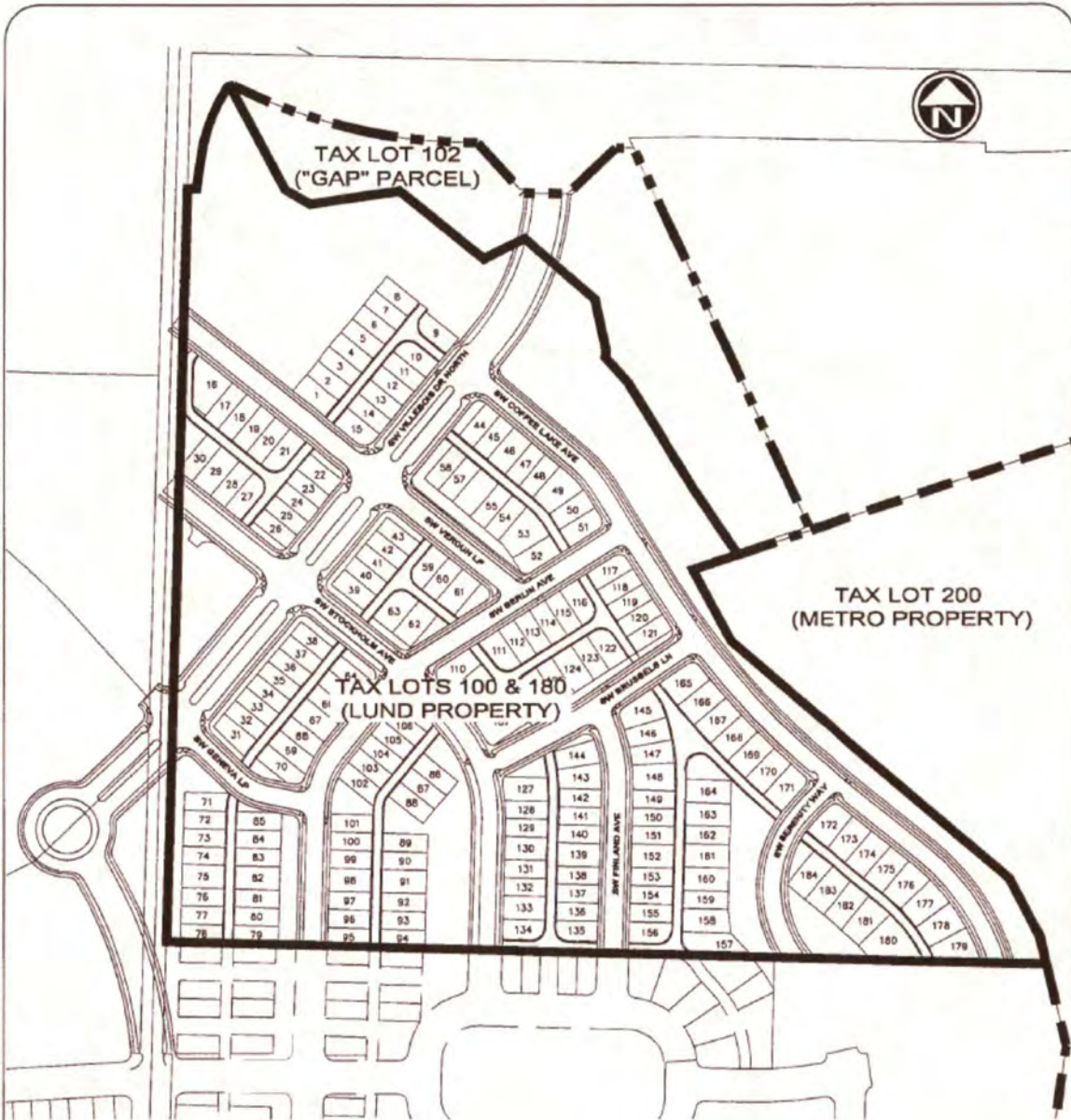
The land bounded by a line beginning South 24-1/2 ° East 14.96 chains from the Northeast corner of Section 15, in Township 3 South, Range 1 West of the Willamette Meridian, in the City of Wilsonville, County of Clackamas and State of Oregon, in the center of L.A. Seely's main ditch; thence South 70-1/2° West, 14.64 chains to the Northwest corner of R.I. Seely's land; thence South 35° East, 2 chains on the West side of said land; thence South 52° East, 8.97 chains on the West side of said land; thence South 10° East, 2 chains on the West line of said land; thence West, 22.50 chains to the East line of the Donation Land Claim of Samuel B. Franklin; thence North on said East line, 22.64 chains to the Southwest corner of George B. Seely's land; thence East, 24.37 chains to the center of said L.A. Seely's main ditch; thence South 20-1/2° East on the center line of said main ditch to the place of beginning.

ALSO a strip of land (hiatus) situated in the Northeast one-quarter of Section 15 and the Northwest one-quarter of Section 14, Township 3 South, Range 1 West of the Willamette Meridian, in the City of Wilsonville, County of Clackamas and State of Oregon; said strip of land (hiatus) lies Northerly of that certain tract of land conveyed to John and Rose Boston as described in Book 205, Page 458 and Book 319, Page 427 and lies Southerly of that certain tract of land conveyed to H.V. Rand, et ux, described in Book 143, Page 49, Deed Records, Clackamas County, Oregon; the Northerly line of said Boston Tract being described as follows:

Beginning at the Northwest corner of said Boston Tract, which Northwest corner is in the Easterly line of the Samuel Franklin Donation Land Claim No. 50 and bears North 00°00'00" East, 1698.90 feet from the South east corner of the Samuel Franklin Donation Land Claim No. 50; thence leaving said Easterly line, North 89°56'00" East parallel with the Northerly boundary of the R.V. Short Donation Land Claim a distance of 20.00 feet to a 5/8 inch iron rod in the Easterly right-of-way line of Brown road (County Road No. 355); thence continuing along said Northerly boundary of the Boston Tract, North 89°56'00" East (P.S. 21365 Records of Surveys, Clackamas County), 1403.07 feet to a 5/8 inch iron rod in the Easterly line of said Section 15, Township 3 South, Range 1 West; thence continuing North 89°56'00" East along the Northerly boundary of the Boston Tract (P.S. 21365 Record of Surveys, Clackamas County) parallel with said Northerly line of the R.V. Short Donation Land Claim, 132.36 feet to a 5/8 inch iron rod at the Northeastly corner of the herein described tract, which Northeastly corner is in the Westerly boundary of the R.I. Seely Tract as described in Book 43, Page 54, Deed Records, Clackamas County, Oregon.

EXCEPTING THEREFROM Those tracts deeded to The Urban Renewal Agency of the City of Wilsonville, by Deed recorded August 11, 2006, Fee No. 2006-073989, 2006-073990 and 2006-073991.

EXHIBIT 2



N:\proj\395-007\09 Drawings\03 Planning\Exhibits\395007.Development Agreement Exhibit-8.dwg - SHEET: LOTS Jul. 26. 12 - 1:07 PM jeff

DRAWN BY: PRE DATE: 7/24/12
 REVIEWED BY: JBL DATE: 7/24/12
 PROJECT NO.: 395-007
 SCALE: 1" = 250'

Pacific Community Design

[T] 503-941-9484 [F] 503-941-9485

EXHIBIT 3

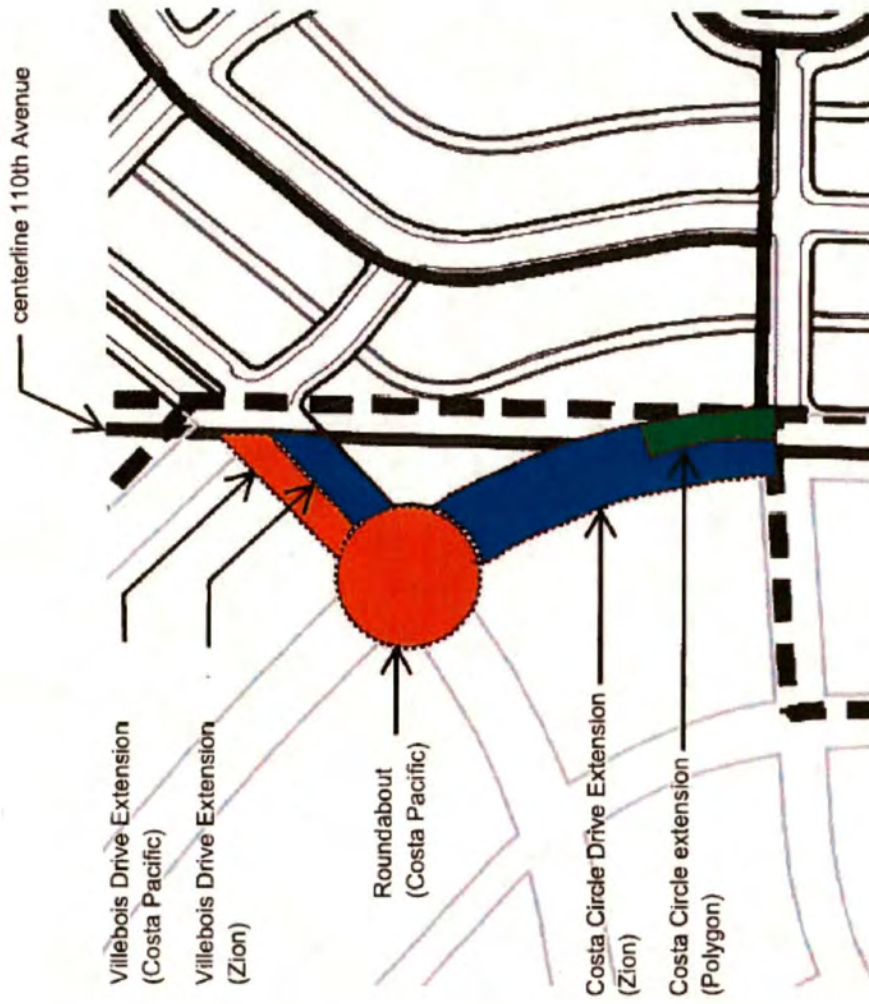


EXHIBIT 4

Supplemental I-5/Wilsonville Road Fee

pay supplemental fee for 184 lots at \$690/DU (\$127K).

Fee	Rate	Units	Cost
I-5/Wilsonville Rd	184	690	126,960
Total			126,960

Villebois Drive extension north of Coffee Lake Drive to Boeckman

Polygon to build from Coffee Lake Drive to existing roundabout on Boeckman (\$250K), receive road SDC credit for all costs (\$250K). City to dedicate required right of way and construction easements.

Road	Length	Cost per ft.	Cost
Villebois Drive	310	650	201,500
soft cost/cont		24%	48,360
Total	310		249,860

Villebois Drive extension from 110th Avenue to Coffee Lake Drive

Polygon to build from Coffee Lake Drive to 110th Ave., receive road SDC credit for 12 feet additional paving width and addition paving depth for remainder of paving (\$69K).

Item	Quantity (sf)	Unit price	Cost
Extra paving Width	10,260	2.00	20,520
Extra Paving depth	10,260	1.33	13,646
Extra Base Rock	42,750	0.50	21,375
soft cost/cont		24%	13,330
Total	10,260		68,871

Villebois Drive/Costa Circle extension and roundabout

Costa / Zion to dedicate required right-of-way and construction easements, Polygon to build (\$659K), Costa to waive Costa portion of MP Fee (\$127K), Polygon to receive road SDC credit for remaining offsite portion (\$474K), Costa / Zion reimburse City with supplemental fee at future building permits (\$181K Costa, \$293K Zion).

Road	Length	Cost per ft.	Cost
Villebois Drive	150	650	97,500
Roundabout		200,000	200,000
Costa Circle	360	650	234,000
Const. Total			531,500
Soft Cost/Cont		24%	127,560
Project Cost			659,060

Costa Pacific Items	Cost	%	Cost
Villebois Drive	97,500	50%	48,750
Roundabout	200,000	100%	200,000
Costa Circle	234,000	0%	0
Const. Total			248,750
Soft Cost/Cont		24%	59,700
Total Costa Cost			308,450
Less Master Plan Fee			-126,960
Costa Reimbursement			181,490

Zion Items	Cost	%	Cost
Villebois Drive	97,500	50%	48,750
Roundabout	200,000	0%	0
Costa Circle	234,000	80%	187,200
Const. Total			235,950
Soft Cost/Cont		24%	56,628
Total Zion Reimbursement			292,578

Polygon Items	Cost	%	Cost
Villebois Drive	97,500	0%	0
Roundabout	200,000	0%	0
Costa Circle	234,000	20%	46,800
Const. Total			46,800
Soft Cost/Cont		24%	11,232
Total Polygon Cost			58,032

Coffee Lake Drive thru property

Polygon to build within the property, receive Road SDC credits for Paving wider than 20 feet a the easterly curb (88K).

Item	Quantity (sf)	Unit price	Cost
Extra paving Width	12,240	2.00	24,480
Rock	12,240	1.33	16,279
easterly curb	2,040	15.00	30,600
soft cost/cont		24%	17,126
Total	12,240		88,485

Coffee Lake Drive 15-inch Sewer

Polygon to build thru property (\$685K), receive sewer SDC credit for oversizing from 8" to 15" (\$145K), and pay south portion late comer fee (50K).

Project cost:

Length	Cost	Cost per lf
South Portion		
1,779	597,143	335.66
North Portion		
2,040	684,750	335.66

North Portion SDC Credit

Item	Quantity (sf)	Unit price	Cost
Oversize from 8" to 15"	2,040.00	57.50	117,300
Soft Cost	117,300.00	24%	28,152
Total			145,452

South Late-comer Fee:

Area	Amount	Fee
Lund	50,203.72	50,204

Villebois Drive 18-inch Waterline

Polygon build from Coffee Lake Drive to 110th (\$106K), receive SDC credit for oversize from 12-in to 18-inch (\$32K).

Item	Quantity (lf)	Unit price	Cost
18-inch line	855	100.00	85,500
soft cost/cont			20,520
18-inch total			106,020
12 -inch line	855	70.00	59,850
soft cost/cont			14,364
12-inch total			74,214
Total Credit			31,806

Master Plan Fee

Pay City fee portion (\$39K), use Costa portion (\$127K) to pay for Village Drive/Costa Circle.

Fee	Units	Rate	Cost
MP Fee (Costa)	184	690	126,960
MP Fee (City)	184	210	38,640
Total	184	900	165,600

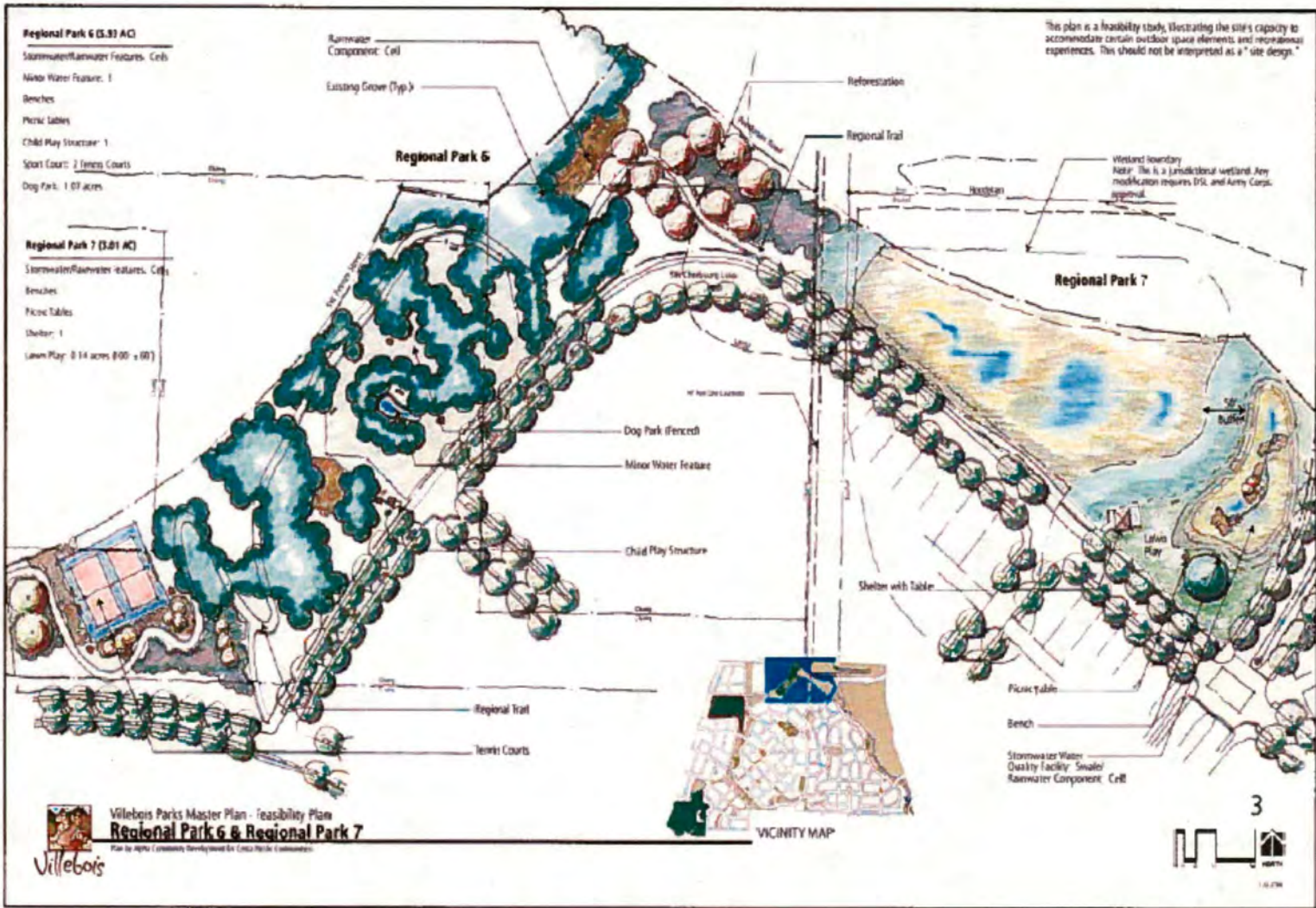
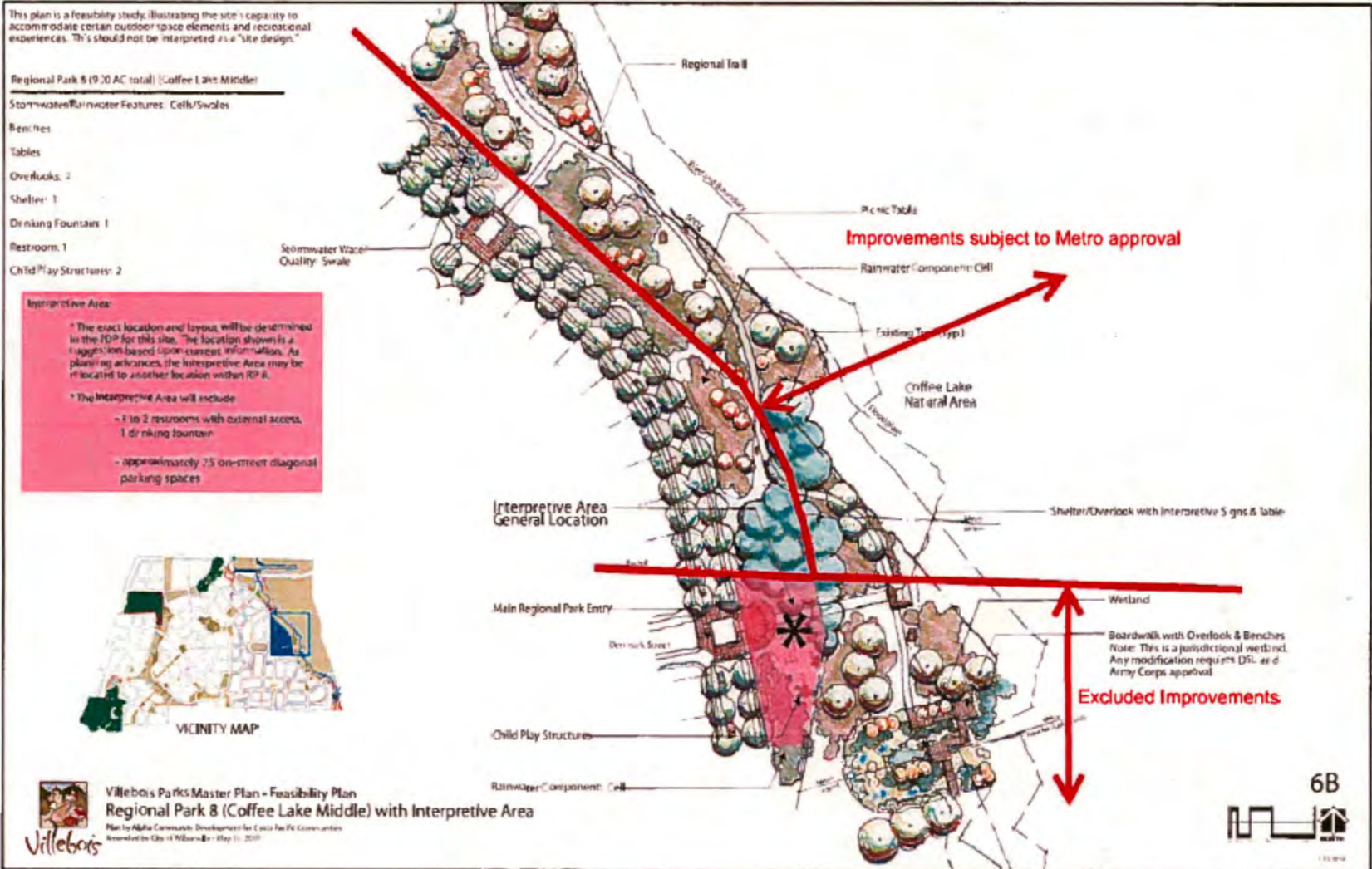


EXHIBIT 5



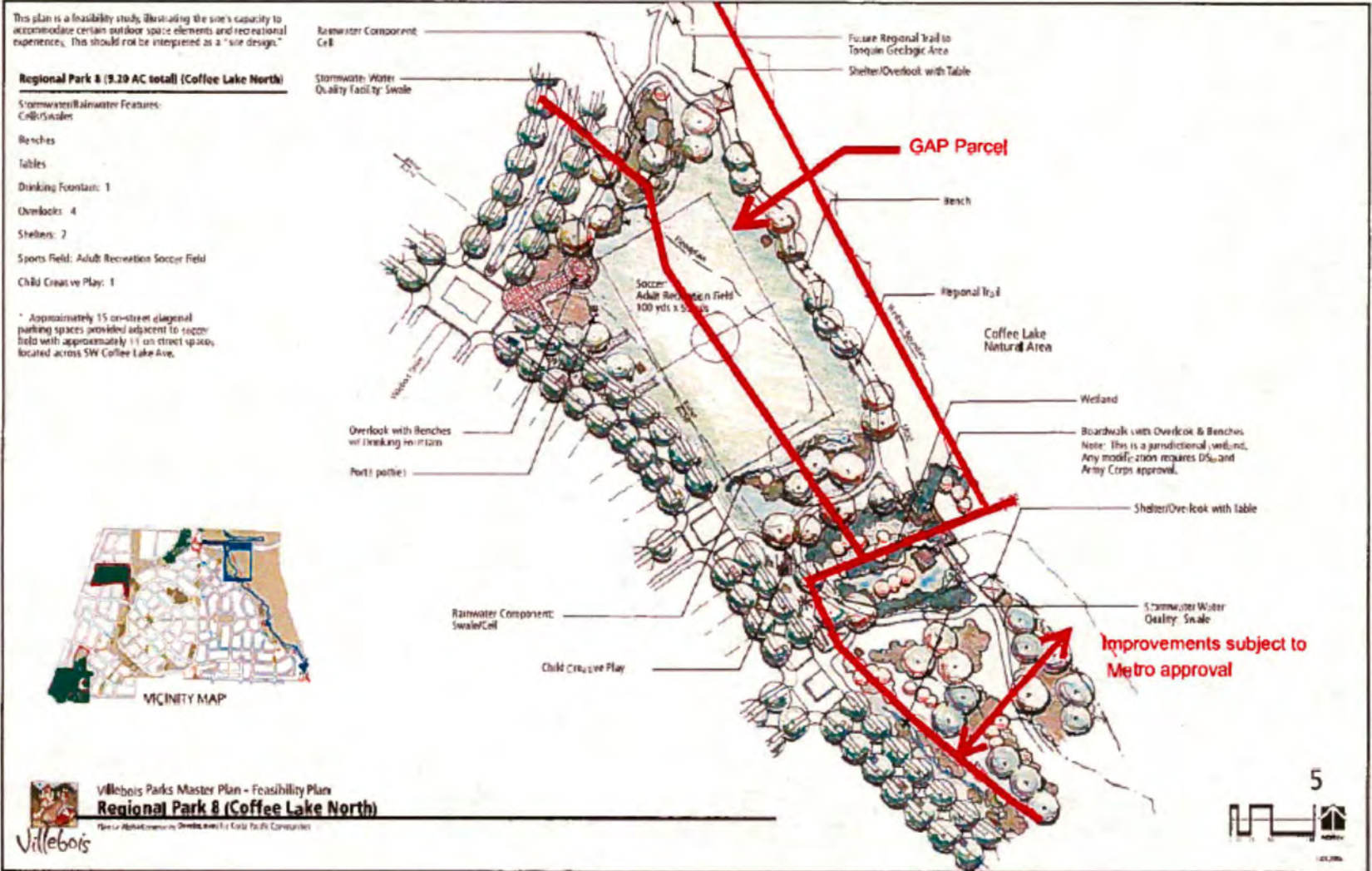
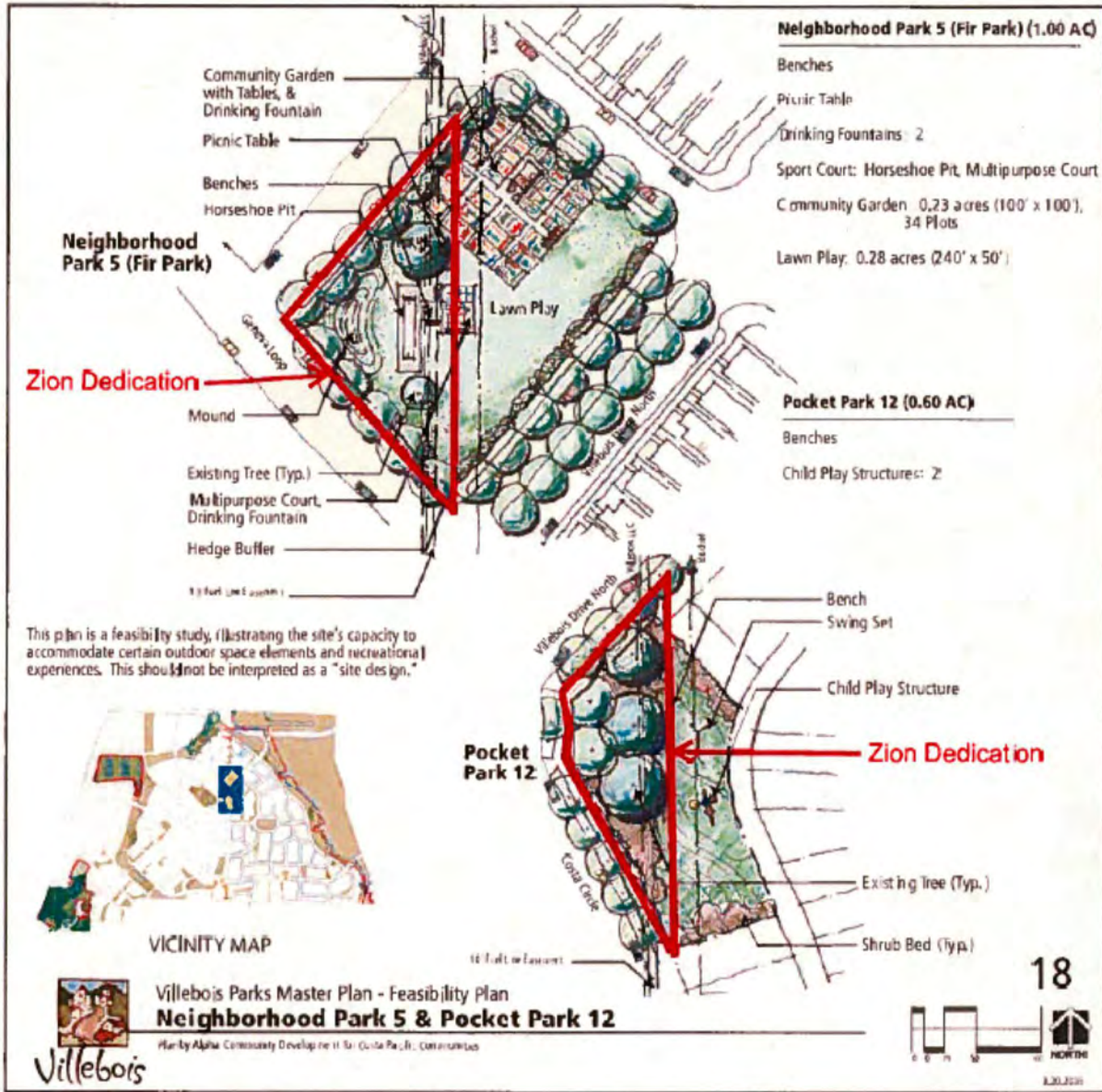


EXHIBIT 6



This plan is a feasibility study, illustrating the site's capacity to accommodate certain outdoor space elements and recreational experiences. This should not be interpreted as a "site design."

Pocket Park 9 (0.21 AC)

Child Creative Play: 1

Linear Green 15 (0.35 AC)

Lawn Play: 0.11 acres (30' x 80') (40' x 50')

Linear Green 16 (0.19 AC)

Lawn Play: 0.2 acres (60' x 70') (60' x 70')

Chang Dedication

Costa Pacific Dedication

Interim Vehicular Access Route



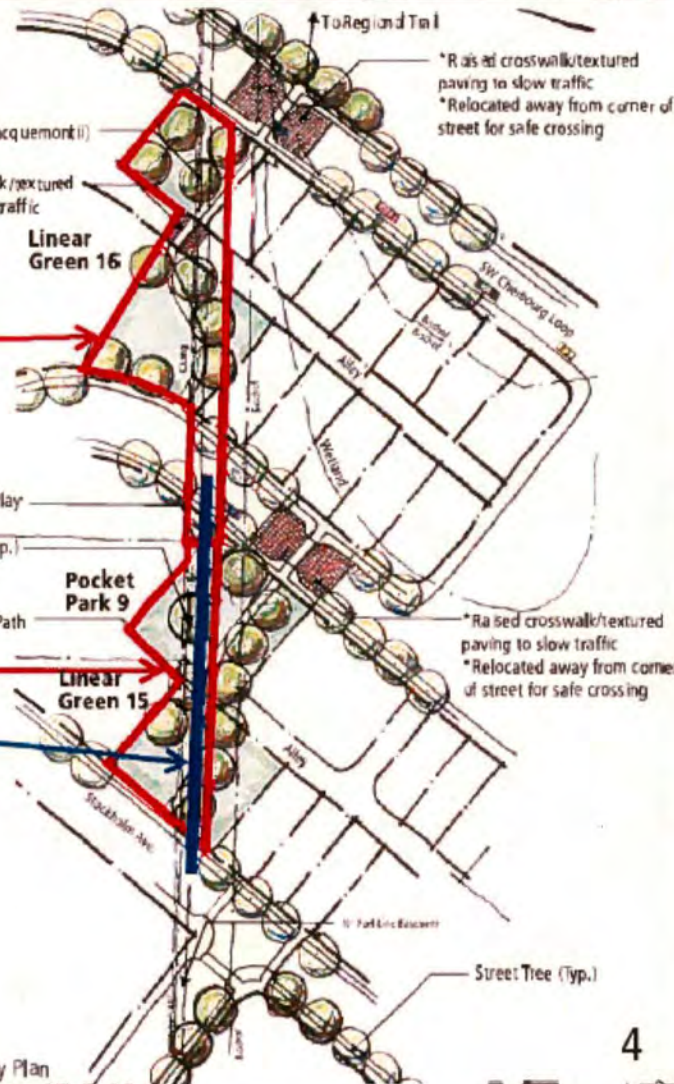
VICINITY MAP



Villebois

Villebois Parks Master Plan - Feasibility Plan
Pocket Park 9, Linear Greens 15 & 16

Merley Alder Community Development in Costa Pacific Communities



4

1/28/2008

POLYGON NORTHWEST COMPANY

August 15, 2012

Mayor Tom Knapp and City Council
City of Wilsonville
29799 SW Town Center Loop E
Wilsonville, OR 97070

Re: August 20, 2012 City Council Meeting
Letter in Support of Resolution No. 2377

Dear Mayor Knapp and City Councilors:

Polygon Northwest Company is pleased to submit this letter in support of Resolution No. 2377.

Our first investment in Villebois was made in 2011. We made the investment because we liked and shared the values we found in the city. Wilsonville is a strong community with involved citizens who care about how their community looks and functions. Following on the success of our first building venture, we extended our investment this year with our second acquisition in Villebois. We are currently developing that site, which includes 169 homes, Regional Park 3 and the long awaited swim center. From 2010 forward we have enjoyed our working relationship with the City of Wilsonville. We look forward to continued investments in Villebois and in greater Wilsonville. The resolution before you helps lay the groundwork for those investments.

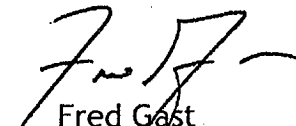
While we were not involved with Matrix Development Corporation's original 2004 Development Agreement, or the prior three Addendums to that Development Agreement, we find that the summary of events included in the resolution reflects our understanding of previous agreements and efforts. A great deal has occurred and changed since 2004.

Earlier this year we became extensively involved in the drafting of Addendum No. 4 to the Development Agreement which is attached to the Resolution. In simple terms, Addendum No. 4 covers obligations related to a portion of the property covered by the original 2004 Development Agreement which is currently owned by Donald E. Bischof and Sharon L. Lund. The addendum specifies improvements and amenities that we will be obligated to advance and complete in

the course of developing the subject property. The improvements will include roads, roundabouts and regional parks. As stated earlier, we would like to purchase that property after obtaining the necessary approvals we need to develop the property. One part of that approval process is receiving your approval of the proposed Addendum No. 4.

We encourage you to approve the Resolution. We are fully prepared to enter into Addendum No. 4 with the City of Wilsonville and the Urban Renewal Agency if you grant your approval. Thank you for considering this Resolution

Sincerely,
Polygon Northwest



Fred Gast
President

POLYGON NORTHWEST COMPANY

August 15, 2012

*Rec'd 8/21/12
AK*

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Sincerely,
Polygon Northwest



Fred Gast
President

**CITY COUNCIL MEETING
STAFF REPORT**

Meeting Date: August 20, 2012	Subject: Water System Master Plan Ordinance No. 707 Staff Member: Eric Mende, Deputy City Engineer Department: Engineering
Action Required	Advisory Board/Commission Recommendation
<input type="checkbox"/> Motion <input checked="" type="checkbox"/> Public Hearing Date: 08/20/12 <input checked="" type="checkbox"/> Ordinance 1st Reading Date: 08/20/12 <input type="checkbox"/> Ordinance 2nd Reading Date: <input type="checkbox"/> Resolution <input type="checkbox"/> Information or Direction <input type="checkbox"/> Information Only <input type="checkbox"/> Council Direction <input type="checkbox"/> Consent Agenda	<input checked="" type="checkbox"/> Approval <input type="checkbox"/> Denial <input type="checkbox"/> None Forwarded <input type="checkbox"/> 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.
Staff Recommendation: Approval of an update to the Water System Master Plan and accompanying Ordinance on 1st Reading	
Recommended Language for Motion: I move to Approve Ordinance No. 707 on first reading, adopting the July 2012 City of Wilsonville Water System Master Plan.	
PROJECT / ISSUE RELATES TO: <i>[Identify which goal(s), master plans(s) issue relates to.]</i>	
<input checked="" type="checkbox"/> Council Goals/Priorities CC Goal B: Ensure efficient, cost effective and sustainable development and infrastructure	<input checked="" type="checkbox"/> Adopted Master Plan(s) Water System Master Plan
<input type="checkbox"/> 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. 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:

Overall, the City water system is in very good shape. Most of the distribution system is less than 30 years old, there is adequate storage for emergencies, adequate water rights for the long term, and the water treatment plant is state-of-the art. Future demand estimates are based on historic growth rates, current delivery agreements with the City of Sherwood, and with additional contingencies included for potential large industrial users. 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. These wells may never be used, however, a reliable output from the well system directly offsets the need for additional storage reservoirs to meet required emergency and fire flow needs. Assuming the City must do either the wells or additional storage, 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 seismic analysis of the 0.75 million gallon Charbonneau Storage Reservoir indicates this reservoir becomes unusable after a large (magnitude 6 to 7) earthquake. Assuming the existing pipeline across the Boone Bridge is also damaged, the Charbonneau District would have less than 300 gallon per minute fire flow capacity, where 1500 gpm is needed. To address this deficiency, either a new seismically designed storage tank is required, or a secondary seismically stable pipeline is needed, bored under the river from the main part of the City. The pipeline alternative has a better benefit / cost ratio than a new tank, as well as a lower risk of damage during an earthquake, and is therefore the recommended alternative. (See Table 3.4, page 3-7)

The Master Plan is consistent with the Goals, Policies, and Implementation Measures of the current Comprehensive Plan, and recommends only a few minor changes. Specifically, the Plan recommends three new policies (3.1.6, 3.1.7, 3.1.8) which in essence codify activities such as demand profiling, conservation programs, and coordination of construction efforts, which are already being done. A revised Implementation Measure (3.1.5.b) adds impacts on existing fire flows as a criteria to be considered by the Development Review Board in determining Conditions of Approval for new developments. (See Section 7.0, page 7-2)

EXPECTED RESULTS:

The Water System Master Plan (and Appendices) is designed to be a key reference document 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:

Work on the Master Plan update began in December 2010. Document development began with confirmation of population estimates, current water demand, system planning criteria, hydraulic model calibration, and a system inventory and evaluation. Actual water meter data was confirmed, well pump tests were performed, as was a special seismic evaluation of the Charbonneau storage reservoir. Multiple technical reviews were performed internally by Public Works, Planning, and Engineering staff. External reviews were solicited from Veolia Water (the City's Operating contractor at the Water Treatment Plant), Tualatin Valley Water District (TVWD), Tualatin Valley Fire and Rescue (TVF&R), and the City of Sherwood. Public Input was solicited at numerous times throughout the process, as detailed in the Community Involvement section below.

The current document is the sixth iteration. The Planning Commission Public Hearing was held on July 11, 2012, resulting in a recommendation for approval. This will be the final Public Hearing for the Water System Master Plan. After adoption by City Council, this Master Plan becomes a subset of the City Comprehensive Plan.

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: 8/8/12 _____

The 2012/13 budget appears to be sufficient for completion of the Water System Master Plan and the rate study.

LEGAL REVIEW / COMMENT:

Reviewed by: MEK _____ Date: 8/8/12 _____

The Ordinance for Adoption of the Plan is approved as to form. The proposed Plan meets legal requirements for facility planning.

COMMUNITY INVOLVEMENT PROCESS:

To solicit public input, a public open house was conducted on May 9, 2012, and a Measure 56 notice was sent to approximately 4500 households in June. In addition, individual letters were sent to the City's 30 largest water users, articles were published in the *Boones Ferry Messenger*, and the various drafts of the document have been posted on the City website since early May. Work Sessions were held with Planning Commission on March 14, 2012 and May 9, 2012. City Council Work Sessions were held on March 19, 2012 and July 16, 2012. Work sessions are

publicly noticed and open to the public.

Very little feedback was received from the general public throughout the process. Approximately 8 calls were fielded as a result of the Measure 56 Notice. Two individuals provided written comments prior to the Planning Commission Hearing, and two individuals provided verbal testimony at the Hearing.

Planning Commission provided thoughtful input into the Plan including creation of glossary, expansion and re-formatting of the Executive Summary and inclusion of a more detailed benefit/cost analysis for the recommended Charbonneau pipeline that greatly enhanced the readability of this highly technical document. The key issues addressed in public testimony included questioning: a) why the document did not address rates and funding mechanisms for the CIP, and b) the justification for a secondary pipeline to serve the Charbonneau District. Based on the Planning Commission's determination, the above issues raised by the public testimony were not incorporated in the recommendation of the Planning Commission, and therefore the Plan remains as presented in regards to these two issues. The other changes resulting from verbal testimony and Planning Commission input are incorporated into the current document. The Council should expect additional verbal and/or written testimony on these issues at this hearing.

POTENTIAL IMPACTS or BENEFIT TO THE COMMUNITY

A reliable, cost effective, and well planned water system maintains property values and a high quality of life, promotes residential growth and new businesses, and protects the general health, welfare, and safety of the public.

ALTERNATIVES:

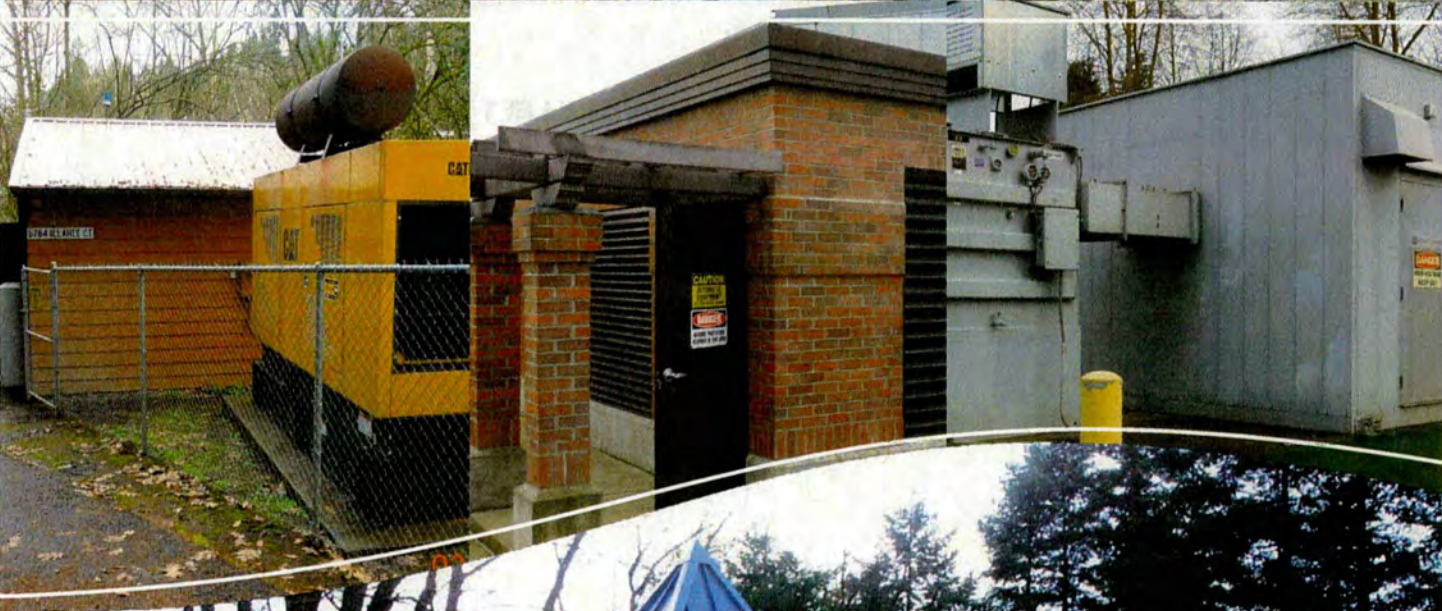
No alternatives were considered to the basic decision to perform a revision of the 2002 Master Plan. The Scope of the Master Plan did, however, specifically exclude a consideration of future water rates and System Development Charges (SDC's), and consideration of long term improvements for the Water Treatment Plant. The alternative to include Rate Study considerations within the Master Plan was not chosen because important information concerning long range Water Treatment Plant improvements, having significant impacts on rates and SDCs, will not be available until the a Treatment Plant specific Master Plan update is prepared. These activities are planned for the near future, as discussed above.

CITY MANAGER COMMENT:

ATTACHMENTS

- A. Ordinance No. 707
- B. Hard copy of Final Draft Document (July 25, 2012) without Appendices B-H. Note: Appendices B-H are lengthy and technical. A disk with Appendices B-H is provided to the City Council and is available for your review or they can be found on the City web page.
- C. Planning Commission Record

City of Wilsonville



FINAL DRAFT – July 25, 2012

WATER SYSTEM MASTER PLAN



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Water System Master Plan

City of Wilsonville, Oregon



KELLER
associates

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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



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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	13,946	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						
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 unserved 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		Operating Fund	Additional Annual O&M
				%	Cost		
Priority 1A Improvements (by 2017)							
Water Supply							
106	Portable Flow Meter (for well tests)	Operations	\$ 13,000	0%	\$ -	\$ 13,000	\$ 1,360
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	\$ 640
123	Charbonneau Reservoir Chlorine Monitoring	Operations	\$ 7,000	0%	\$ -	\$ 7,000	\$ 960
124	Automated Valve at Toosa/Westfall (West Side Tank)	Operations	\$ 58,000	100%	\$ 58,000	\$ -	\$ 580
126	3.0 Million Gallon West Side Tank and 24-inch Transmission (in Pre-design)*	Growth	\$ 5,840,000	100%	\$ 5,840,000	\$ -	\$ 17,160
128	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	18-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			\$ 10,490,000		\$ 10,434,400	\$ 65,600	\$ 21,480
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	\$ 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	\$ 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 (Apts E. of Canyon Creek/Burns)	Fire Flow	\$ 41,000	0%	\$ -	\$ 41,000	\$ 100
169	8-inch Loop between Vahos & 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		\$ 283,600	\$ 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		Operating Fund	Additional Annual O&M
				%	Cost		
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	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	\$ 68,000	0%	\$ -	\$ 68,000	\$ 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
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							
361	Zone D Booster Station at C Level Tank	Growth	\$ 609,000	100%	\$ 609,000	\$ -	\$ 11,000
362	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)			\$ 26,628,500		\$ 21,008,700	\$ 4,619,800	\$ 98,360

* 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	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	\$ 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			\$ 1,786,600

* 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 3 rd 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	32,466	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 (MWH, 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 Analysis 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 ³		
		SFDU ²	Multi-Family	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

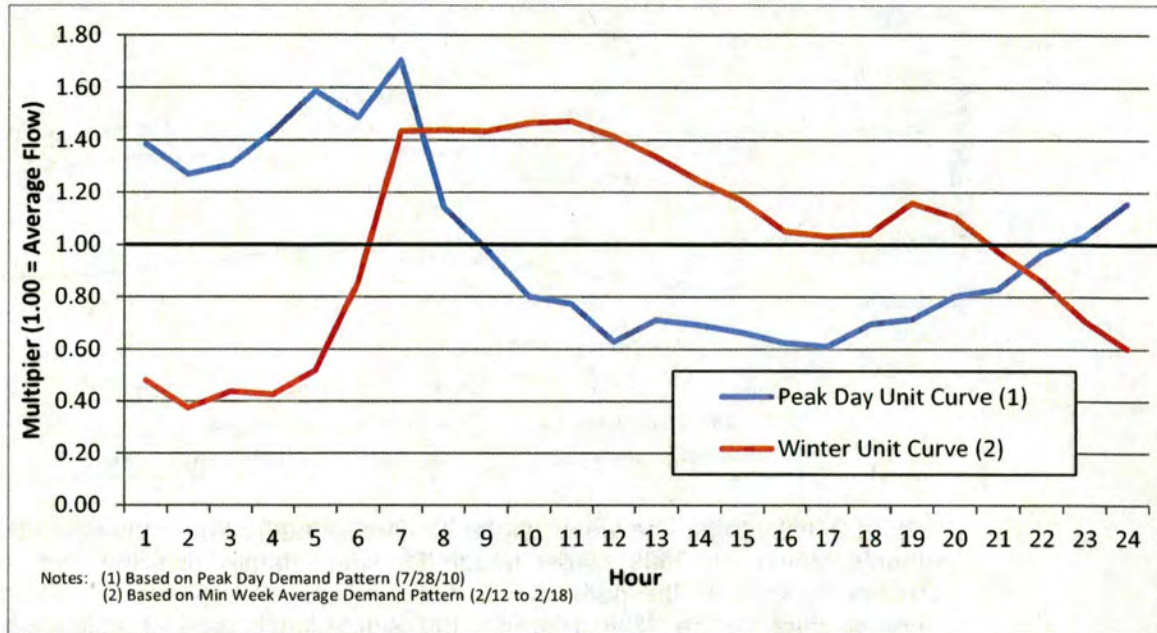
	Per Capita Demand* (gpcd)	System Demand (mgd)
Yearly Average	164	3.20
Minimum Month	110	2.15
Maximum Month	286	5.58
Maximum Day	343	6.70
Peak Hour	583	11.4

*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

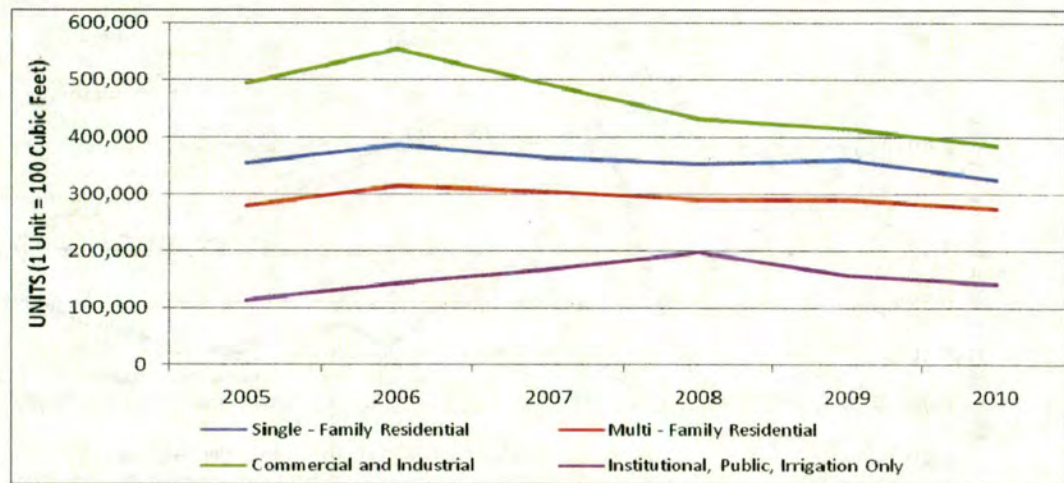
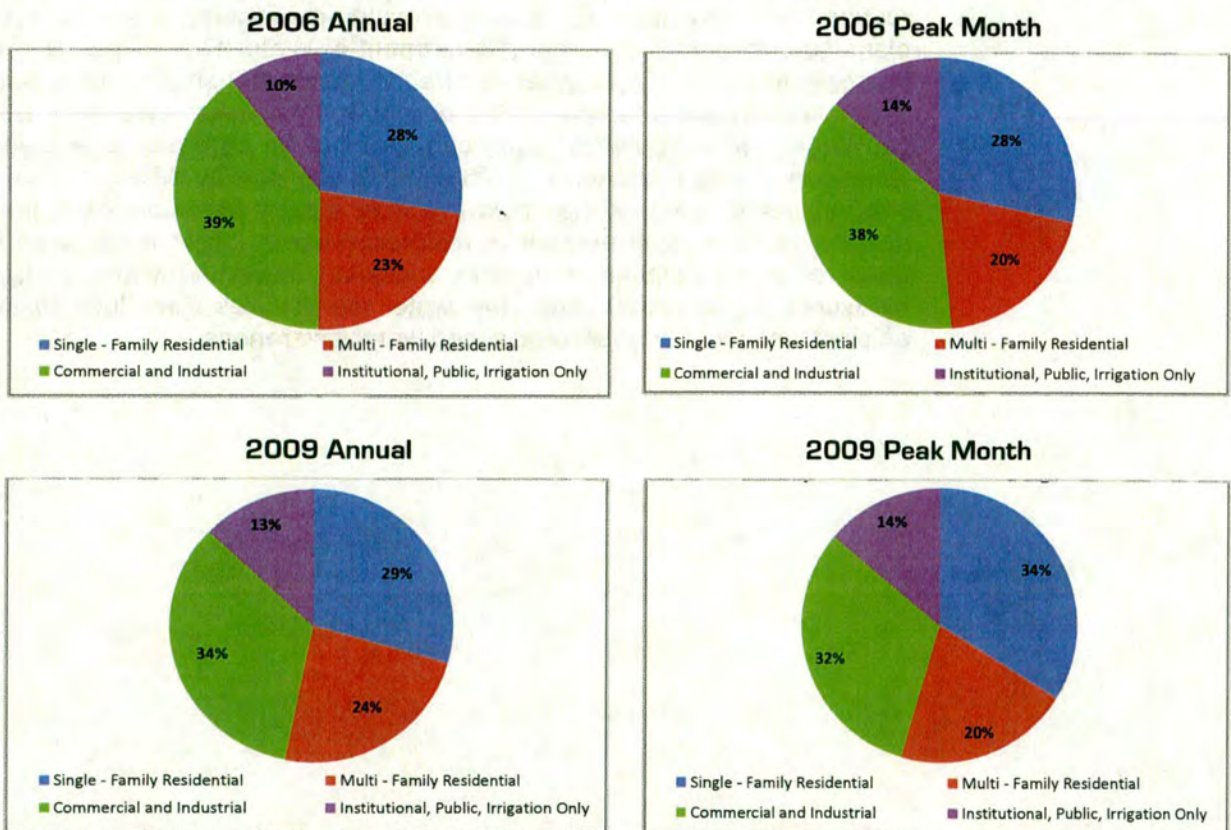


Chart 2.3 illustrates the water usage by user category on an annual and peak month basis. In 2009, water usage for single family dwelling units (blue) makes up 34% of the peak month water usage, as opposed to 29% of the annual water usage. This illustrates that single family dwelling units likely use 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	2.060	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	0.968	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]

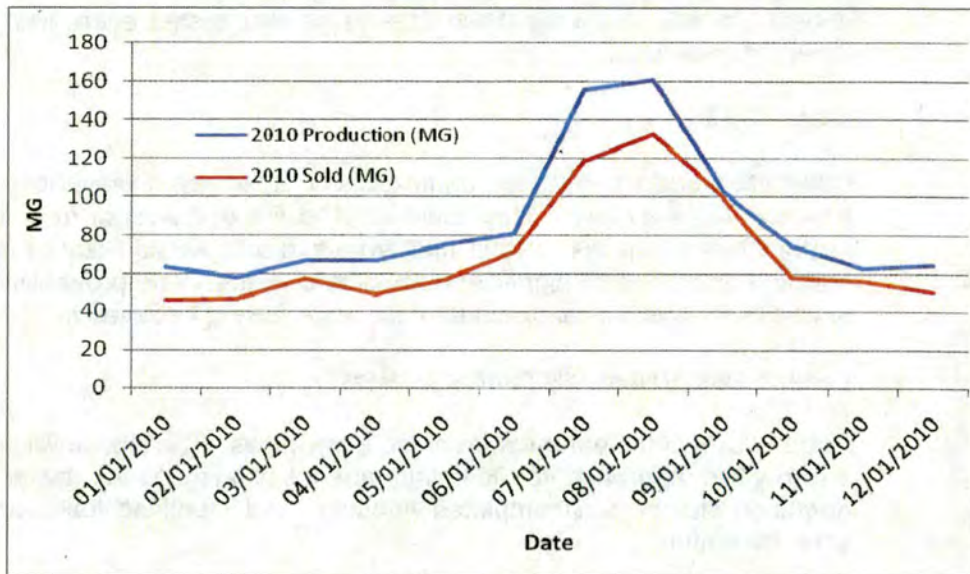
	2005	2006	2007	2008	2009	2010
Produced	1,016	1,130	1,153	1,143	1,120	1,030
Sold*	938	1,060	1,000	961	919	846
Other Uses**	3.5	3.5	3.5	3.5	4.1	3.4
Unaccounted	74	67	150	179	197	181
% Unaccounted	7.3%	5.9%	13.0%	15.7%	17.6%	17.5%

* 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:

<u>Source</u>	<u>Potential</u>
• 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 result 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

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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 H2ONet water model. This modeling platform is an InnoVize product which operates in AutoCAD. In 2008, the City elected to update and migrate the existing model to a GIS platform product, also by InnoVize, 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
<i>Total without Clearwell</i>	<i>7.60</i>
<i>Total with Clearwell</i>	<i>8.67</i>

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



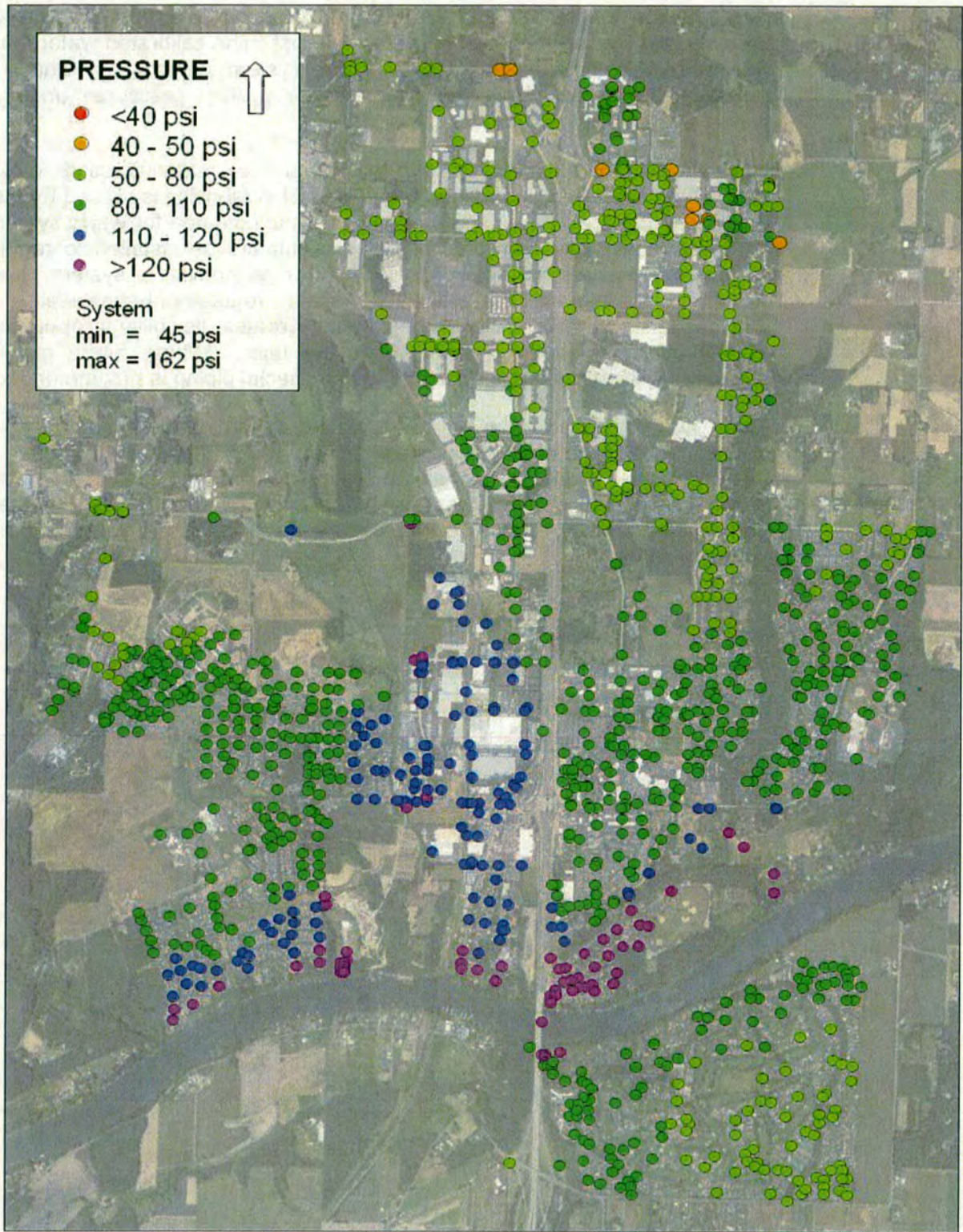
System Pressures

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.

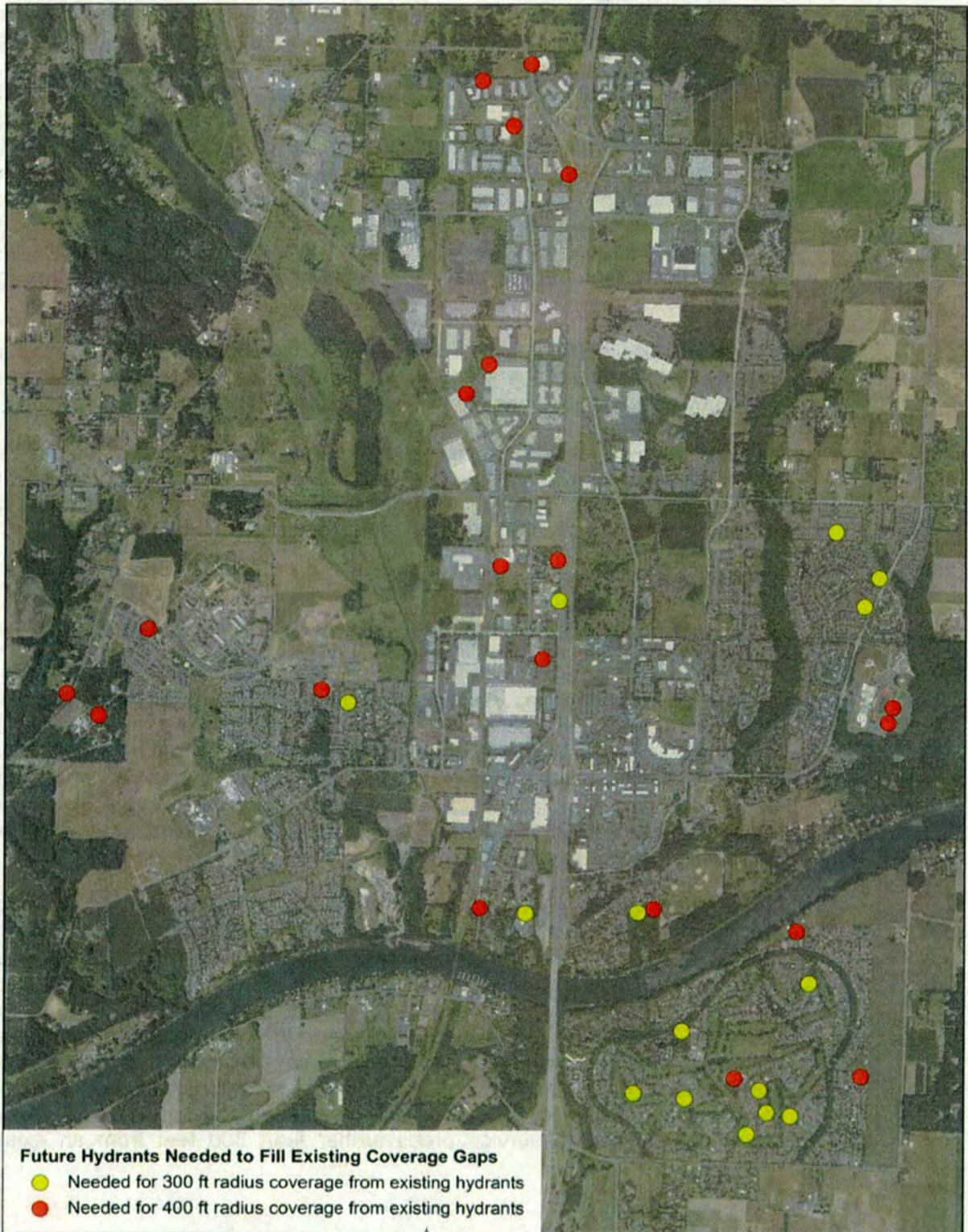
Other System Deficiencies

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 unserved 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 Geshellschaft 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 Geshellschaft (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.



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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 efficiency 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	18/39	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	18/39	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	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 W RTP 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 unserved 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		Operating Fund	Additional Annual O&M
				%	Cost		
Priority 1A Improvements (by 2017)							
Water Supply							
106	Portable Flow Meter (for well tests)	Operations	\$ 13,000	0%	\$ -	\$ 13,000	\$ 1,360
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	\$ 640
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	18-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			\$ 10,400,000		\$ 10,434,400	\$ 68,600	\$ 20,480
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	\$ 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	\$ 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 (Apts E. of Canyon Creek/Burns)	Fire Flow	\$ 41,000	0%	\$ -	\$ 41,000	\$ 100
169	8-inch Loop between Vahos & 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			\$ 2,476,600		\$ 283,600	\$ 2,192,900	\$ 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		Operating Fund	Additional Annual O&M
				%	Cost		
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	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	\$ 68,000	0%	\$ -	\$ 68,000	\$ 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
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	\$ 42,140
Priority 3 Development Dependent Improvements (by Build-out)							
Water Distribution Piping							
361	Zone D Booster Station at C Level Tank	Growth	\$ 609,000	100%	\$ 609,000	\$ -	\$ 11,000
362	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	\$ 98,360

* 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	\$ 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	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	\$ 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 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 3 rd 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 finished 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



- Figure 1: Existing City Distribution System
- Figure 2: Study Area & Land Use
- Figure 3: Existing System: Pipe Materials
- Figure 4: Priority Improvements & Replacements
- Figure 5: Existing & Future Pressure Zones



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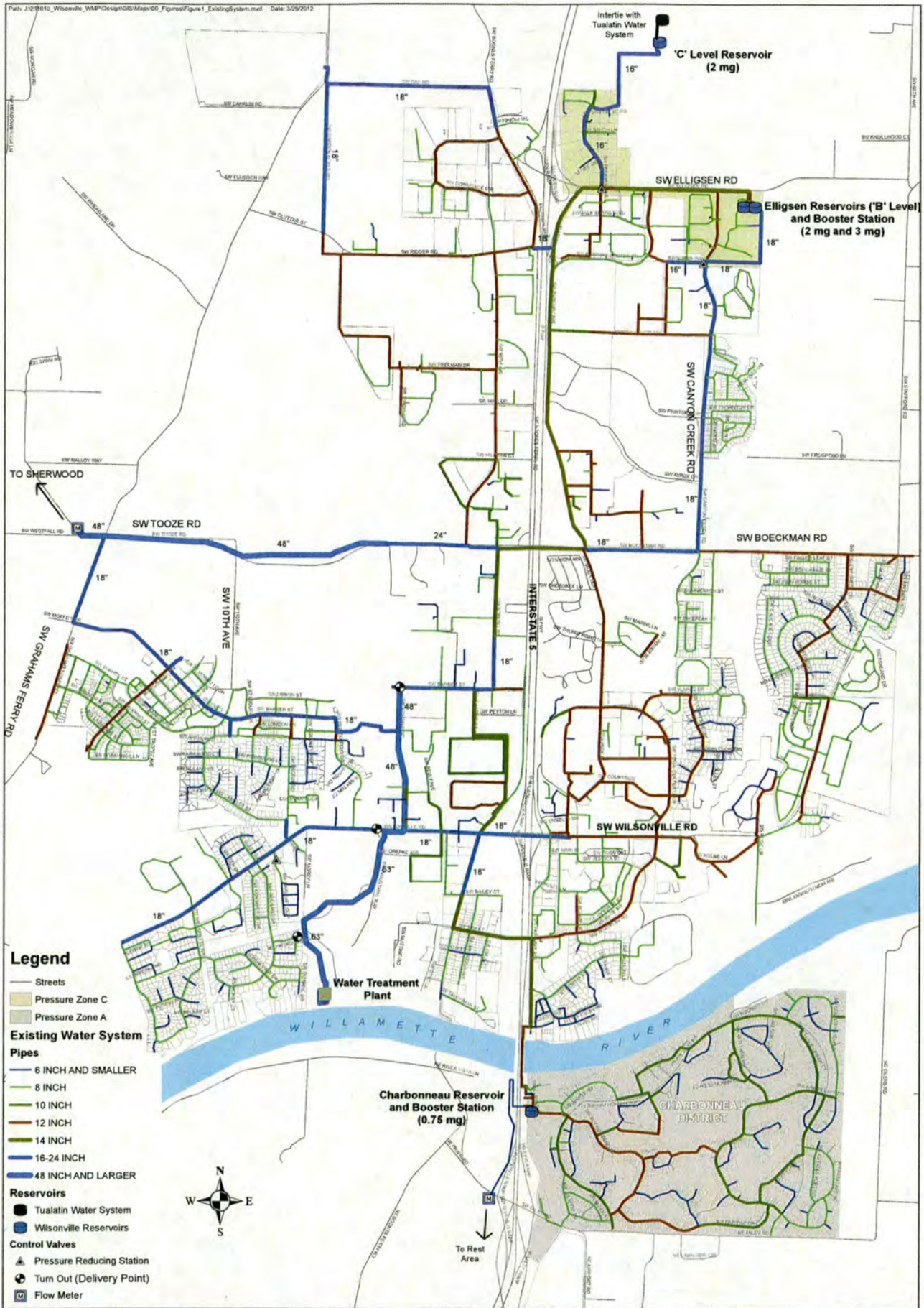


Figure:
1

Title:
**Existing City
Distribution System**

**WATER
MASTER PLAN**

Prepared for:
**CITY OF
WILSONVILLE, OR**



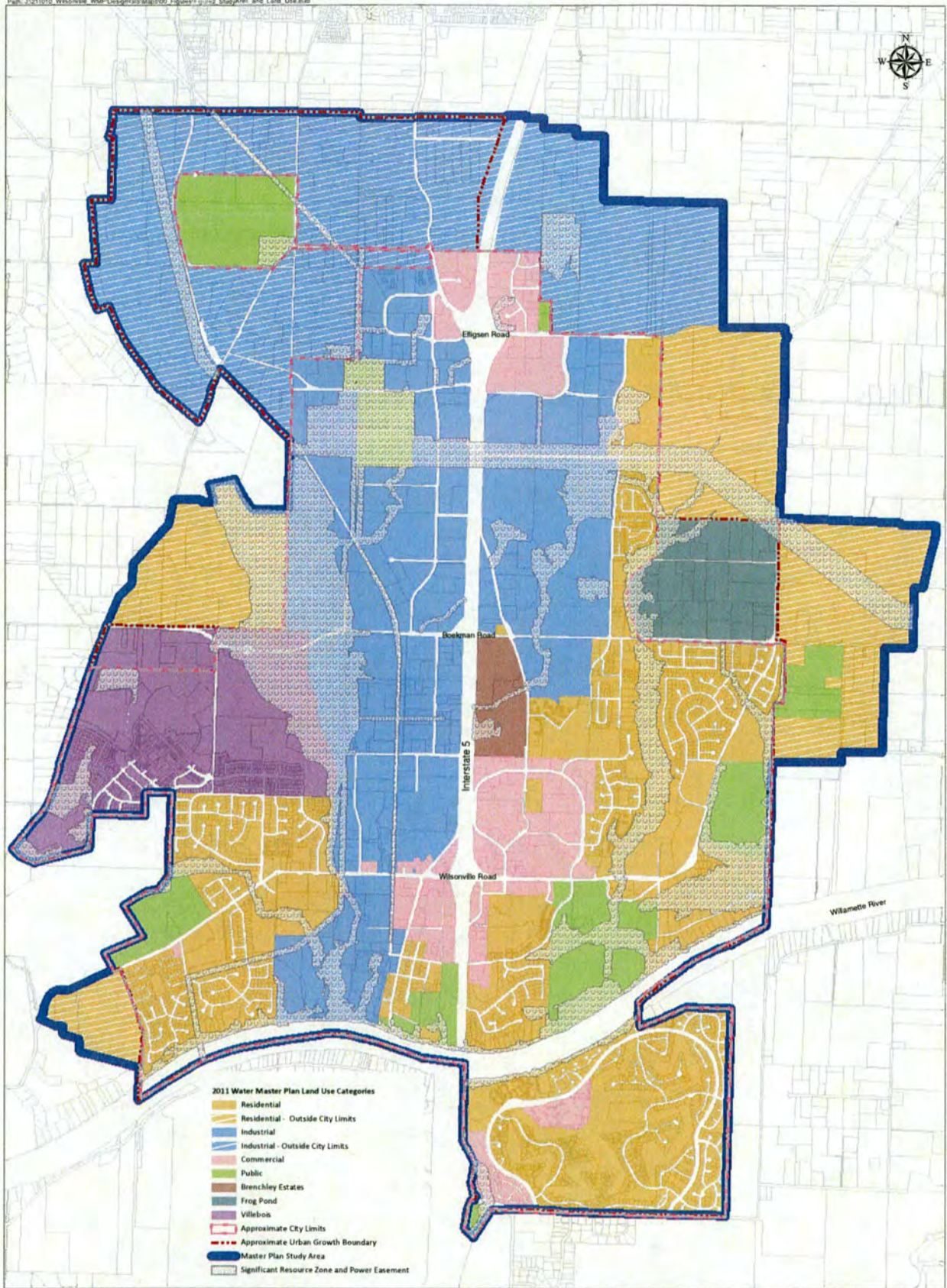


Figure:
2

Title:
Study Area
&
Land Use

**WATER FACILITIES
MASTER PLAN**

Prepared for:
**CITY OF
WILSONVILLE,
OREGON**



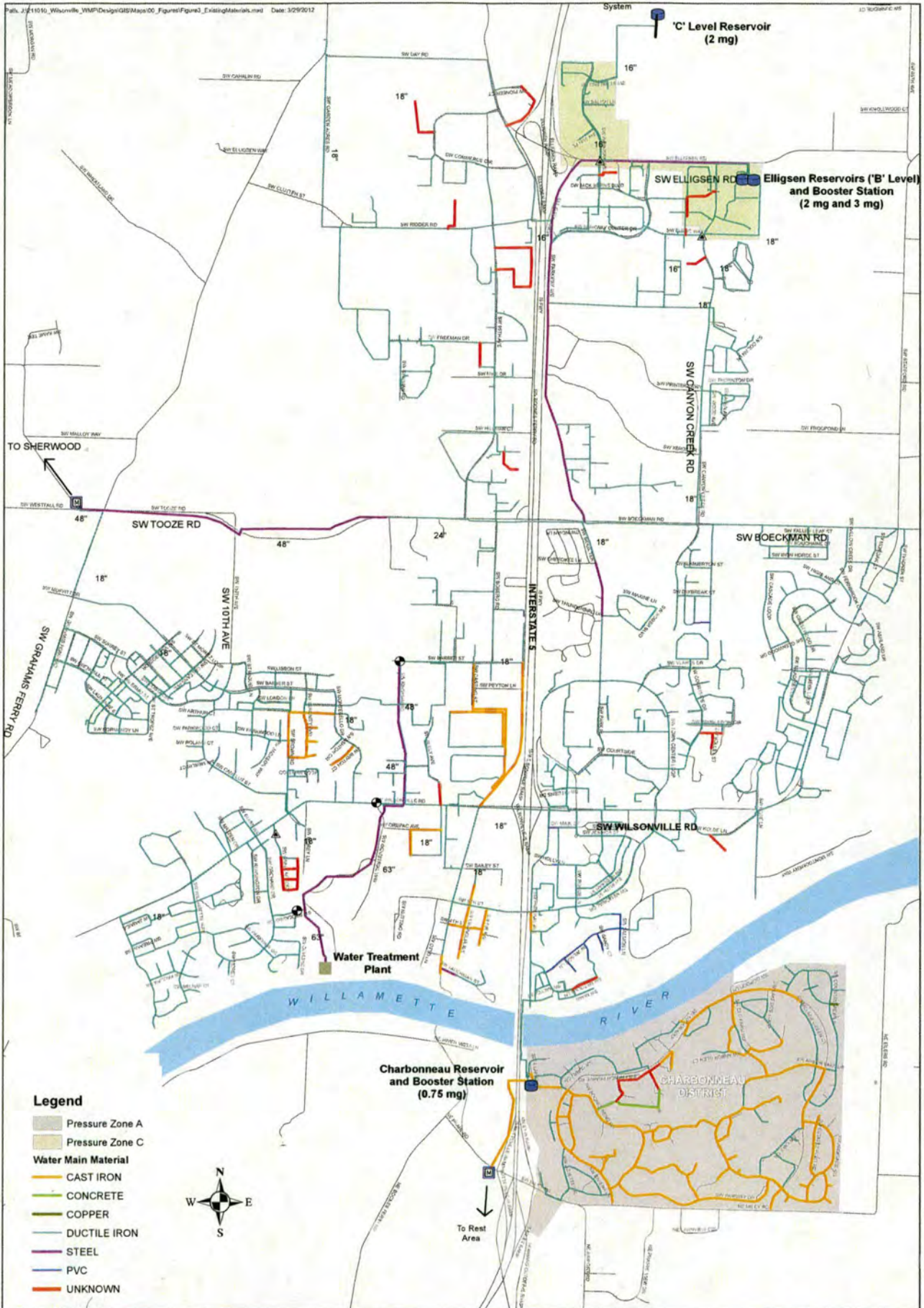

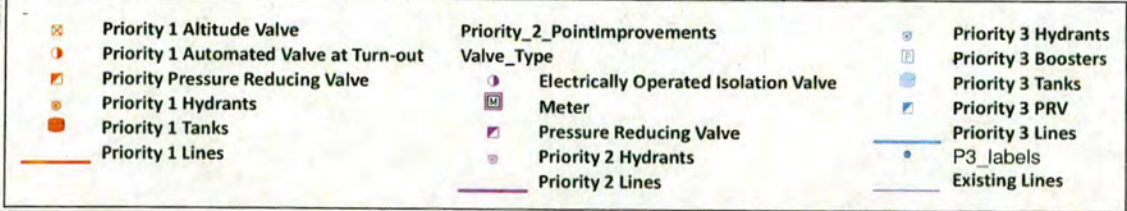
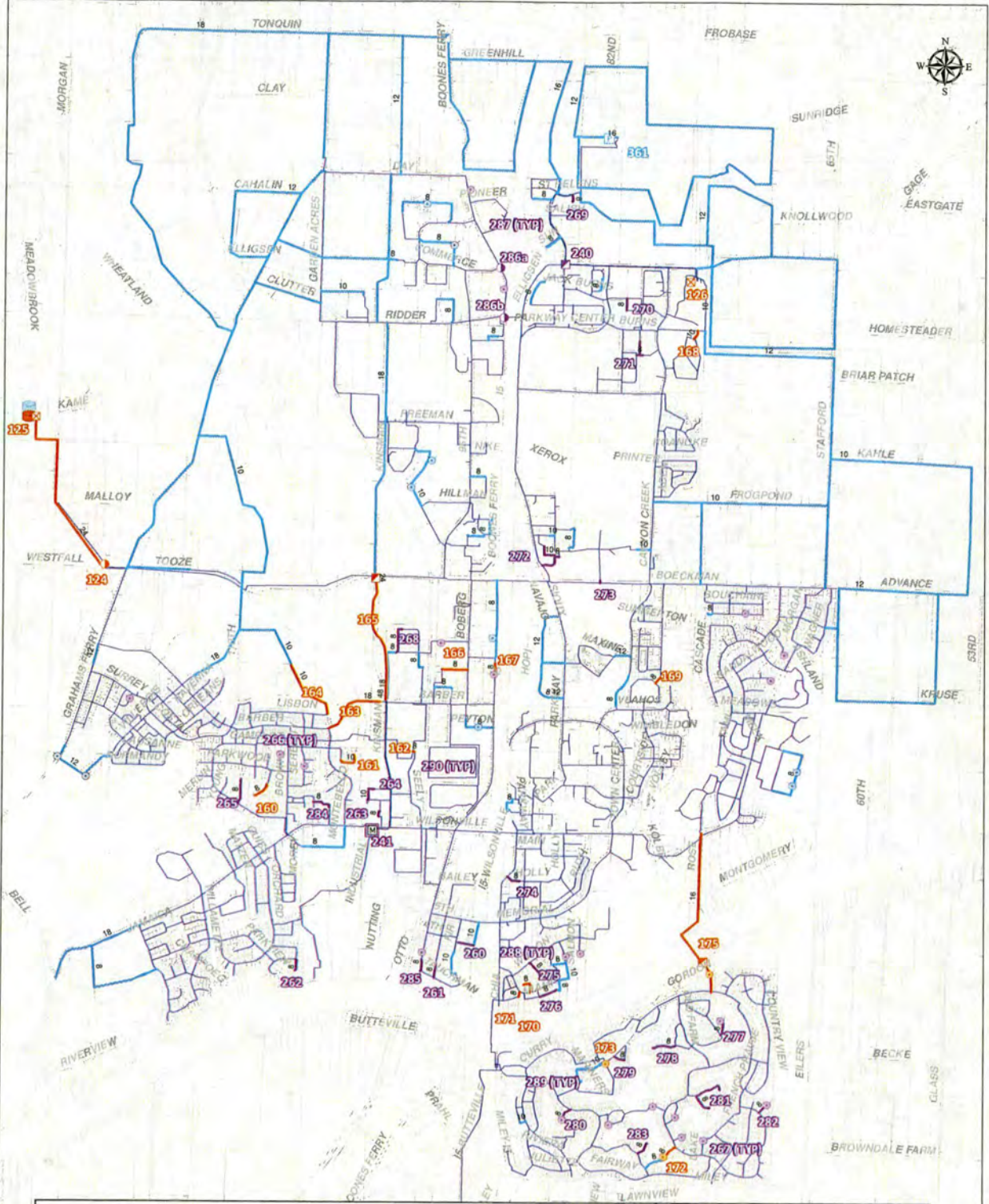
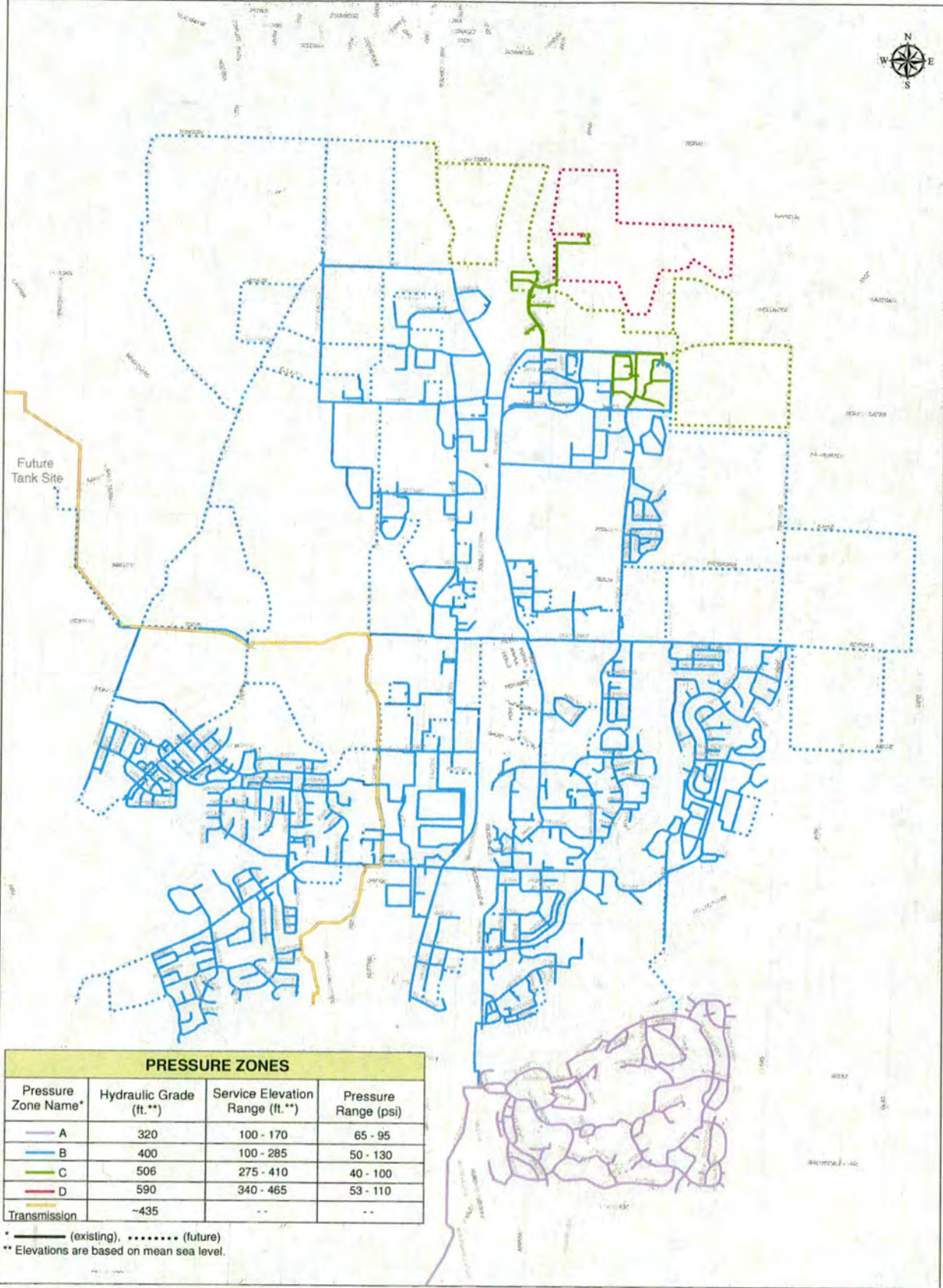



Figure: 3	Title: Existing System: Pipe Materials	WATER MASTER PLAN	Prepared for: CITY OF WILSONVILLE, OR	 KELLER Associates
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PRESSURE ZONES			
Pressure Zone Name*	Hydraulic Grade (ft.**)	Service Elevation Range (ft.**)	Pressure Range (psi)
A	320	100 - 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:	WATER FACILITIES MASTER PLAN	CITY OF WILSONVILLE, OREGON	 KELLER associates
5	Existing and Future Pressure Zones			

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



Wilsonville Planning Commission

Attest:


Linda Straessle, Administrative Assistant III

SUMMARY of Votes:

Chair Altman:	<u>Aye</u>
Commissioner Postma:	<u>Aye</u>
Commissioner Dvorak:	<u>Absent</u>
Commissioner Hurley:	<u>Aye</u>
Commissioner Levit:	<u>Aye</u>
Commissioner McGuire:	<u>Aye</u>
Commissioner Phelps:	<u>Aye</u>

**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 "(TWWD)".**
 - * **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/pipelines 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 (T/VWD); 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

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

WALLULIS & ASSOCIATES
ENVIRONMENTAL-MUNICIPAL-ENGINEERING
7725 SW VILLAGE GREENS CIRCLE
WILSONVILLE, OREGON 97070
PHONE: 503-694-1309
FAX: 503-694-1309 (Call First)
E-mail: swallulis@gmail.com
Phone: 1-541-429-1725 (Eastern Oregon)

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.

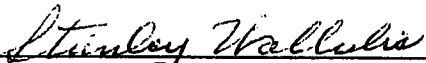
The review will show that I personally have some strong preferences for some terminology that others may not share. Other than that caveat, the notes are based on info taken from the draft plan and inferences that can rise from that data. I made more suggestions in the Executive Summary than the other 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, 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

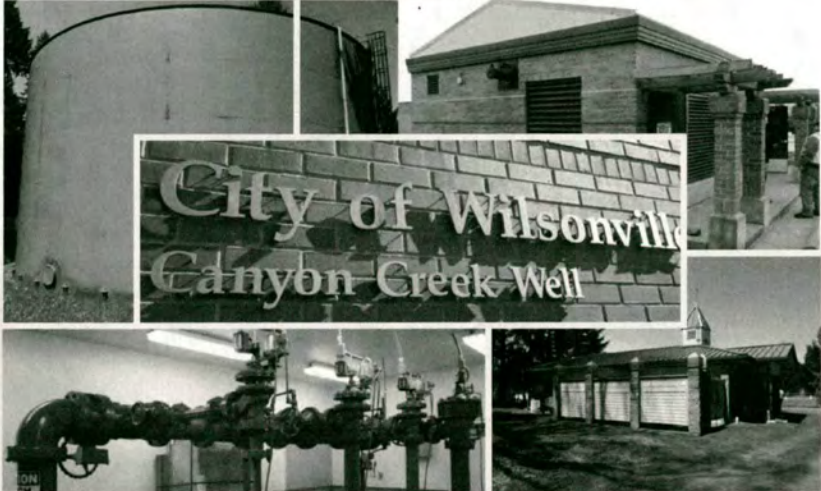
City of Corvallis Utility Engineer -- Alton R. Andrews, former Utility Engineer
City of Corvallis Utility Engineer -- Floyd W. Collins, former Utility Director

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.

WATER SYSTEM MASTER PLAN
PRESENTED TO: CITY OF WILSONVILLE PLANNING COMMISSION
PUBLIC HEARING
July 11, 2012



KELLER
associates

311010/9/12-251

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

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



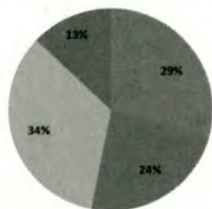
Current Water System Overview

- 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

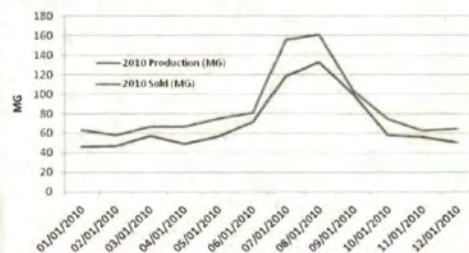
- Residential, commercial, industrial usage
- Irrigation estimated separately
- Water loss (unaccounted for water) exceeds 10%



Single - Family Residential
 Multi - Family Residential
 Commercial and Industrial
 Institutional, Public, Irrigation Only

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



2110103.12-201 7

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

2110103.12-201 8

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.



211003/12-051 9

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**



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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

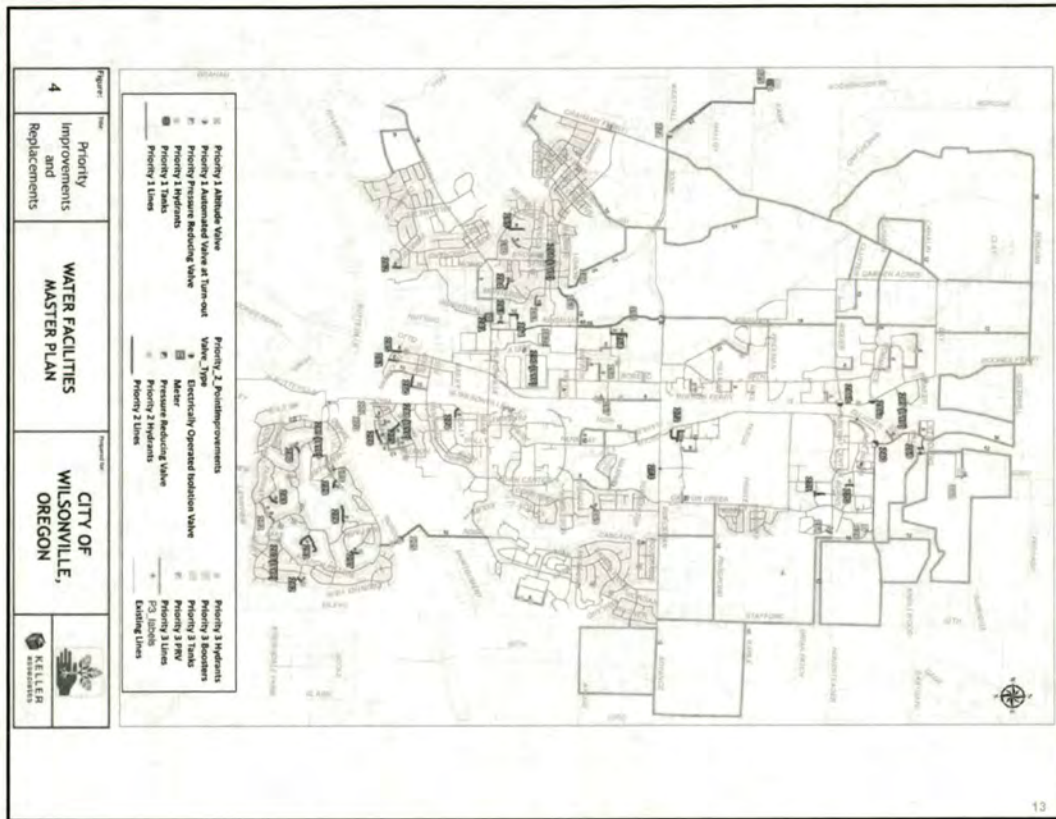


21101093-12-09-11

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.

21101093-12-09-12



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 Video Surveillance (various wells)	81,000 22,000
BOOSTER STATIONS AND TURNOUTS		
241	Meter Valve and Wilsonville Rd Turnout	\$118,000
WATER DISTRIBUTION PIPING		
260	10-inch Extension on 4 th 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 2 nd 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 3 rd 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.

**PLANNING COMMISSION 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
<input type="checkbox"/> Motion <input checked="" type="checkbox"/> Public Hearing Date: 7/11/12 <input type="checkbox"/> Ordinance 1 st Reading Date: <input type="checkbox"/> Ordinance 2 nd Reading Date: <input type="checkbox"/> Resolution <input type="checkbox"/> Information or Direction <input type="checkbox"/> Information Only <input type="checkbox"/> Council Direction <input type="checkbox"/> Consent Agenda	<input type="checkbox"/> Approval <input type="checkbox"/> Denial <input type="checkbox"/> None Forwarded <input checked="" type="checkbox"/> 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:		
<input checked="" type="checkbox"/> Council Goals/Priorities B. Ensure efficient, cost effective and sustainable development and infrastructure.	<input checked="" type="checkbox"/> Adopted Master Plan(s) Update to the 2002 Water System Master Plan	<input type="checkbox"/> 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 off-site facilities or upgrades 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 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.

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 COMPREHENSIVE 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

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**CITY OF WILSONVILLE
CITY COUNCIL
NOTICE OF PUBLIC HEARING**

PUBLIC NOTICE IS HEREBY GIVEN that the Wilsonville City Council will conduct a public hearing on, Monday, August 20, 2012 beginning at 7 p.m. at City Hall, 29799 SW Town Center Loop, Wilsonville, Oregon.

The purpose of this public hearing is to consider public testimony on:

An 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.

Copies may be obtained at a cost of 25 cents per page, at City Hall or by calling the City Recorder at 503-570-1506 and requesting a copy to be mailed to you.

Specific suggestions or questions concerning the proposed ordinance may be directed to Eric Mende, Deputy City Engineer, 503-570-1538. Public testimony, both oral and written will be accepted at the public hearing. Written statements are encouraged and may be submitted to Sandra C. King, MMC, City Recorder, 29799 SW Town Center Loop E, Wilsonville, OR 97070.

Assistive listening devices are available for persons with impaired hearing and can be scheduled for this meeting. The City will endeavor to provide qualified sign language interpreters without cost if requested at least 48 hours prior to the meeting. To obtain such services call the office of the City Recorder at 682-1011.

Published in the Wilsonville Spokesman August 7, and August 14, 2012.

King, Sandy

From: King, Sandy
Sent: Wednesday, August 08, 2012 8:45 AM
To: 'Dtessler@theram.com'; 'swallulis@gmail.com'; 'engel1@heavenet.com'
Subject: Public Hearing Notice for Water System Master Plan
Attachments: Water System Master Plan.pdf

The public hearing notice for the Water System Master Plan public hearing is attached. The City Council will hold their hearing on Monday, August 20, 2012 beginning at 7 p.m. in the Council Chambers at City Hall, 29799 SW Town Center Loop East.

If you have questions please do not hesitate to contact me.

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

PUBLIC RECORDS LAW DISCLOSURE: Messages to and from this e-mail address is a public record of the City of Wilsonville and may be subject to public disclosure. This e-mail is subject to the State Retention Schedule.

First	Last	Company	Address	City
Dean	Tessler	Ram International	29800 SW Boones Ferry Rd	Wilsonville
Stanley	Wallulis		7725 SW Village Greens Circle	Wilsonville
Cliff	Engel		8180 SW Fairway Dr.	Wilsonville

State	Zip	Email	Comments
OR	97070	<u>Dtessler@theram.com</u>	Signed in at 7/11 PH
OR	97070	<u>swallulis@gmail.com</u>	written & oral testimony submitted for 7/11 PH
OR	97070	<u>engel1@hevanet.com</u>	Testified at 7/11 PH

**CITY COUNCIL MEETING
STAFF REPORT**

Meeting Date: August 20, 2012	Subject: Coffee Lake Drive Sanitary Sewer Reimbursement District Staff Member: Steve Adams / Mike Kohlhoff Department: Engineering / Legal
Action Required	Advisory Board/Commission Recommendation
<input checked="" type="checkbox"/> Motion <input type="checkbox"/> Public Hearing Date: <input type="checkbox"/> Ordinance 1st Reading Date: <input type="checkbox"/> Ordinance 2nd Reading Date: <input checked="" type="checkbox"/> Resolution <input type="checkbox"/> Information or Direction <input type="checkbox"/> Information Only <input checked="" type="checkbox"/> Council Direction <input type="checkbox"/> Consent Agenda	<input type="checkbox"/> Approval <input type="checkbox"/> Denial <input type="checkbox"/> None Forwarded <input checked="" type="checkbox"/> Not Applicable Comments:
Staff Recommendation: Staff recommends approval of the resolution for this sanitary sewer reimbursement district to be established	
Recommended Language for Motion: I move to approve Resolution No. 2350	
PROJECT / ISSUE RELATES TO:	
<input type="checkbox"/> Council Goals/Priorities	<input type="checkbox"/> Adopted Master Plan(s)
<input checked="" type="checkbox"/> Not Applicable	

ISSUE BEFORE COUNCIL:

Establishment of a Sanitary Sewer Reimbursement District for the Coffee Lake Drive Sanitary Sewer line.

EXECUTIVE SUMMARY:

Construction of the sewer line was required to provide service to the Lowrie Primary School. With the slowdown in residential development, the City stepped up and undertook design and construction of this 1800 foot section of sewer main to assist the School district. See attached

Summary of Development Agreement and History for Villebois SAP-E and Reimbursement District.

In meetings with the West Linn – Wilsonville School District it was pointed out that their school bond did not include sufficient funds to construct the off-site sanitary line required to provide service to the school. The City and the School District entered into an Intergovernmental Agreement that specified this sewer line was the responsibility of the City to design and construct; in that agreement the School District has agreed to reimburse the City for about 24 percent of the costs of the sewer line.

The establishment of this Reimbursement District will allow the City to recoup the remaining 76 percent of the costs for installation of the sewer line, provided upstream development occurs within the next 10 years.

EXPECTED RESULTS:

Reimbursement of up to \$597,143 to the City’s Sanitary Sewer SDC Fund. Reimbursements will share the same restriction as other sewer SDCs.

TIMELINE:

Reimbursement Districts have a sunset period of 10 years, but can be renewed for good cause.

CURRENT YEAR BUDGET IMPACTS:

Sanitary Sewer line was constructed from August 2011 to January 2012, funding was identified in CIP #2077.

FINANCIAL REVIEW / COMMENTS:

Reviewed by: _____ Date: _____

LEGAL REVIEW / COMMENT:

Reviewed by: MEK Date: August 10, 2012

Notices have been sent to all affected property owners. The notice advises the assessment will only become due in the event their property is developed. The charges for the Reimbursement District do not become a lien. Application was made within three months of the final construction date of January 17, 2012.

COMMUNITY INVOLVEMENT PROCESS:

Owners of affected tax lots have been notified of the City’s desire to establish this sanitary sewer reimbursement district.

POTENTIAL IMPACTS or BENEFIT TO THE COMMUNITY

Cost of the construction has been distributed in a Pro Rata fashion to all properties that will be serviced by the sewer system.

Benefits – installation of 1800 feet of sewer main that will eventually provide service to

Villebois SAP East, and portions of Villebois SAP Central and SAP North, and area UPA 3 lying north of Tooze Road and allow residential development of these areas to proceed.

ALTERNATIVES:

The previously approved school site was located in Villebois SAP North and received prior Council approval to be relocated to the current Villebois SAP East location to save several million dollars in infrastructure costs.

CITY MANAGER COMMENT:

ATTACHMENTS

- A. Summary of Development and History of Reimbursement District

SUMMARY OF
DEVELOPMENT AGREEMENT HISTORY
FOR VILLEBOIS SAP-E AND REIMBURSEMENT DISTRICT

1. The Villebois Master Plan is a land use plan regulating the development of approximately 500 acres of a planned, mixed use community of internal commercial and a mix of an anticipated 2,600 residential uses, with trails, parks, and open spaces, supported by approximately \$140 million in infrastructure improvements. In approximately June 2004, for the purposes of developing home sites within the Villebois Master Plan area, Matrix Development Co. (Matrix) acquired certain land interests in approximately 150 acres of land east of 110th Street and entered into the 2004 Matrix Development Agreement. This acreage subsequently became known under the Villebois Village Zoning Code as Special Area Plan East (SAP-E). In this regard, Matrix purchased the Kirkendall property, succeeding to their interests in the Matrix Development Agreement; purchased some of the property owned by DeArmond/Fasano and optioned to purchase the balance; purchased some of the property owned by Bischof/Lund and optioned to purchase the balance; purchased a portion of the property owned by Arthur C. and Dee W. Piculell, and purchased development rights to mitigate wetlands on the balance not purchased.
2. In conjunction with the purposes of acquiring the aforementioned property and developing it, Matrix entered into certain loan agreements with Wachovia Bank (now Wells Fargo Bank), which included financing certain of the land purchases and development costs and providing Wachovia with security interests therein.
3. Matrix was authorized to enter into, and participate on behalf of the parties in, the adoption of the land use planning regulations for the properties to implement the Villebois Master Plan, including but not limited to the provisions of Coffee Lake Drive and the Coffee Lake Drive Sewer Line. It was anticipated that Matrix would be developing 655 single family dwelling units.
4. Subsequently, after developing a portion of the southern section of its development, which was known as Special Area Plan East, Preliminary Development Plan 1 (SAP-E, PDP-1), Matrix and its construction entity, Legend Homes, Inc. ("Legend"), filed for Chapter 11 bankruptcy protection in the United States Bankruptcy Court for the District of Oregon, Case No. 08-32798-tmb 11. On May 11, 2010, the Bankruptcy Court adopted the Matrix Second Amended Reorganization Plan ("Reorganization Plan"), effective June 1, 2010. As part of the proceedings, Matrix abandoned its optioned property to the above referenced owners and, through the Reorganization Plan, certain of its other property was transferred to Wells Fargo, as successor in interest of Wachovia Bank, and subsequently assigned to its property development company, Redus OR Lands, LLC ("Redus Property"). Under the Reorganization Plan, Matrix and Legend merged into a reorganized single entity, Legend, and Legend retained the land and development of SAP-E, PDP-1. Prior to the bankruptcy and the abandonment, Matrix had proposed a portion of the balance of the property to be developed as SAP-E, PDP-2, and a map depicting the proposed lot development is marked as **Exhibit 1**, attached hereto and

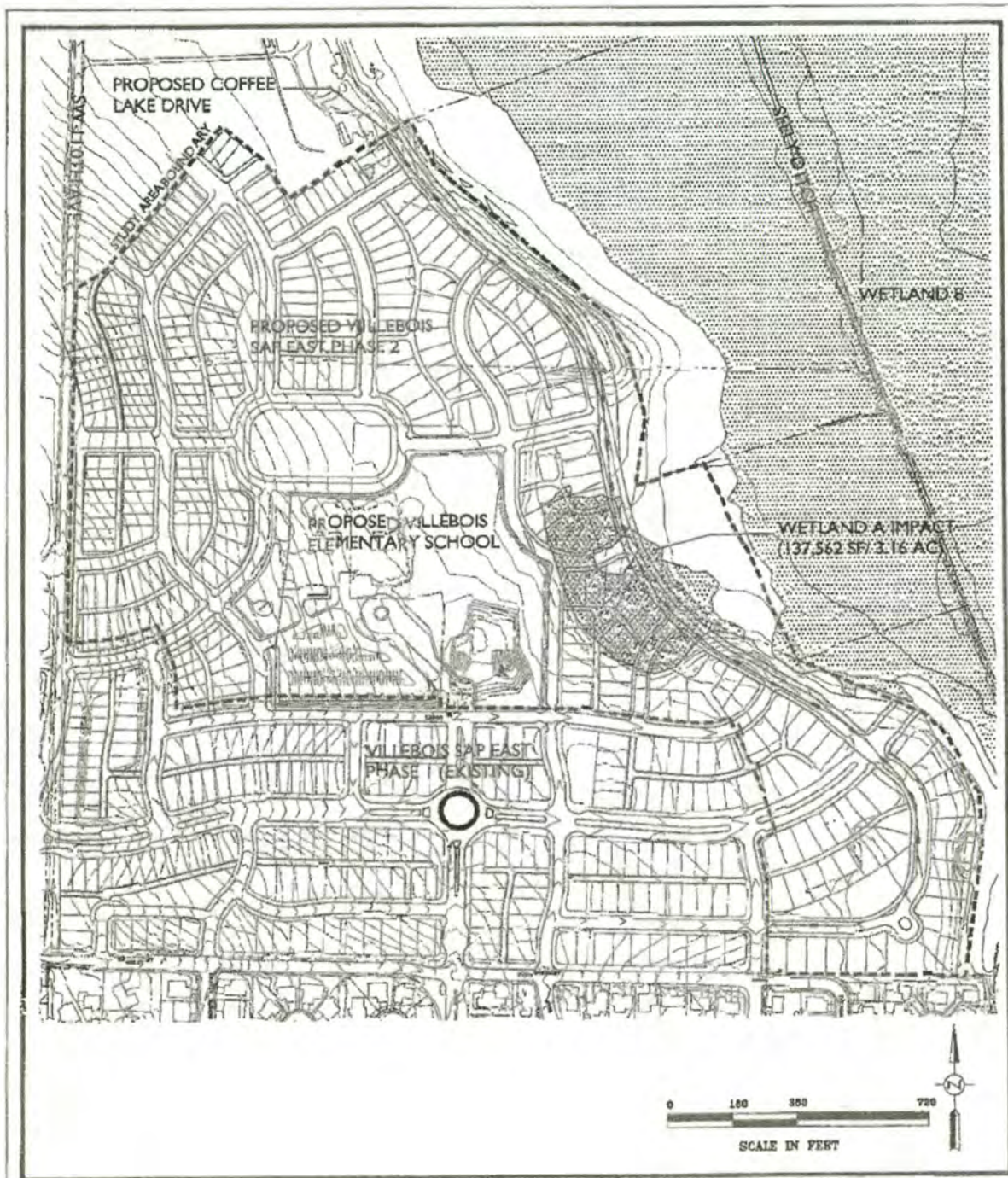
incorporated by reference herein. A map depicting the respective interests after abandonments is marked as **Exhibit 2**, attached hereto and incorporated by reference herein.

5. As part of the Reorganization Plan, Legend was relieved of infrastructure costs associated with SAP-E, PDP-1, including but not limited to Coffee Lake Drive and the Coffee Lake Drive Sewer Line. A separate amending agreement of the Matrix Development Agreement between the City, the URA, and Fasano/DeArmond, and a second separate amending agreement between the City, the URA, and Redus were reached in order for the City and the URA to acquire land from each of the ownerships for the construction of a grade school by the West Linn-Wilsonville School District ("District") within portions of then PDP-1 and PDP-2. See discussion below. Subsequently, Redus obtained City development approval, subject to conditions, of an 88-lot subdivision for land that Redus now owns within PDP-2. This subdivision is now referenced as SAP East, PDP-2 (hereinafter "PDP-2"). Fasano/DeArmond has not yet applied for development approval.
6. The City, the URA, and a third-party developer, Polygon Northwest Company, L.L.C., who anticipates purchasing the Bischof/Lund Property pursuant to an agreement with Bischof/Lund, are in the process of amending the Matrix Development Agreement to provide the framework for development of the Bischof/Lund Property. This land contains 192 lots, as originally proposed by Matrix for the Bischof/Lund Property. Polygon proposes 184 lots rather than 192 due to wetland conditions. This 184 lot subdivision will now be known as SAP East, PDP-3 (hereinafter "PDP-3").
7. The Villebois Master Plan required that a 10-acre site be designated for a grade school and sports fields. The designated land was initially located west of 110th and adjacent to Tooze Road. The School District, in anticipation of building at the Tooze Road site, had passed a bond issue to build the school. Due to the recessionary economic conditions, the housing development needed to support the extension of infrastructure to the Tooze Road site was delayed and therefore funding for the improvements needed for Tooze Road improvements was not available. There was an immediate need for the school to serve over-crowded conditions and also to avoid bond arbitrage issues. Given the aforementioned lack of funds for extending infrastructure to the Tooze Road site, the Villebois Master Plan was amended to provide for a substituted school site with a lower infrastructure cost, at an estimated savings of \$4 million. The URA and the City purchased property from Legend, Redus, and DeArmond/Fasano and combined the purchased parcels into one site. This approximate 10-acre site was made part of an exchange agreement with the School District for an approximate 10-acre site east of the City for recreational purposes. A reduced copy of page 1 of Partition Plat No. 2010, depicting the school site (Parcel 2) and a plan layout of the school site, is marked as **Exhibit 3**, attached hereto and incorporated by reference herein.
8. The District entered into an Infrastructure Development Agreement with the City and the URA. As part of the negotiation with Fasano/DeArmond, Redus, and also Bischof/Lund, the details of the Infrastructure Agreement were shared with all parties. Under the Infrastructure Development Agreement, the District provides certain infrastructure to

serve the school, such as local roads, storm drainage, and sewer lateral lines. Some of this infrastructure was oversized and provides extra capacity, which will benefit the neighboring properties. This entitles the District to reimbursement from the benefitting properties at time of development of the benefitting properties through a Road and Utility Reimbursement District. There was also a need for the school to be tied into the proposed Coffee Lake Drive Sewer Trunk Line, which was on land that Redus acquired in the reorganization. The construction of the trunk line was not funded and would normally be constructed by the developer of the land in conjunction with development under an SDC methodology, with credit for oversizing by the responsible developer. Although Redus had sought and received development approval for the 88 lot PDP-2, Redus was not a developer and did not intend any immediate sale for development until an issue of filling a wetland on its property was permitted. Given the exigent school circumstances, it was determined that there was a need to develop an alternative but equitable funding mechanism.

9. Except for PDP-1, the parties recognized that in order for the remaining properties to develop there was a beneficial need for a segment of the 15-inch sewer trunk line to be constructed within the right of way of the planned Coffee Lake Drive. Coffee Lake Drive traverses the eastern edge of SAP-E, commencing from Barber Street to the south to the planned Villebois Drive to the north. A portion of the sewer trunk line is located within the Coffee Lake Drive right of way, but only the segment from a little south of Barber to the Bischof/Lund southern property line was needed to be constructed for the school to open. This segment of the proposed sewer line was located within the Redus Property, and Redus agreed to provide the necessary easement to the City. As noted above, a different funding approach was needed than had been provided in the Matrix Development Agreement. Thus, the Infrastructure Agreement with the School District, Addendum No. 3 to the Matrix Development Agreement involving Redus and Legend, and the Purchase Agreement with Fasano/DeArmond provided for formation of a Reimbursement District to reimburse a portion of the sewer line cost, with the School District contributing 24% to the costs and to advance the remaining costs. It was subsequently determined that the City would advance the costs and seek the reimbursement. The sewer line was constructed and oversized to benefit certain properties yet to be developed, which would hook into the sewer line upon development. The Benefitted Properties are subject to a pro rata reimbursement for this segment upon development. Under the reimbursement provisions of its code, the City will be seeking reimbursement for the District from the Benefitted Property owners through a Coffee Lake Drive Sewer Reimbursement District.
10. During the process of constructing the sewer line, it was determined that the corresponding segment of Coffee Lake Drive could be constructed at a substantial savings. Redus had sought development approval for PDP-2 to be able to better market the property for sale to a developer. The Development Approval was conditioned, in part, on building this segment of Coffee Lake Drive. To achieve the cost savings, this segment of Coffee Lake Drive was constructed with the sewer line segment. The sewer line, if constructed alone, would need a 15' access strip with a base of approximately 21 feet. This was accounted for in the cost of construction for the sewer line and was not

included in the portion of the Coffee Lake Drive base that is attributed to Redus under its condition of approval. The City intends to seek reimbursement through a separate mechanism, apart from the Coffee Lake Drive Sewer Reimbursement or the Road and Utility District, for the Coffee Lake Drive Road construction attributable to Redus and which the approved conditions required the developer to build.



3/19/10
4573



Proposed site plan and wetland impacts at Villebois SAP East Phase 2 planning area in Wilsonville, Oregon. Provided by City of Wilsonville, 2010.

Pacific Habitat Services, Inc.

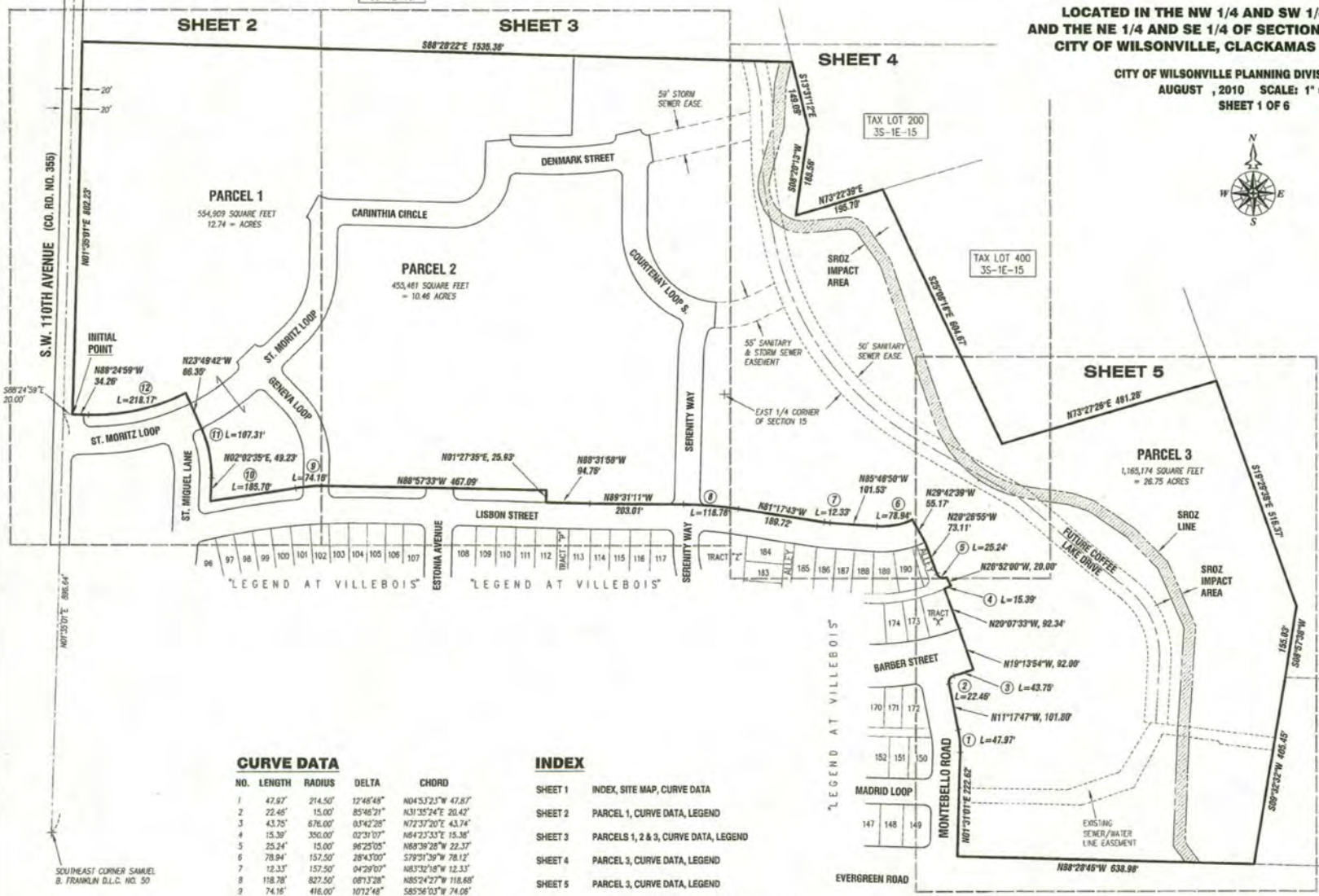
FIGURE
5

PARTITION PLAT NO. 2010 -

LOCATED IN THE NW 1/4 AND SW 1/4 OF SECTION 14,
AND THE NE 1/4 AND SE 1/4 OF SECTION 15, T.3S., R.1W., W.M.
CITY OF WILSONVILLE, CLACKAMAS COUNTY, OREGON

CITY OF WILSONVILLE PLANNING DIVISION FILE NO.
AUGUST, 2010 SCALE: 1" = 150'

SHEET 1 OF 6



CURVE DATA

NO.	LENGTH	RADIUS	DELTA	CHORD
1	47.97	214.50'	12°48'48"	N04°33'23"W 47.87'
2	22.46'	15.00'	85°46'29"	N31°35'24"E 26.42'
3	43.75'	676.00'	0°14'22.88"	N72°37'40"E 43.74'
4	15.39'	350.00'	02°31'07"	N64°23'33"E 15.36'
5	25.24'	15.00'	96°25'05"	N68°39'28"W 22.37'
6	78.94'	157.50'	28°43'00"	S79°21'39"W 78.12'
7	12.33'	157.50'	04°29'07"	N83°32'18"W 12.33'
8	118.78'	827.50'	08°13'28"	N85°24'27"W 118.68'
9	74.16'	416.00'	10°12'48"	S85°56'03"W 74.08'
10	185.70'	10289.93'	01°02'00"	S81°26'40"W 185.70'
11	107.31'	237.85'	25°52'18"	N10°53'34"W 108.40'
12	218.17'	435.50'	28°42'12"	S77°13'56"W 215.90'

INDEX

- SHEET 1 INDEX, SITE MAP, CURVE DATA
- SHEET 2 PARCEL 1, CURVE DATA, LEGEND
- SHEET 3 PARCELS 1, 2 & 3, CURVE DATA, LEGEND
- SHEET 4 PARCEL 3, CURVE DATA, LEGEND
- SHEET 5 PARCEL 3, CURVE DATA, LEGEND
- SHEET 6 APPROVALS, SURVEYOR'S CERTIFICATE, NARRATIVE DECLARATION, ACKNOWLEDGMENTS, RESTRICTIONS

REGISTERED PROFESSIONAL LAND SURVEYOR
Michael A. Rademacher
OREGON
JULY 16, 1987
MICHAEL A. RADEMACHER
2303

ENGINEER/SURVEYOR
COMPASS ENGINEERING
4105 INTERNATIONAL WAY, SUITE 501
MILWAUKIE, OREGON 97222
PHONE: 503-653-9093
6788 Part.dwg (MMM)
JOB NO. 6788 (PARTITION)

DATE OF SIGNATURE: 9-9-10
EXPIRES: 12/31/2010



phase	SD
date	1/27/2010
sheet	0000
revision	At Site

9

New Villebois Primary School
 West Linn Wilsonville School District
 222
 Tualatin, Oregon 97142
 T: 503-672-7000
 F: 503-672-7001

DULL OLSON WERKES
 architects inc.

 807 SW STARK STREET PORTLAND, OREGON 97206
 T: 503 227 8888 F: 503 271 9187 www.dow.com

RESOLUTION NO. 2350

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

WHEREAS, pursuant to Resolution No. 2247, the City of Wilsonville (City) and the West Linn Wilsonville School District (School District) entered into an Intergovernmental Cooperative Agreement for Villebois School Site Infrastructure, dated September 22, 2010 (the IGA); and

WHEREAS, the IGA provided, among other things, the following as to the Coffee Lake Drive Sewer Line:

"4. Sewer Line Improvements.

4.1. Coffee Lake Sewer Line. In order to properly serve this site and the greater area within which the site sits, a portion of the Coffee Lake Sewer Line, a 15" trunk line, must be constructed. The City and/or developers will design and construct this sewer line. The District is only responsible for its pro rata share of the costs of construction of the Coffee Lake Sewer Line, calculated at 24%; that is, from a point south of Barber Street to the southerly property line of the Bischoff/Lund property. The estimated cost of the District's portion of the Coffee Lake Sewer Line is \$134,880. The City has determined that there is other funding available for any extra capacity costs associated with these lines.

* * *

4.3. Sewer Line Locations. The general location of the Coffee Lake Sewer Line (*see* 4.1) ... are set forth in Exhibit C, attached hereto and incorporated by reference herein."; and

WHEREAS, the IGA further provides:

6. Actual Costs and Reimbursements for Street and Sewerage Improvements.

6.1. True-Up to Actual Costs. The parties recognize that the aforementioned costs are estimates only. Exhibit D, attached hereto and incorporated herein, provides in chart form a comprehensive guide to the engineering assumptions, estimates of infrastructure costs, reimbursement projections, and fees. The actual costs incurred and known at the time of

the completion of construction contracts shall be substituted for the estimates for the purposes of payment and reimbursement as required herein. The costs shall be subject to true-up to actual payments, inclusive of any additions or subtractions made to the full payment for each construction contract."; and

WHEREAS, the construction contract for and improvement of the Coffee Lake Drive Sewer Line was deemed complete, was duly constructed and bonded under the supervision and direction of the City Engineer, and was accepted by the City as of January 17, 2012, and actual costs have been true-up and paid; and

WHEREAS, Wilsonville Code 3.116(6) provides the City may apply for reimbursement of its costs for improving a sewer facility to serve other property as follows:

(6) The applicant may include the City and the application may be made following improvement, but no later than three months after completion and acceptance by the City of the improvement. If the application is filed after construction, the application shall include the actual cost of construction as evidenced by a contract, receipts, bids, or other similar documents. In the event the City shall construct or shall pay for the construction of ... sewer lines ..., and there is no agreement to the contrary, the City shall require the owners of said property, prior to providing such ... sewer service ... to such property, to refund to the City a pro rata portion of the costs of the extension. The provisions of this section shall apply to the owners of said property in the same manner as subsection (1) is applied to the other property owners described therein."; and

WHEREAS, the City has duly made its application for reimbursement on March 16, 2012, in accordance with Wilsonville Code 3.116(6); and

WHEREAS, the following are incorporated by reference in this Resolution: **Exhibit A**, a map outlining the improvement area and dividing it into tracts; **Exhibit B**, a map depicting the location of the Coffee Lake Drive Sewer Basin, Coffee Lake Drive Sewer Line, and the constructed segment of the Coffee Lake Drive Sewer Line for which reimbursement is sought; **Exhibit C**, a legal description of the five improvement area tracts; **Exhibit D**, a listing of the owners of property within each tract that will be served by the sewer trunk line, a description of the amount of affected acreage per tax lot, the tax lot description number (note: the above refines the tract description so as to set forth only that acreage portion of a tax lot that is within the Coffee Lake Sewer Basin), the amount of charge owed, and the pro rata share of the cost of the improvement for each property based upon the engineer's allocation methodology, footnoted

thereon; and **Exhibit E**, a listing of the final costs for the sewer improvement, totaling \$597,143.00; and

WHEREAS, the City Engineer had previously inspected the sewer line improvements, the properties to be served, reviewed the plans for the improvements, reported the improvements were feasible, desirable, and necessary for the orderly development and expansion of the City's sewage collection system and storm drainage system, were subject to public works permits issuance; and

WHEREAS, the Coffee Lake Drive Sewer Line is completed, and final costs have been confirmed; and

WHEREAS, the City Engineer, having duly considered the development potential of adjacent properties, the value of unused capacity of the improvements to serve other properties, rate making principals employed to finance public improvements, and such other information as presented, recommended that the City adopt a refund methodology to fairly apportion the costs of the extension of the Coffee Lake improvements to all be benefited properties, as set forth in **Exhibit D**; and

WHEREAS, the City Council duly noticed and held a public hearing on this matter on August 20, 2012, whereat the City Council received a staff report, exhibits, and public testimony.

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

1. The above recitals are incorporated by reference herein and the staff report and recommendations of the City Engineer are hereby adopted.
2. The Reimbursement District described in **Exhibits A, B and C** and the total cost and allocation of the cost of the Coffee Lake Sewer Line as set forth in **Exhibits D and E**, are adopted.
3. Except as provided in paragraph 4 below, at the time of issuance of a public works permit to provide sewer service to the subject property (Reimbursement District Property), each of the property owners within the Reimbursement District, as set forth in **Exhibit D**, shall pay to the City, for the purpose of reimbursement to the City or its successor or assigns, a reimbursement fee (Reimbursement Fee) based on the pro rata portion of the costs of extending the sewer line improvements to serve the Reimbursement District Properties, pursuant to the methodology described in **Exhibit D** and allowing only for those costs

specifically set forth as allowed costs pursuant to Wilsonville Code 3.116 et seq., which total \$597,143.

4. The date of acceptance of the sewer line improvements by the City Engineer (“Acceptance Date”) is January 17, 2012. The Reimbursement District will remain in effect for a period of ten (10) years. Provided, however, the Reimbursement District may remain in effect for a longer period of time in the event the City Council, for good cause shown, authorizes an extension of the ten (10) year period. The Reimbursement District will bind and apply to all Reimbursement District Properties until the City has been reimbursed or the Reimbursement District terminates, whichever occurs sooner.
5. The Reimbursement Fee shall be adjusted as follows: On July 1, 2013, and on each succeeding July 1 thereafter, as long as this Reimbursement District remains in effect; the unpaid balance shall accrue interest at the rate equal to the average of the prior fiscal year’s Local Government Investment Pool (LGIP) interest, together with an accrued administrative fee of 2% of the unpaid balance.
6. The City Recorder shall cause notice of the formation and nature of the Reimbursement District to be filed in the office of the Clackamas County recorder for notice purposes. Such recording shall not create a lien and failure to make such recording shall not affect the legality of this Resolution or the obligation to pay the Reimbursement Fee.
7. Any legal action to contest the formation of this Reimbursement District or the Reimbursement Fee, including the amount of the charge designated for each parcel, must be filed within sixty (60) days following the adoption of this Resolution establishing the Reimbursement District, as shown below. Any such action shall be by Writ of Review as provided in ORS 34.010 or ORS 34.100.
8. This Resolution is effective upon adoption.

ADOPTED by the Wilsonville City Council at a regular meeting thereof this ____ day of _____, 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

Council President Núñez

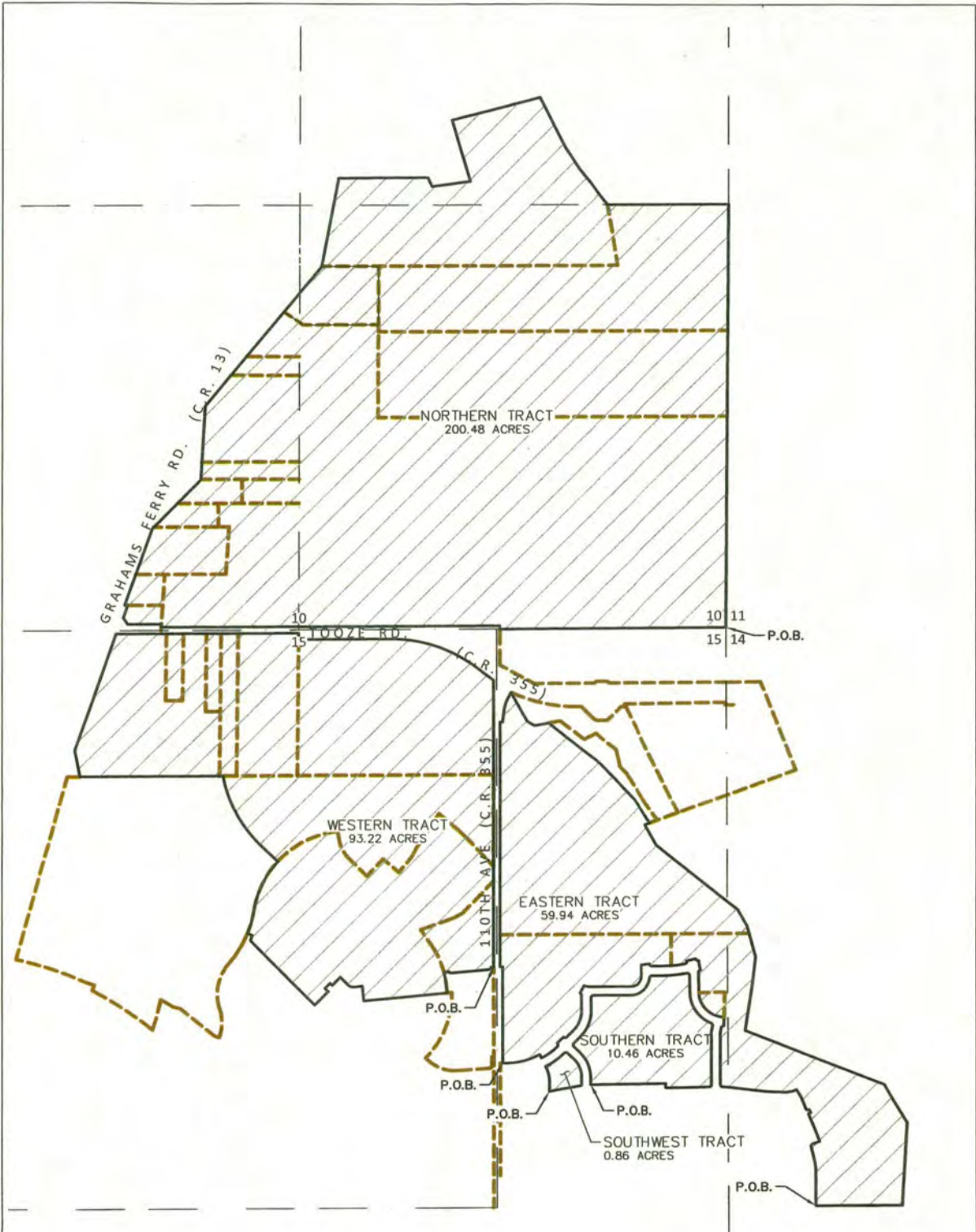
Councilor Hurst

Councilor Goddard

Councilor Starr

Attachments:

- Exhibit A** – Map titled Reimbursement District Exhibit, dated 6/7/12
- Exhibit B** – Map showing location of Coffee Lake Drive Sewer Basin, Sewer Line, and line segment
- Exhibit C** – Legal Description of Tracts of the Reimbursement District
- Exhibit D** – Methodology and Owners' Pro Rate Cost Share for Property by Tax Lot
- Exhibit E** - Coffee Lake Drive Sewer Improvements Construction Cost Breakdown



Drawing Name: A:\1197-011\2\Survey\CAD\DWG\1197-011.dwg Aug 02, 2012 - 2:02pm - .gpr



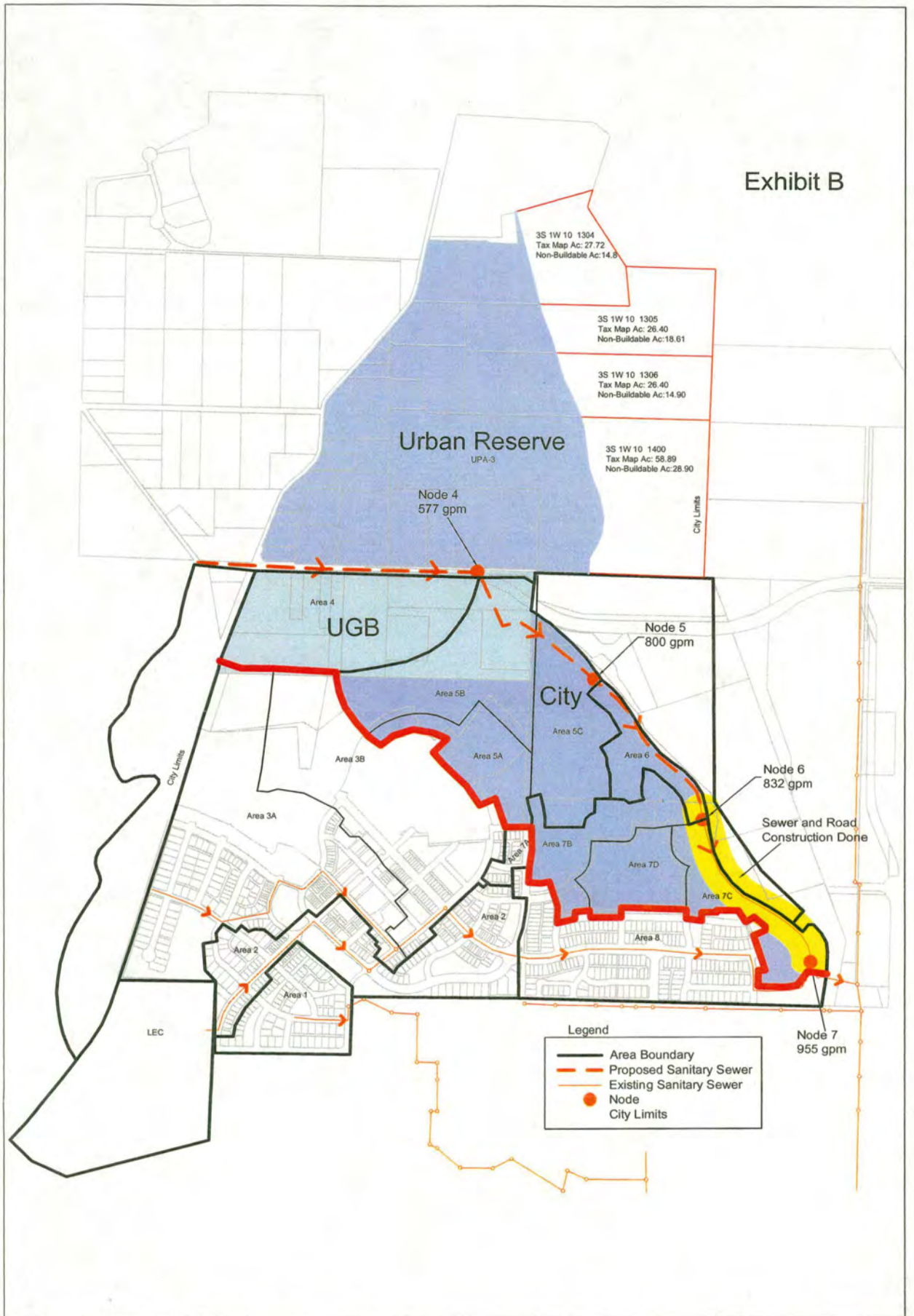
SCALE: 1"=600'

REIMBURSEMENT EXHIBIT
 SECTIONS 10, 14 & 15
 T. 3 S., R. 1 W., W.M.,
 CLACKAMAS COUNTY, OR.

DATE 06/07/12
 DRAWN BY MDS
 CHECKED BY GRA
 REVISIONS
 JOB NO. 1197-011

WESTLAKE
 CONSULTANTS INC.
 ENGINEERING ♦ SURVEYING ♦ PLANNING
 PACIFIC CORPORATE CENTER
 15115 S.W. SEQUOIA PARKWAY, SUITE 150 (503) 684-0652
 TIGARD, OREGON 97224 FAX (503) 624-0157

Exhibit B



City of Wilsonville
 Engineering Division
 29799 SW Town Center Loop East
 Wilsonville OR 97070
 503-682-4960

Villebois
 Sanitary Sewer- North Reimbursement District
 Clackamas County, OR

Date: August 1, 2012
 Scale: N.T.S.
 Drawn By: Susan Rottenberger
 Date Plotted: August 1, 2012
 Drawing Name: SewerPayback_Mobile04_08C.dwg

City of
Wilsonville
 Engineering Division

Assessment Area
City of Wilsonville
Project No. 1197-011
June 7, 2012

PROPERTY DESCRIPTION

Five tracts of land located in Section 10, Section 14 and Section 15, Township 3 South, Range 1 West, Willamette Meridian, Clackamas County, Oregon; being described as follows:

Eastern Tract-

Beginning at the most southerly southwest corner of Parcel 3, Partition Plat No. 2011-005, Clackamas County Records;

thence along the westerly lines (the following 31 courses) of said Parcel 3, N 00°06'25" W, a distance of 222.62 feet to the beginning of a curve, concave westerly and having a radius of 214.50 feet;

thence northerly along said curve through an angle of 12°48'48", an arc distance of 47.97 feet;

thence N 12°55'13" W, a distance of 101.80 feet to the beginning of a curve, concave southeasterly and having a radius of 15.00 feet;

thence northeasterly along said curve through an angle of 85°47'29", an arc distance of 22.46 feet, to the beginning of a reverse curve, concave northerly and having a radius of 676.00 feet;

thence easterly along said curve through an angle of 03°42'29", an arc distance of 43.75 feet;

thence N 20°51'20" W, a distance of 92.00 feet;

thence N 21°44'59" W, a distance of 92.34 feet to the beginning of a non-tangent curve, concave northerly and having a radius of 350.00 feet to which a radial line bears S 25°58'20" E;

thence easterly along said curve through an angle of 02°31'05", an arc distance of 15.39 feet;

thence N 28°29'26" W, a distance of 20.00 feet to the beginning of a non-tangent curve, concave northerly and having a radius of 15.00 feet to which a radial line bears S 28°29'26" E;

thence westerly along said curve through an angle of $96^{\circ}25'05''$, an arc distance of 25.24 feet;

thence $N 22^{\circ}04'21'' W$, a distance of 73.11 feet;

thence $N 31^{\circ}20'05'' W$, a distance of 55.17 feet to the beginning of a non-tangent curve, concave northerly and having a radius of 157.50 feet to which a radial line bears $S 26^{\circ}07'16'' E$;

thence westerly along said curve through an angle of $28^{\circ}43'00''$, an arc distance of 78.94 feet;

thence $N 87^{\circ}24'16'' W$, a distance of 101.53 feet to the beginning of a curve, concave northerly and having a radius of 157.50 feet;

thence westerly along said curve through an angle of $04^{\circ}29'12''$, an arc distance of 12.33 feet;

thence $N 82^{\circ}55'09'' W$, a distance of 189.72 feet to the beginning of a curve, concave southerly and having a radius of 827.50 feet;

thence westerly along said curve through an angle of $04^{\circ}49'20''$, an arc distance of 69.65 feet to the beginning of a reverse curve, concave northeasterly and having a radius of 15.00 feet;

thence westerly along said curve through an angle of $87^{\circ}34'37''$, an arc distance of 22.93 feet;

thence $N 00^{\circ}09'51'' W$, a distance of 307.59 feet to the beginning of a curve, concave easterly and having a radius of 157.50 feet;

thence northerly along said curve through an angle of $14^{\circ}15'36''$, an arc distance of 39.20 feet;

thence $N 14^{\circ}05'45'' E$, a distance of 10.13 feet to the beginning of a curve, concave southeasterly and having a radius of 15.00 feet;

thence northeasterly along said curve through an angle of $77^{\circ}34'19''$, an arc distance of 20.31 feet;

thence N 01°41'09" E, a distance of 55.00 feet to the beginning of a non-tangent curve, concave northeasterly and having a radius of 157.50 feet to which a radial line bears S 1°41'09" W;

thence northwesterly along said curve through an angle of 87°15'17", an arc distance of 239.85 feet;

thence N 01°03'34" W, a distance of 127.19 feet to the beginning of a curve, concave southeasterly and having a radius of 15.00 feet;

thence northeasterly along said curve through an angle of 76°35'46", an arc distance of 20.05 feet;

thence N 09°51'37" W, a distance of 59.20 feet to the beginning of a non-tangent curve, concave northeasterly and having a radius of 15.00 feet to which a radial line bears S 14°28'39" E;

thence northwesterly along said curve through an angle of 92°46'12", an arc distance of 24.29 feet;

thence S 75°26'43" W, a distance of 55.06 feet to the beginning of a non-tangent curve, concave northwesterly and having a radius of 15.00 feet to which a radial line bears N 78°18'42" E;

thence southwesterly along said curve through an angle of 90°47'40", an arc distance of 23.77 feet, to the beginning of a compound curve, concave northerly and having a radius of 720.50 feet;

thence westerly along said curve through an angle of 06°42'11", an arc distance of 84.29 feet to the east line of Parcel 1 of said Partition Plat No. 2011-005;

thence continuing westerly along the south lines of said Parcel 1 (the following 27 courses), along said curve through an angle of 04°09'27", an arc distance of 55.28 feet;

thence S 89°57'57" W, a distance of 64.95 feet to the beginning of a curve, concave northeasterly and having a radius of 15.00 feet;

thence northwesterly along said curve through an angle of 84°27'05", an arc distance of 22.10 feet;

thence S 84°23'55" W, a distance of 54.00 feet to the beginning of a non-tangent curve, concave westerly and having a radius of 65.00 feet to which a radial line bears N 84°23'52" E;

thence southerly along said curve through an angle of 05°26'23", an arc distance of 6.17 feet;

thence S 00°09'51" E, a distance of 61.00 feet to the beginning of a curve, concave northwesterly and having a radius of 67.00 feet;

thence southwesterly along said curve through an angle of 90°08'02", an arc distance of 105.40 feet;

thence S 89°57'57" W, a distance of 261.07 feet to the beginning of a curve, concave northerly and having a radius of 15.00 feet;

thence westerly along said curve through an angle of 26°59'28", an arc distance of 30.61 feet;

thence S 26°57'07" W, a distance of 54.00 feet to the beginning of a non-tangent curve, concave southwesterly and having a radius of 15.00 feet to which a radial line bears N 26°56'29" E;

thence southerly along said curve through an angle of 62°54'17", an arc distance of 16.46 feet;

thence S 00°09'51" E, a distance of 97.81 feet to the beginning of a curve, concave northwesterly and having a radius of 170.50 feet;

thence southerly along said curve through an angle of 44°14'47", an arc distance of 131.67 feet;

thence S 44°04'53" W, a distance of 61.79 feet to the beginning of a curve, concave northerly and having a radius of 15.00 feet;

thence westerly along said curve through an angle of 89°58'58", an arc distance of 23.55 feet;

thence S 44°30'04" W, a distance of 55.00 feet to the beginning of a non-tangent curve, concave westerly and having a radius of 15.00 feet to which a radial line bears N 44°03'02" E;

thence southerly along said curve through an angle of $92^{\circ}22'53''$, an arc distance of 24.19 feet, to the beginning of a compound curve, concave northerly and having a radius of 460.50 feet to which a radial line bears $S 43^{\circ}32'33'' E$;

thence westerly along said curve through an angle of $14^{\circ}58'40''$, an arc distance of 120.38 feet to the east line of Tract "EE" of said Partition Plat No. 2011-005;

thence $N 25^{\circ}27'08'' W$, a distance of 25.04 feet to the beginning of a non-tangent curve, concave northerly and having a radius of 435.50 feet to which a radial line bears $S 28^{\circ}44'37'' E$;

thence along the north line of said Tract "EE", westerly along said curve through an angle of $28^{\circ}42'12''$, an arc distance of 218.17 feet;

thence $S 89^{\circ}57'35'' W$, a distance of 18.76 feet to the east right-of-way line of S.W. 110th Ave., Co. Rd. No. 355 (35.50 feet east of centerline);

thence along said east right-of-way line, $N 00^{\circ}02'25'' W$, a distance of 603.87 feet to an angle point;

thence $S 89^{\circ}57'35'' W$, a distance of 15.50 feet to an angle point (20.00 feet east of centerline);

thence $N 00^{\circ}02'25'' W$, a distance of 1527.81 feet to an angle point;

thence $N 89^{\circ}58'35'' E$, a distance of 15.46 feet;

thence $N 06^{\circ}40'18'' E$, a distance of 57.71 feet to the beginning of a non-tangent curve, concave easterly and having a radius of 266.50 feet to which a radial line bears $N 84^{\circ}27'34'' W$;

thence northerly along said curve through an angle of $21^{\circ}47'15''$, an arc distance of 101.34 feet;

thence $N 27^{\circ}20'00'' E$, a distance of 29.67 feet to the south right-of-way line of Tooze Road (width varies);

thence $N 71^{\circ}19'26'' E$, a distance of 4.37 feet to the west line of that property conveyed by Doc. No. 2006-073991, Clackamas County Deed Records;

thence along said west line, $S 29^{\circ}27'33'' E$, a distance of 205.04 feet;

thence $S 61^{\circ}02'18'' E$, a distance of 51.08 feet;

thence N 79°53'13" E, a distance of 88.13 feet to the east line of said tract;
thence S 51°05'50" E, a distance of 419.40 feet;
thence S 43°05'50" E, a distance of 300.00 feet;
thence S 34°05'50" E, a distance of 177.40 feet;
thence S 69°43'27" W, a distance of 32.77 feet;
thence S 29°11'03" E, a distance of 144.54 feet;
thence S 50°46'07" E, a distance of 640.12 feet;
thence S 29°00'27" E, a distance of 116.96 feet;
thence S 14°57'14" E, a distance of 48.39 feet to the northeast corner of said Parcel 3;
thence along the East line of said Parcel 3, S 15°08'38" E, a distance of 149.09 feet;
thence S 06°42'47" W, a distance of 188.56 feet to an angle point therein;
thence leaving said Parcel 3, on and along the westerly lines of "Tract II" & "Tract III" as described in Deed Doc. 2010-043104, Clackamas County Records (the following five courses) S 08°29'08" W, a distance of 279.19 feet;
thence S 67°55'34" E, a distance of 538.83 feet;
thence S 67°55'49" E, a distance of 368.92 feet;
thence S 31°05'10" E, a distance of 271.90 feet;
thence S 03°07'16" W, a distance of 516.48 feet to the south line of said Parcel 3;
thence along said South line, S 89°53'49" W, a distance of 525.46 feet to the point of beginning.

Containing 59.94 acres, more or less.

Southern Tract-

Being all of Parcel 2 of said Partition Plat No. 2011-005; being more particularly described as follows:

Beginning at the southwest corner of said Parcel 2, also being a point on the east right-of-way line of Geneva Loop;

thence along said east right-of-way line, N 00°09'51" W, a distance of 49.24 feet to the beginning of a curve, concave southwesterly and having a radius of 210.00 feet;

thence northwesterly along said curve through an angle of 45°47'35", an arc distance of 167.84 feet;

thence N 45°57'23" W, a distance of 54.77 feet to the beginning of a curve, concave easterly and having a radius of 15.00 feet;

thence northerly along said curve through an angle of 90°02'16", an arc distance of 23.57 feet to the east right-of-way line of St. Moritz Loop;

thence along said east right-of-way line, N 44°04'53" E, a distance of 61.73 feet to the beginning of a curve, concave southeasterly and having a radius of 229.50 feet ;

thence northeasterly along said curve through an angle of 44°14'47", an arc distance of 177.23 feet;

thence N 00°09'51" W, a distance of 83.02 feet to the beginning of a curve, concave southeasterly and having a radius of 15.00 feet;

thence northeasterly along said curve through an angle of 90°07'48", an arc distance of 23.60 feet to the south right-of-way line of Carinthia Circle;

thence along said south right-of-way line, N 89°57'57" E, a distance of 232.84 feet to the beginning of a curve, concave northwesterly and having a radius of 121.00 feet;

thence northeasterly along said curve through an angle of 83°40'04", an arc distance of 176.69 feet, to the beginning of a reverse curve, concave southeasterly and having a radius of 15.00 feet;

thence northeasterly along said curve through an angle of 83°40'12", an arc distance of 21.90 feet to the south right-of-way line of Denmark Street;

thence along said south right-of-way line, N 89°57'57" E, a distance of 65.01 feet to the beginning of a curve, concave northerly and having a radius of 779.50 feet;

thence easterly along said curve through an angle of $10^{\circ}46'33''$, an arc distance of 146.60 feet, to the beginning of a reverse curve, concave southwesterly and having a radius of 15.00 feet;

thence southeasterly along said curve through an angle of $99^{\circ}45'01''$, an arc distance of 26.11 feet to the west right-of-way line of Courtenay Loop S;

thence along said west right-of-way line, $S 01^{\circ}03'34'' E$, a distance of 108.59 feet to the beginning of a curve, concave northeasterly and having a radius of 212.50 feet;

thence southeasterly along said curve through an angle of $65^{\circ}42'44''$, an arc distance of 243.71 feet, to the beginning of a reverse curve, concave westerly and having a radius of 15.00 feet;

thence southerly along said curve through an angle of $80^{\circ}52'03''$, an arc distance of 21.17 feet to the west right-of-way line of Serenity Way,

thence along said west right-of-way line, $S 14^{\circ}05'45'' W$, a distance of 7.70 feet to the beginning of a curve, concave easterly and having a radius of 212.50 feet;

thence southerly along said curve through an angle of $14^{\circ}15'36''$, an arc distance of 52.89 feet;

thence $S 00^{\circ}09'51'' E$, a distance of 307.56 feet; to the beginning of a curve, concave northwesterly and having a radius of 15.00 feet

thence southwesterly along said curve through an angle of $89^{\circ}01'14''$, an arc distance of 23.31 feet to the north right-of-way line of Lisbon Street;

thence $S 88^{\circ}51'23'' W$, a distance of 168.02 feet;

thence $S 89^{\circ}50'36'' W$, a distance of 94.76 feet to Tract "BB" of said Partition Plat No. 2011-005;

thence along the east line of said Tract "BB", $N 00^{\circ}09'51'' W$, a distance of 25.93 feet;

thence along the north line of Tracts "BB" and "CC" of said Partition Plat No. 2011-005 and the north right-of-way line of Estonia Ave., $S 89^{\circ}25'01'' W$, a distance of 467.09 feet to the beginning of a curve, concave southerly and having a radius of 416.00 feet;

thence westerly along said curve through an angle of $00^{\circ}18'51''$, an arc distance of 2.28 feet to the point of beginning.

Containing 10.46 acres, more or less.

Southwest Tract-

Being that portion of Parcel 1, of said Partition Plat No. 2011-005, south of St. Moritz Loop; being more particularly described as follows:

Beginning at the most southerly southwest corner of said Parcel 1, also being an angle point on the east line of Tract "DD" of said Partition Plat No. 2011-005;

thence N $00^{\circ}25'09''$ E, a distance of 49.23 feet to the beginning of a curve, concave westerly and having a radius of 237.65 feet;

thence northerly along said curve through an angle of $25^{\circ}52'18''$, an arc distance of 107.31 feet;

thence N $25^{\circ}27'08''$ W, a distance of 2.23 feet to the beginning of a non-tangent curve, concave northwesterly and having a radius of 519.50 feet to which a radial line bears S $28^{\circ}12'39''$ E and the south right-of-way line of St. Moritz Loop;

thence along said south right-of-way line, northeasterly along said curve through an angle of $15^{\circ}44'00''$, an arc distance of 142.65 feet, to the beginning of a reverse curve, concave southerly and having a radius of 15.00 feet;

thence easterly along said curve through an angle of $87^{\circ}59'15''$, an arc distance of 23.04 feet to the west right-of-way line of Geneva Loop;

thence along said west right-of-way line, S $45^{\circ}57'23''$ E, a distance of 55.15 feet to the beginning of a curve, concave westerly and having a radius of 155.00 feet;

thence southerly along said curve through an angle of $45^{\circ}47'35''$, an arc distance of 123.88 feet;

thence S $00^{\circ}09'51''$ E, a distance of 53.60 feet to the beginning of a non-tangent curve, concave southerly and having a radius of 416.00 feet to which a radial line bears N $8^{\circ}30'06''$ W, being the north line of said Tract "DD";

thence westerly along said curve through an angle of $02^{\circ}17'42''$, an arc distance of 16.67 feet, to a compound curve, concave southerly and having a radius of 10,289.93 feet to which a radial line bears S $10^{\circ}47'47''$ E;

thence westerly along said curve through an angle of $01^{\circ}02'02''$, an arc distance of 185.70 feet to the point of beginning.

Containing 0.86 acres, more or less.

Western Tract-

Being a tract of land south of Tooze Road, west of S.W. 110th Avenue and east of Grahams Ferry Road; being more particularly described as follows:

Beginning at the southeast corner of Parcel 2, Partition Plat No. 2010-046, Clackamas County Records;

thence along the south line of said Parcel 2, $S 89^{\circ}57'35'' W$, a distance of 16.04 feet to the beginning of a non-tangent curve, concave northwesterly and having a radius of 15.00 feet to which a radial line bears $N 83^{\circ}51'23'' E$;

thence southwesterly along said curve through an angle of $91^{\circ}15'24''$, an arc distance of 23.89 feet;

thence $S 85^{\circ}06'02'' W$, a distance of 237.49 feet to the beginning of a curve, concave northeasterly and having a radius of 10.00 feet;

thence northwesterly along said curve through an angle of $80^{\circ}33'23''$, an arc distance of 14.06 feet, to the beginning of a reverse curve, concave westerly and having a radius of 568.00 feet;

thence northerly along said curve through an angle of $00^{\circ}14'39''$, an arc distance of 2.42 feet;

thence $S 75^{\circ}31'21'' W$, a distance of 31.36 feet to the beginning of a non-tangent curve, concave westerly and having a radius of 535.50 feet to which a radial line bears $N 75^{\circ}31'21'' E$, being the east line Parcel 3, Partition Plat No. 2010-046, Clackamas County Records;

thence southerly along said curve through an angle of $13^{\circ}42'15''$, an arc distance of 128.08 feet to the south line of said Parcel 3, Partition Plat No. 2010-046;

thence along said south line, $S 84^{\circ}34'00'' W$, a distance of 516.42 feet;

thence $N 05^{\circ}26'00'' W$, a distance of 93.50 feet;

thence $S 84^{\circ}39'47'' W$, a distance of 55.25 feet to the beginning of a curve, concave northerly and having a radius of 40.00;

thence westerly along said curve through an angle of $50^{\circ}46'17''$, an arc distance of 35.45 feet;

thence $N 44^{\circ}33'55'' W$, a distance of 69.86 feet;

thence $S 45^{\circ}26'05'' W$, a distance of 71.31 feet;

thence $N 44^{\circ}33'55'' W$, a distance of 17.00 feet;

thence $S 45^{\circ}26'05'' W$, a distance of 45.50 feet;

thence $S 44^{\circ}33'55'' E$, a distance of 29.00 feet;

thence $S 45^{\circ}26'05'' W$, a distance of 119.00 feet;

thence $N 44^{\circ}33'55'' W$, a distance of 551.29 feet to the beginning of a curve, concave southwesterly and having a radius of 688.00;

thence northwesterly along said curve through an angle of $00^{\circ}39'25''$, an arc distance of 7.89 feet, to the beginning of a reverse curve, concave easterly and having a radius of 10.00 feet;

thence northerly along said curve through an angle of $69^{\circ}49'28''$, an arc distance of 12.19 feet, to the beginning of a reverse curve, concave northwesterly and having a radius of 538.00 feet;

thence northerly along said curve through an angle of $2^{\circ}49'24''$, an arc distance of 26.51 feet;

thence $N 68^{\circ}13'16'' W$, a distance of 33.52 feet to the east line of Parcel 1, Partition Plat No. 2007-127, Clackamas County Records and the beginning of a non-tangent curve, concave northwesterly and having a radius of 660.00 feet to which a radial line bears $S 67^{\circ}46'16'' E$;

thence northerly along said curve through an angle of $12^{\circ}54'02''$, an arc distance of 148.61 feet to the beginning of a reverse curve concave southeasterly and having a radius of 590.00 feet;

thence northeasterly along said curve through an angle of $33^{\circ}20'28''$, an arc distance of 343.33 feet to the most westerly southwest corner of parcel 3 of said Partition Plat No. 2007-127;

thence along the west line of said parcel 3 N 46°52'51" W, a distance of 129.86 feet to the beginning of a curve concave northeasterly and having a radius of 829.36 feet;

thence northwesterly along said curve through an angle of 35°35'38", an arc distance of 515.22 feet to the south line of Partition Plat No. 1994-182, Clackamas County Records;

thence along last said south line and the north line of that property conveyed by Doc. No. 99-111865, Clackamas County Deed Records, S 89°48'25" W, a distance of 883.33 feet to the east line of "Parcel II" as conveyed by Doc. No. 2000-050326, Clackamas County Deed Records;

thence along said east line, N 10°57'15" W, a distance of 166.02 feet, more or less, to the east right-of-way line of Grahams Ferry Road (30.00 feet east of centerline);

thence along said east right-of-way line, N 15°37'14" E, a distance of 16.42 feet;

thence N 19°23'05" E, a distance of 753.43 feet to the south right-of-way line of Tooze Road (20.00 feet south of centerline);

thence along said south right-of-way line, N 89°48'29" E, a distance of 1128.69 feet to an angle point;

thence S 00°04'23" E, a distance of 37.01 feet (width varies);

thence N 89°48'43" E, a distance of 573.41 feet to the beginning of a curve, concave southerly and having a radius of 861.50 feet;

thence easterly along said curve through an angle of 37°54'39", an arc distance of 570.03 feet;

thence S 52°17'19" E, a distance of 50.00 feet;

thence S 54°22'00" E, a distance of 78.05 feet to the west right-of-way line of S.W. 110th Avenue (20.00 feet west of centerline);

thence along said west right-of-way line, S 00°02'25" E, a distance of 1790.09 feet to the point of beginning.

Containing 93.22 acres, more or less.

Northern Tract-

Being a tract of land in said Section 10, north of Tooze Road, west of Grahams Ferry Road; being more particularly described as follows:

Beginning at the southeast corner of said Section 10;

thence along the south line of said Section 10, S 89°41'57" W, a distance of 1396.81, more or less, to the east right-of-way line of (old Tooze Rd.) S.W. 110th Ave. (Co. Rd. No. 355);

thence N 00°00'58" W, a distance of 19.97 feet to the north right-of-way line of said Tooze Road;

thence along said north right-of-way line, S 89°47'18" W, a distance of 1246.19 feet to an angle point;

thence S 89°49'56" W, a distance of 850.31 feet to an angle point;

thence N 03°48'34" E, a distance of 18.54 feet to said north right-of-way line (38.50 feet north of centerline);

thence S 89°49'56" W, a distance of 207.90 feet to an angle point;

thence N 35°04'45" W, a distance of 48.13 feet to the east right-of-way line of Grahams Ferry Road (38.50 feet east of centerline);

thence N 19°46'46" E, a distance of 82.42 feet to an angle point;

thence S 89°47'37" W, a distance of 19.69 feet to said east right-of-way line (20.00 feet east of centerline);

thence N 19°46'46" E, a distance of 507.24 feet to an angle point;

thence N 44°25'31" E, a distance of 427.27 feet to an angle point;

thence N 03°15'57" E, a distance of 457.06 feet to an angle point;

thence N 39°50'57" E, a distance of 1125.27 feet to an angle point;

thence N 10°48'57" E, a distance of 557.50 feet to the north line of Parcel 1, of Partition Plat 1993-165, Clackamas County Records;

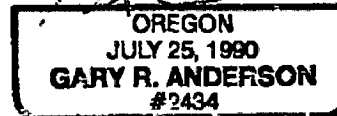
thence along said north line, N 89°32'32" E, a distance of 552.49 feet;

thence S 25°35'13" E, a distance of 60.61 feet;
thence N 82°20'47" E, a distance of 239.06 feet;
thence N 16°25'38" W, a distance of 395.13 feet;
thence N 75°33'02" E, a distance of 560.25 feet;
thence S 27°12'02" E, a distance of 350.00 feet;
thence S 33°30'02" E, a distance of 150.00 feet;
thence S 38°00'32" E, a distance of 286.48 feet to the north line of Parcel 2 of
said Partition Plat 1993-165;
thence along last said north line, N 89°46'11" E, a distance of 748.50 feet to the
east line of said Section 10;
thence along said east line, S 00°22'19" W, a distance of 2631.94 feet to the
point of beginning.

Containing 200.48 acres, more or less.

The total area of all five Tracts containing 364.96 acres, more or less.

Bearings based on SN 1982-007 Clackamas County Surveyor's Office.



Remd 12/31/13

Reimbursement Exhibit A	Villebois SS Master Plan	Property	Tax Lot	Area - ac	% of Total Acres	OWNER	OWNER ADDR	CITY	STATE	ZIP
Western Tract	5A	City *1	31W15 02919	2.91	\$5,243.59	ZIONS FIRST NATIONAL BANK	1 S MAIN FL 5	SALT LAKE CITY	UT	84133-1109
Western Tract	5A,5B,3B	City *1	31W15 02916	16.20	\$29,191.13	ZIONS FIRST NATIONAL BANK	1 S MAIN FL 5	SALT LAKE CITY	UT	84133-1109
Western Tract	5A,5B,3B	City *1	31W15AD00100	7.21	\$12,991.85	VILLEBOIS VILLAGE CENTER LLC	11416 SW BARBER ST	WILSONVILLE	OR	97070-7392
Eastern Tract	5C,6,7B	City	31W15 00180	27.99	\$50,435.78	BISCHOF DONALD E	16300 SW 192ND AVE	SHERWOOD	OR	97140-8744
Eastern and Southwest Tract	5C,7B	City *1	31W15 00301	12.32	\$22,199.67	FASANO FAMILY LLC	10129 SW WASHINGTON ST	PORTLAND	OR	97225-6947
Eastern Tract	6,7B,7C	City *1	31W15 00300	15.47	\$27,875.73	WELLS FARGO NA	600 CALIFORNIA ST FLR 19	SAN FRANCISCO	CA	94108-2710
Southern Tract	7D	City	31W15 00302	*2	\$141,059.00	West Linn - Wilsonville School District	22210 SW STAFFORD RD	TUALATIN	OR	97062-7738
Western Tract	4	UGB	31W15 01101	2.17	\$3,910.17	CITY OF WILSONVILLE	29799 SW TOWN CENTER LOOP E	WILSONVILLE	OR	97070
Western Tract	4	UGB	31W15 01200	7.61	\$13,712.62	REMBOLD CO	1022 SW SALMON ST STE 450	PORTLAND	OR	97205-2451
Western Tract	4	UGB	31W15 01202	1.00	\$1,801.92	TABER CHARLES E & CAROLYN J	11800 SW TOOZE RD	WILSONVILLE	OR	97070-7554
Western Tract	4	UGB	31W15 01203	1.00	\$1,801.92	NIMS JAY R & THERESA C	11700 SW TOOZE RD	WILSONVILLE	OR	97070-9519
Western Tract	4,3A3B	UGB	31W15 01205	6.93	\$12,487.32	REMBOLD CO	1022 SW SALMON ST STE 450	PORTLAND	OR	97205-2451
Western Tract	4,5B	UGB	31W15 00800	8.70	\$15,676.72	CHANG VICTOR C	3181 WEMBLEY PARK RD	LAKE OSWEGO	OR	97034-2637
Western Tract	4,5B	UGB	31W15 00900	2.99	\$5,387.75	CHANG VICTOR C	3181 WEMBLEY PARK RD	LAKE OSWEGO	OR	97034-2637
Western Tract	4,5B	UGB	31W15 01000	5.87	\$10,577.28	CHANG VICTOR C	3181 WEMBLEY PARK RD	LAKE OSWEGO	OR	97034-2637
Western Tract	4,5B	UGB	31W15 01100	7.64	\$13,766.68	CITY OF WILSONVILLE	29799 SW TOWN CENTER LOOP E	WILSONVILLE	OR	97070-9454
Western Tract	5B	UGB	31W15 00700	4.76	\$8,577.15	CHANG VICTOR C	3181 WEMBLEY PARK RD	LAKE OSWEGO	OR	97034-2637
Northern Tract	UPA3	Urban Reserve	31W10 01300	3.84	\$6,919.38	ANTHONY LARRY EUGENE	27220 SW GRAHAMS FERRY RD	SHERWOOD	OR	97140-7201
Northern Tract	UPA3	Urban Reserve	31W10 01302	5.21	\$9,388.01	DIX LOUIS G JR	27330 SW GRAHAMS FERRY RD	SHERWOOD	OR	97140-7201
Northern Tract	UPA3	Urban Reserve	31W10 01303	1.21	\$2,180.33	BOBOSKY ROBERT S & JUDEEN M	6770 SW CANYON DR	PORTLAND	OR	97225-3650
Northern Tract	UPA3	Urban Reserve *1	31W10 01304	12.92	\$23,280.83	RRR RANCH LLC	10213 NE 28TH CT	VANCOUVER	WA	98686-4281
Northern Tract	UPA3	Urban Reserve *1	31W10 01305	7.79	\$14,036.97	RRR RANCH LLC	10213 NE 28TH CT	VANCOUVER	WA	98686-4281
Northern Tract	UPA3	Urban Reserve *1	31W10 01306	11.50	\$20,722.10	HARTFORD ROBERT W	PO BOX 918	ROCKAWAY	OR	97136-0918
Northern Tract	UPA3	Urban Reserve *1	31W10 01400	29.99	\$54,039.63	SIMS T DWIGHT	522 SW 5TH 1110 YEON BG	PORTLAND	OR	97204
Northern Tract	UPA3	Urban Reserve	31W10 01500	14.45	\$26,037.77	BISCHOF DONALD E	16300 SW 192ND AVE	SHERWOOD	OR	97140-8744
Northern Tract	UPA3	Urban Reserve	31W10 01501	5.00	\$9,009.61	BISCHOF DONALD E	16300 SW 192ND AVE	SHERWOOD	OR	97140-8744
Northern Tract	UPA3	Urban Reserve	31W10C 01600	0.25	\$450.48	ANTHONY LARRY EUGENE	27220 SW GRAHAMS FERRY RD	SHERWOOD	OR	97140-7201
Northern Tract	UPA3	Urban Reserve	31W10C 01700	1.22	\$2,198.34	DIX LOUIS G JR & KATHI A	27330 SW GRAHAMS FERRY RD	SHERWOOD	OR	97140-7201
Northern Tract	UPA3	Urban Reserve	31W10C 01800	6.92	\$12,469.30	BOBOSKY ROBERT S & JUDEEN M	6770 SW CANYON DR	PORTLAND	OR	97225-3650
Northern Tract	UPA3	Urban Reserve	31W10C 01801	1.53	\$2,756.94	HAM LYLE BRUCE TRUSTEE	27712 SW GRAHAMS FERRY RD	SHERWOOD	OR	97140-8419
Northern Tract	UPA3	Urban Reserve	31W10C 01802	1.07	\$1,928.06	HAM LYLE BRUCE TRUSTEE	27712 SW GRAHAMS FERRY RD	SHERWOOD	OR	97140-8419
Northern Tract	UPA3	Urban Reserve	31W10C 01803	2.72	\$4,901.23	MONTGOMERY WESLEY A & KAREN M	16974 SW RICHEN PARK CIR	SHERWOOD	OR	97140-8682
Northern Tract	UPA3	Urban Reserve	31W10C 01804	1.13	\$2,036.17	HILL MARK	27636 SW GRAHAMS FERRY RD	SHERWOOD	OR	97140-8419
Northern Tract	UPA3	Urban Reserve	31W10C 01805	1.00	\$1,801.92	DIX LOUIS G JR & KATHI A	27330 SW GRAHMS FRY RD	SHERWOOD	OR	97140-7201
Northern Tract	UPA3	Urban Reserve	31W10C 01900	4.38	\$7,892.42	TOLLEN TONIE I TRUSTEE	11681 SW TOOZE RD	WILSONVILLE	OR	97070-9519
Northern Tract	UPA3	Urban Reserve	31W10C 02000	2.04	\$3,675.92	DOMINQUEZ WILFRIDO CHAVEZ	11611 SW TOOZE RD	WILSONVILLE	OR	97070-9519
Northern Tract	UPA3	Urban Reserve	31W10C 02100	2.92	\$5,261.61	STEFFECK DONALD WILLIAM & DORENE	27818 SW GRAHAMS FERRY RD	SHERWOOD	OR	97140-8419
Northern Tract	UPA3	Urban Reserve	31W10C 02101	2.82	\$5,081.42	ANDERSON DIRK D & ALLISON B	11797 SW TOOZE RD	WILSONVILLE	OR	97070-9519
Northern Tract	UPA3	Urban Reserve	31W10C 02102	0.91	\$1,639.75	PRIGODICH MICHAEL R	27900 SW GRAHAMS FERRY RD	SHERWOOD	OR	97140-8419
Northern Tract	UPA3	Urban Reserve	31W10C 02103	0.61	\$1,099.17	MCRAE SEAN G & KATHLEEN	11811 SW TOOZE RD	WILSONVILLE	OR	97070-7554
Northern Tract	UPA3	Urban Reserve	31W10C 02200	0.91	\$1,639.75	STEFFECK DONALD WILLIAM & DORENE	27818 SW GRAHAMS FERRY RD	SHERWOOD	OR	97140-8419

totals: **253.11** **\$597,143**

*1 - Parcels lie partially within and outside of SS service area. Acreage has been adjusted to only that portion of parcel lying within SS service area.

*2 - West Linn - Wilsonville School District entered into a separate development agreement with the City for their reimbursement based on the planned housing for the site acquired for the Lowrie Primary School. This results in an overall cost reduction of \$141,059 leaving \$456,084 to be prorated among the other property owners.

EXHIBIT D

**Coffee Lake Drive
Sewer Improvement - 2077**

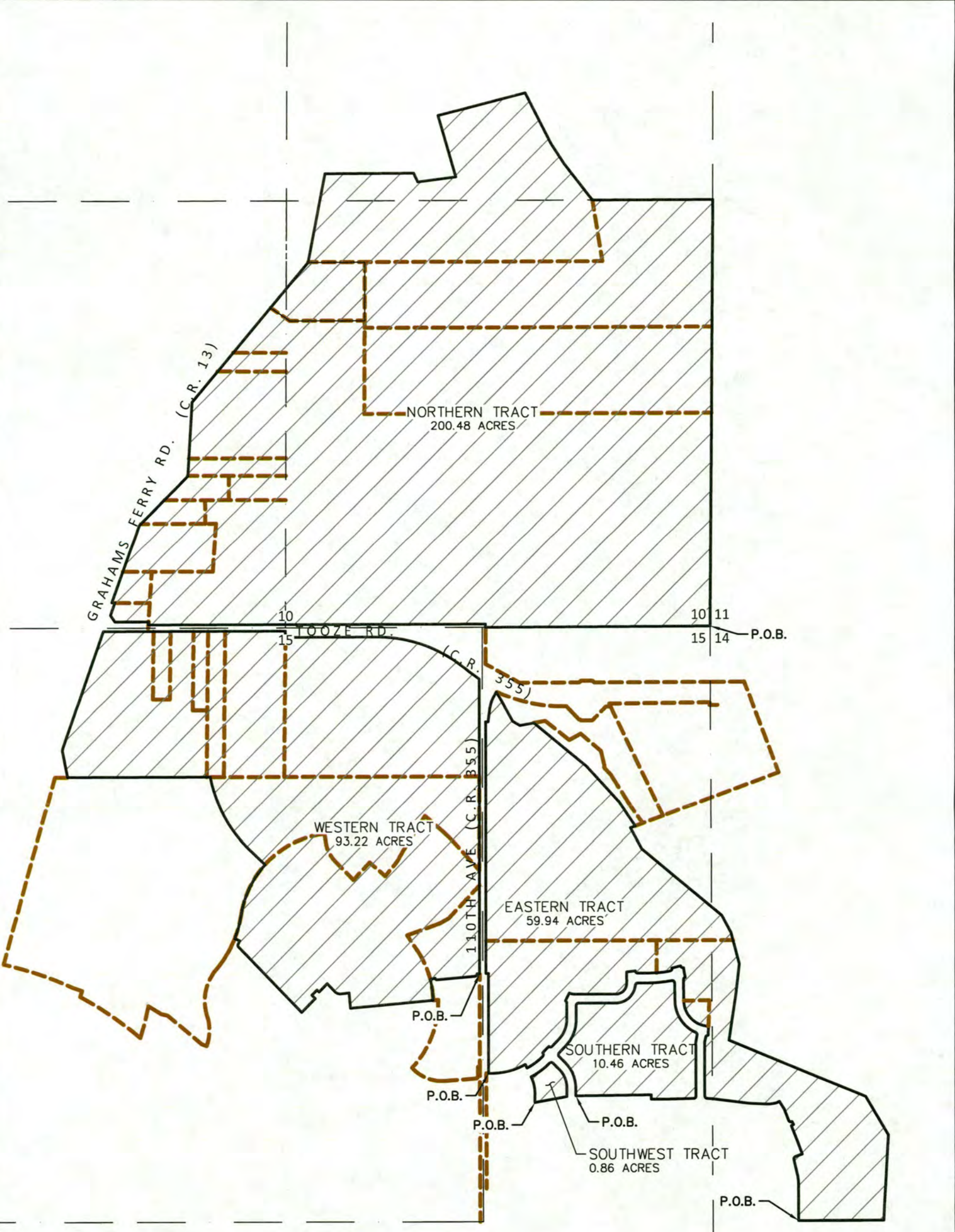
CONSTRUCTION COSTS

Exhibit E

Updated 4-30-2012

Item	Alternate Bid	Change Order	Construction Cost	SS Trunk Line	VB East 2 Road thru Wetland	
DESIGN & ENGINEERING						
Pacific Community Design	\$29,110.00	\$6,505.00	\$35,615.00	\$25,181.16	\$10,433.84	
Geo Conn North West	\$29,349.66	\$3,640.00	\$32,989.66	\$23,324.95	\$9,664.71	
		Sub Total	\$68,604.66	\$48,506.11	\$20,098.55	29.30% of Construction Cost
MITIGATION EXPENSES						
Mud Slough Mitigation	\$24,583.00		\$24,583.00	\$11,222.67	\$13,360.33	
		Sub Total	\$24,583.00	\$11,222.67	\$13,360.33	21 ft SS line, 46 ft roadway
CONSTRUCTION CONTRACT EXPENSE						
Kerr Contractors Inc.	\$557,622.20	\$23,195.64	\$580,817.84	\$410,660.34	\$170,157.50	
		Sub Total	\$580,817.84	\$410,660.34	\$170,157.50	29.30% of Construction Cost
OTHER EXPENSES						
DJC Add - RFQ, SOQ	\$336.88		\$336.88	\$336.88		
DJC Add - Bid	\$635.25		\$635.25	\$635.25		
World Courier	\$169.61		\$169.61	\$169.61		
BOLI Fee	\$571.76		\$571.76	\$571.76		
ABC Transcription	\$170.00		\$170.00	\$170.00		
Bulk Water	\$856.40		\$856.40	\$856.40		
City Const. Mgt. & Inspection Time	\$103,557.85		\$103,557.85	\$103,557.85		
City Wetland Permitting Staff Time	\$44,807.55		\$44,807.55	\$20,455.62	\$24,351.93	21 ft SS line, 46 ft roadway
		Sub Total	\$151,105.30	\$126,753.37	\$24,351.93	
			Construction Cost	SS Trunk Line	VB East 2 Road through Wetland	
GRAND TOTAL:			\$825,111	\$597,143	\$227,968	

Drawing Name: J:\1197-011.12\Survey\CAD\DWG\1197-011.dwg Aug 02, 2012 - 2:02pm - gra



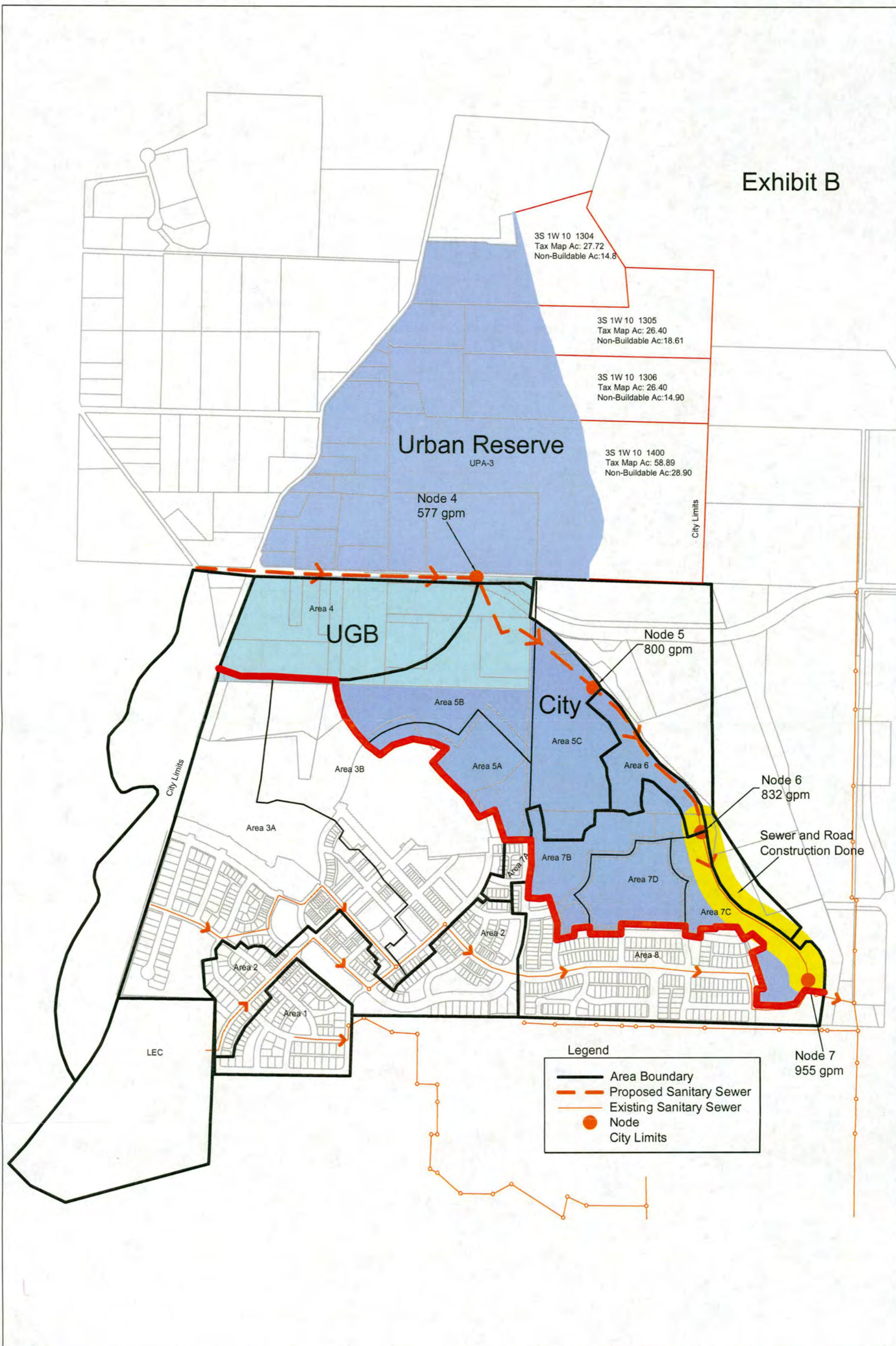
SCALE: 1"=600'

REIMBURSEMENT EXHIBIT
 SECTIONS 10, 14 & 15
 T. 3 S., R. 1 W., W.M.,
 CLACKAMAS COUNTY, OR.

DATE	06/07/12
DRAWN BY	MDS
CHECKED BY	GRA
REVISIONS	
JOB NO.	1197-011

WESTLAKE
 CONSULTANTS INC.
 ENGINEERING ♦ SURVEYING ♦ PLANNING
 PACIFIC CORPORATE CENTER
 15115 S.W. SEQUOIA PARKWAY, SUITE 150 (503) 684-0652
 TIGARD, OREGON 97224 FAX (503) 624-0157

Exhibit B



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

	<u>WELLS</u>	<u>RIVER</u>
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 <u>Material</u>	Painting <u>Maintenance</u>	Scheduled to be <u>Abandoned</u>
Reservoirs: Elligesen’s 2 + C Level	Steel	\$1,145,000	No
Charbonneau’s Tank (reservoir)	Concrete	\$0	Yes

(over)

*Recd 8/20/12
red.*

	<u>COST</u>
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.	<u>\$1,236,667</u>
	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.

July 16, 2012



29799 SW Town Center Loop East
Wilsonville, OR 97070
Phone 503-682-0411
Fax 503-682-1015
TDD 503-682-0843
Web www.ci.wilsonville.or.us

Pat Egan, Chair
Oregon Transportation Commission
c/o Oregon Dept. of Transportation
Planning Unit, Attn: Kristina Evanoff
555 13th Street NE, Suite 2
Salem, OR 97301
Submitted via email: OregonSTS@odot.state.or.us

Subject: City of Wilsonville Comments on Draft Statewide Transportation Strategy (STS)

Dear Chair Egan and Members of the Oregon Transportation Commission (OTC):

The Wilsonville City Council appreciates the opportunity to provide comment on the Draft Statewide Transportation Strategy (STS), dated May 2012. The STS seeks to identify the most effective greenhouse gas (GHG) emissions reduction strategies in transportation systems, vehicle and fuel technologies, and urban land use patterns.

The City Council met on July 2 to review and discuss components of the draft STS, and has the following specific issues for consideration by the OTC to improve the STS:

1. **Urban Land-Use Patterns — Siting Jobs Near Housing:** The Draft STS appears to only casually note that urban land-use patterns contribute to GHG emissions. The *Draft STS Summary and Next Steps* document, pp. 61-62, states:

“Oregon needs to continue to manage how land is developed to limit sprawl, and should look for opportunities to provide transportation, jobs, and amenities where they will facilitate more walkable, mixed-use communities.”

The City Council suggests adding a related land-use planning strategy to Recommendation G4 that addresses the relationship between new employment areas and housing. Such a strategy can provide valuable benefits that result in both a potential reduction in vehicle miles traveled (VMT) and GHG emissions by encouraging policies to site residential living opportunities near where jobs are located in employment areas. In particular, new urban growth boundary (UGB) expansion areas should seek to place employment areas in close proximity to residential living areas in order to provide shorter-distance work commutes that more easily accommodate active transportation and transit options. We should avoid land-use planning that “institutionalizes” cross-region commuting from where people live to where they work.

2. **Increasing transit and job connections:** The *Draft STS Summary and Next Steps* document contains a series of recommendations under “G9 – Transit Growth,” pp. 35-37. While these policy recommendations are fine, they fall short of a critical component for a successful transit policy: increasing transit and job connections.

As the operator of a growing urban-area transit system, South Metro Area Regional Transit (SMART), in a job-rich municipality, the City of Wilsonville has extensive

“Serving the community with pride”

experience gained over two decades in transit operations. One of the key components that the City has found in a successful transit program is to increase transit and job connections.

In particular, one of the most important elements for increasing the use of transit options for commuting workers as way to reduce VMT and GHG emissions is to focus on the “last-mile” connection; that is, getting from home to the transit connection and getting from the transit connection to the worksite. Studies and experience have demonstrated that resolving the “last-mile” connection can greatly encourage the use transit alternatives as a regular transportation mode. To this end, for example, SMART buses meet incoming Tri-Met Westside Express Service (WES) commuter trains in order to deliver commuting employees to their worksites within 10 minutes of arrival on the train.

3. **Promoting multi-modal systems and connectivity:** The *Draft STS Summary and Next Steps* document, pp. 36-37, outlines a number of practical, effective policies pertaining to “Intra-city” and “Inter-city” public transportation. The City Council supports proposed policies:

“Element G9.8: Promote increased transit service between MPO areas and between population and job centers.”

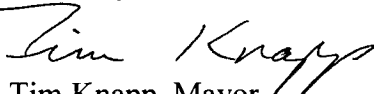
“Element G9.9: Focus public transportation investments in high-volume corridors with potential for modal diversion.”

“Element G9.10: Utilize existing infrastructure where possible (e.g., bus-rapid transit [BRT]) for transit passenger service.”

Not only do these kinds of policies result in potential reductions in VMT and GHG emissions, they also have the added benefit of removing commuter vehicles from congested arterials, and thereby improving the capacity of existing roadways for trucks and the movement of freight. Again, the City’s experience as the operator of the SMART transit system, which connects the Salem and Canby “labor sheds” with the greater Wilsonville and Portland metro region’s employment areas, illustrates that promoting multi-modal systems and connectivity can make a significant difference in transit utilization and corresponding reductions in VMT and GHG emissions.

The Wilsonville City Council appreciates the time and consideration by the OTC of our comments on the Draft STS. Thank you.

Sincerely,


Tim Knapp, Mayor

cc: Wilsonville City Council
French Prairie Forum
Metro Council, JPACT and MPAC
Clackamas County Coordinating Committee
Washington County Coordinating Committee

NOT IN
PACKET

**NOTICE OF PROPOSED REIMBURSEMENT DISTRICT FOR
COFFEE LAKE DRIVE SEWER IMPROVEMENTS**

Date of Mailing of Notice: August 3, 2012
(Sent via Regular Mail and via Certified Mail Return Receipt Requested)

To: _____

The City of Wilsonville ("City") and the West Linn-Wilsonville School District ("School District") entered into an Intergovernmental Agreement, pursuant to Resolution No. 2247, for the construction of the Coffee Lake Drive Sewer Line ("Project"), which will serve the School District's new Lowrie Primary School and will also serve certain other properties, including your real property, as described below. All properties that will or may be served by the Project are referred to as being Reimbursement District Properties located within the Reimbursement District.

The City has completed construction of the Coffee Lake Drive Sewer Line and is now ready to establish a Reimbursement District for properties that will benefit from the Project, including your Reimbursement District Property, for a portion of the Project costs as follows:

Property Tax Lot: _____

Proposed Reimbursement District Fee Amount: _____ ("Fee Amount")

A full listing of all Reimbursement District Properties and each proposed fee is attached to the enclosed proposed Resolution No. 2350 as Exhibit D.

Public Hearing: Pursuant to Wilsonville City Code 3.116, the Wilsonville City Council will conduct a public hearing to consider passage of proposed RESOLUTION NO. 2350, which is 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. The hearing will be held during the regular City Council meeting on Monday, August 20, 2012, which is scheduled to begin at 7 pm. You may testify in person or you may submit your testimony in writing, as described below.

Reimbursement District Fee Payment: Each Reimbursement District Property owner, **at the time of issuance of a public works permit for sewer service for the Reimbursement District Property**, will be required to pay to the City, for purposes of reimbursement to the City, the pro rata share of the Project, based on the assigned pro rata share of the costs of extending the sewer line improvements to serve the Reimbursement District Properties, provided such permit is requested during the life of the Reimbursement District.

Reimbursement Process: The process begins following completion of the Project with this Notice to all identified Reimbursement District Property owners. Before the Reimbursement District can be formed, however, the City Council must hold a public hearing. During this hearing, the City Council will hear testimony from impacted parties and may elect to form the Reimbursement District as recommended by the City Engineer or may reject the Resolution for the Reimbursement District. After the hearing, if the City Council approves the Resolution, the City Recorder will be directed to file notice of the Reimbursement District formation with the Clackamas County recorder. This filing does not constitute a city lien against any of the properties located within the Reimbursement District. Please contact the City Recorder to correct any information on this Notice you believe to be incorrect.

Right to Testify: You may testify in person or in writing about the Reimbursement District or your proposed Fee Amount. The City Council will receive oral testimony during a public hearing at its regularly scheduled meeting on Monday, August 20, 2012, which meeting is scheduled to begin at 7 pm. This matter may appear later on the agenda. The hearing will be held at Wilsonville City Hall in Council Chambers. Wilsonville City Hall is located at 29799 SW Town Center Loop East, Wilsonville, Oregon 97070. If you wish to provide written testimony in advance of the hearing, you may send it to the foregoing address and address it to the Attention of the City Recorder. If you provide written testimony, please include your full legal name as owner of the property, the description of your property, and why you support or oppose the Resolution or the proposed Fee Amount for your property. You may also bring written testimony to the hearing and enter it into the record during the hearing, in addition to, or in lieu of, presenting oral testimony.

Duration of the Reimbursement District: The Reimbursement District will be in effect until the City is fully reimbursed or for a period of ten (10) years after the completion date of the Project, which was January 17, 2012, whichever occurs sooner. Provided, however, the Reimbursement District may remain in effect for a longer period in the event the City Council, for good cause shown, authorizes an extension of the ten (10) year period. Any Reimbursement District Property that does not apply for sewer service within the life of the Reimbursement District will not be subject to the Reimbursement District Fee.

Questions about this notice may be directed to the City Recorder at (503) 570-1506 or king@ci.wilsonville.or.us

CITY OF WILSONVILLE:

By: Sandra C. King, MMC, City Recorder

King, Sandy

From: King, Sandy
Sent: Monday, July 30, 2012 3:27 PM
To: SPOKSMAN LEGAL AD ; Dax Legaspi (gcacka@canbyherald.com)
Subject: Public hearing notice
Attachments: Res 2350 Public hearing notice.docx

Please publish the attached public hearing notice in the August 7th and August 14th, 2012 editions of the Spokesman legal advertisements and send proof of publication.

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

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CITY OF WILSONVILLE
CITY COUNCIL
NOTICE OF PUBLIC HEARING
AUGUST 20, 2012

PUBLIC NOTICE IS HEREBY GIVEN that the Wilsonville City Council will conduct a public hearing **August 20, 2012** at the hour of 7 p.m. in the Council Chambers, 29799 SW Town Center Loop East, Wilsonville for the purposes of considering passage of proposed Resolution No. 2350.

Pursuant to Wilsonville City Code 3.116, the Wilsonville City Council will conduct a public hearing to consider passage of proposed RESOLUTION NO. 2350, which is 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. The hearing will be held during the regular City Council meeting on Monday, August 20, 2012, which is scheduled to begin at 7 pm. You may testify in person or you may submit your testimony in writing, as described below.

Assessment Method: Each Reimbursement District Property owner, at the time of issuance of a public works permit for sewer service for the Reimbursement District Property, will be required to pay to the City, for purposes of reimbursement to the City, the pro rata Assessment for the Project, based on the assigned pro rata share of the costs of extending the sewer line improvements to serve the Reimbursement District Properties. Pro rata shares are based on the Reimbursement District Property owner's acreage divided by the total acreage for the Reimbursement District Properties.

Assessment Process: The Assessment process begins following completion of the Project and with this Notice to all Reimbursement District Property owners. Before the Assessment can take effect, however, the City Council must hold a public hearing. During this hearing, the City Council will hear testimony and that testimony may change your Assessment or the Assessment methodology, or the City Council may reject the Resolution for the Reimbursement District. After the hearing, if the City Council approves the Resolution, the City Recorder will be directed to file liens against all Reimbursement District Properties located within the City. The Assessment will not be made, however, until the owner (or owner's agent) of the Reimbursement District Property applies to the City for a public works permit to provide sewer service to the subject Reimbursement District Property. At that time, the full amount of the Assessment will be due and payable. Please note that this Assessment is not subject to tax limitations under the Oregon Constitution. Please contact the City Recorder to correct any information on this Notice you believe to be incorrect. No liens will be filed by the City for the Assessment against any Reimbursement District Property that is not currently within the City until that Reimbursement District Property is annexed into the City and at that time a lien will be filed.

Right to Object or Remonstrate: You may testify in person or in writing about your proposed Assessment. The City Council will receive oral testimony during a public hearing at its regularly scheduled meeting on Monday, August 20, 2012, which meeting is scheduled to begin at 7 pm. This matter may appear later on the agenda. The hearing will be held at Wilsonville City Hall in Council Chambers. Wilsonville City Hall is located at 29799 SW Town Center Loop East, Wilsonville, Oregon 97070. If you wish to provide written testimony in advance of the hearing, you may send it to the foregoing address and address it to the Attention of the City Recorder. If you provide written testimony, please include your full legal name as owner of the property, the description of your property, and why you support or oppose the Resolution or the proposed Assessment of your property. You may also bring written testimony to the hearing and enter it into the record during the hearing, in addition to, or in lieu of, presenting oral testimony.

Duration of the Reimbursement District: The Reimbursement District will be in effect until the City is fully reimbursed or for a period of ten (10) years after the completion date of the Project, which was January 17, 2012. The Reimbursement District may remain in effect for a longer period in the event the City Council, for good cause shown, authorizes an extension of the ten (10) year period. Any Reimbursement District Property not annexed into the City within the life of the Reimbursement District will not be subject to the Assessment.

Questions about this notice may be directed to the City Recorder at (503) 570.1506 or king@ci.wilsonville.or.us

Published in the Wilsonville Spokesman, August 7, 2012 and August 14, 2012.

King, Sandy

From: Callaway, Tamara
Sent: Thursday, August 02, 2012 2:49 PM
To: Jacobson, Barbara; Ossanna, Joanne; Kraushaar, Nancy; Adams, Steve
Cc: Kohlhoff, Mike; King, Sandy
Subject: Coffee Lake Drive Sewer Reimb. Dist.
Attachments: RES 2350 Establish Reimb Dist Seg 1 Ext (mk.bj.FNL 8-2-12).doc; RES 2350 Exh A - Reimbursement Map.pdf; RES 2350 Exh B - Sewer Line.pdf; RES 2350 Exh C - Legal Descrip.pdf; RES 2350 Exh D - Owners.pdf; RES 2350 Exh E - Constr Costs.pdf

One last look, please. We would like to start copying these soon, so we need to be certain everything looks good to go.

Thank you,

P.S. Barbara, did you have any changes to the Notice?

Tamara Callaway
Legal Assistant
City of Wilsonville
29799 SW Town Center Loop E
Wilsonville OR 97070
503-570-1507
503-682-1015 fax
callaway@ci.wilsonville.or.us

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Circular 230 Disclaimer: If any portion of this communication is interpreted as providing federal tax advice, Treasury Regulations require that we inform you that we neither intended nor wrote this communication for you to use in avoiding federal tax penalties that the IRS may attempt to impose and that you may not use it for such purpose.

RESOLUTION NO. 2350

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

WHEREAS, pursuant to Resolution No. 2247, the City of Wilsonville (City) and the West Linn Wilsonville School District (School District) entered into an Intergovernmental Cooperative Agreement for Villebois School Site Infrastructure, dated September 22, 2010 (the IGA); and

WHEREAS, the IGA provided, among other things, the following as to the Coffee Lake Drive Sewer Line:

"4. Sewer Line Improvements.

4.1. Coffee Lake Sewer Line. In order to properly serve this site and the greater area within which the site sits, a portion of the Coffee Lake Sewer Line, a 15" trunk line, must be constructed. The City and/or developers will design and construct this sewer line. The District is only responsible for its pro rata share of the costs of construction of the Coffee Lake Sewer Line, calculated at 24%; that is, from a point south of Barber Street to the southerly property line of the Bischoff/Lund property. The estimated cost of the District's portion of the Coffee Lake Sewer Line is \$134,880. The City has determined that there is other funding available for any extra capacity costs associated with these lines.

* * *

4.3. Sewer Line Locations. The general location of the Coffee Lake Sewer Line (*see* 4.1) ... are set forth in Exhibit C, attached hereto and incorporated by reference herein."; and

WHEREAS, the IGA further provides:

6. Actual Costs and Reimbursements for Street and Sewerage Improvements.

6.1. True-Up to Actual Costs. The parties recognize that the aforementioned costs are estimates only. Exhibit D, attached hereto and incorporated herein, provides in chart form a comprehensive guide to the engineering assumptions, estimates of infrastructure costs, reimbursement projections, and fees. The actual costs incurred and known at the time of

the completion of construction contracts shall be substituted for the estimates for the purposes of payment and reimbursement as required herein. The costs shall be subject to true-up to actual payments, inclusive of any additions or subtractions made to the full payment for each construction contract."; and

WHEREAS, the construction contract for and improvement of the Coffee Lake Drive Sewer Line was deemed complete, was duly constructed and bonded under the supervision and direction of the City Engineer, and was accepted by the City as of January 17, 2012, and actual costs have been trued-up and paid; and

WHEREAS, Wilsonville Code 3.116(6) provides the City may apply for reimbursement of its costs for improving a sewer facility to serve other property as follows:

(6) The applicant may include the City and the application may be made following improvement, but no later than three months after completion and acceptance by the City of the improvement. If the application is filed after construction, the application shall include the actual cost of construction as evidenced by a contract, receipts, bids, or other similar documents. In the event the City shall construct or shall pay for the construction of ... sewer lines ..., and there is no agreement to the contrary, the City shall require the owners of said property, prior to providing such ... sewer service ... to such property, to refund to the City a pro rata portion of the costs of the extension. The provisions of this section shall apply to the owners of said property in the same manner as subsection (1) is applied to the other property owners described therein." and

WHEREAS, the City has duly made its application in accordance with Wilsonville Code 3.116(6); and

WHEREAS, the following are incorporated by reference in this Resolution: **Exhibit A**, a map outlining the improvement area and dividing it into tracts; **Exhibit B**, a map depicting the location of the Coffee Lake Drive Sewer Basin, Coffee Lake Drive Sewer Line, and the constructed segment of the Coffee Lake Drive Sewer Line for which reimbursement is sought; **Exhibit C**, a legal description of the five improvement area tracts; **Exhibit D**, a listing of the owners of property within each tract that will be served by the sewer trunk line, a description of the amount of affected acreage per tax lot, the tax lot description number (note: the above refines the tract description so as to set forth only that acreage portion of a tax lot that is within the Coffee Lake Sewer Basin), the amount of charge owed, and the pro rata share of the cost of the improvement for each property based upon the engineer's allocation methodology, footnoted

thereon; and **Exhibit E**, a listing of the final costs for the sewer improvement, totaling \$597,143.00.

WHEREAS, the City Engineer had previously inspected the sewer line improvements, the properties to be served, reviewed the plans for the improvements, reported the improvements were feasible, desirable, and necessary for the orderly development and expansion of the City's sewage collection system and storm drainage system, were subject to public works permits issuance; have now been deemed substantially completed, and final costs have been confirmed; and

WHEREAS, the City Engineer, having duly considered the development potential of adjacent properties, the value of unused capacity of the improvements to serve other properties, rate making principals employed to finance public improvements, and such other information as presented, recommended that the City adopt a refund methodology to fairly apportion the costs of the extension of the Coffee Lake improvements to all be benefited properties, as set forth in **Exhibit D**; and

WHEREAS, the City Council duly noticed and held a public hearing on this matter on August 20, 2012, whereat the City Council received a staff report, exhibits, and public testimony.

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

1. The above recitals are incorporated by reference herein and the report and recommendations of the City Engineer are hereby adopted.
2. The Reimbursement District described in **Exhibits A, B and C** and the total cost and allocation of the cost of the Coffee Lake Sewer Line as set forth in **Exhibits D and E**, are adopted.
3. Except as provided in paragraph 4 below, at the time of issuance of a public works permit to provide sewer service to the subject property (Reimbursement District Property), each of the property owners within the Reimbursement District, as set forth in **Exhibit D** shall pay to the City, for the purpose of reimbursement to the City or its successor or assigns, a reimbursement fee (Reimbursement Fee) based on the pro rata portion of the costs of extending the sewer line improvements to serve the Reimbursement District Properties, pursuant to the methodology described in **Exhibit D** and allowing only for those costs

specifically set forth as allowed costs pursuant to Wilsonville Code 3.116 et seq., which total \$597,143.

4. Upon the City Engineer's final determination of the pro rata Reimbursement Fee of the Reimbursement District Properties, based on actual allowed Reimbursement District costs of the Coffee Lake Drive sewer line improvements, the City shall require that, prior to providing sewer service to a Reimbursement District Property, the pro rata Reimbursement Fee shall be paid to the City by the property owner if the request for sewer service occurs within the life of the Reimbursement District;
5. The date of acceptance of the sewer line improvements by the City Engineer ("Acceptance Date") is January 17, 2012. The Reimbursement District will remain in effect for a period of ten (10) years. Provided, however, the Reimbursement District may remain in effect for a longer period of time in the event the City Council, for good cause shown, authorizes an extension of the ten (10) year period. The Reimbursement District will bind and apply to all Reimbursement District Properties until the City has been reimbursed or the Reimbursement District terminates, whichever occurs sooner.
6. The Reimbursement Fee shall be adjusted as follows: on July 1, 2013 and on each succeeding July 1 as long as this District remains in effect; the unpaid balance shall accrue interest at the rate equal to the average of the prior fiscal year's Local Government Investment Pool (LGPI) interest, together with an accrued administrative fee of 2% of the unpaid balance.
7. The City Recorder shall cause notice of the formation and nature of the Reimbursement District to be filed in the office of the Clackamas County recorder for notice purposes. Such recording shall not create a lien and failure to make such recording shall not affect the legality of this Resolution or the obligation to pay the Reimbursement Fee.
8. Any legal action to contest the formation of this Reimbursement District or the Reimbursement Fee, including the amount of the charge designated for each parcel, must be filed within sixty (60) days following the adoption of this

Resolution establishing the Reimbursement District, as shown below. Any such action shall be by Writ of Review as provided in ORS 34.010 or ORS 34.100.

9. This Resolution is effective upon adoption.

ADOPTED by the Wilsonville City Council at a regular meeting thereof this ____ day of _____, 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

Council President Núñez

Councilor Hurst

Councilor Goddard

Councilor Starr

Attachments:

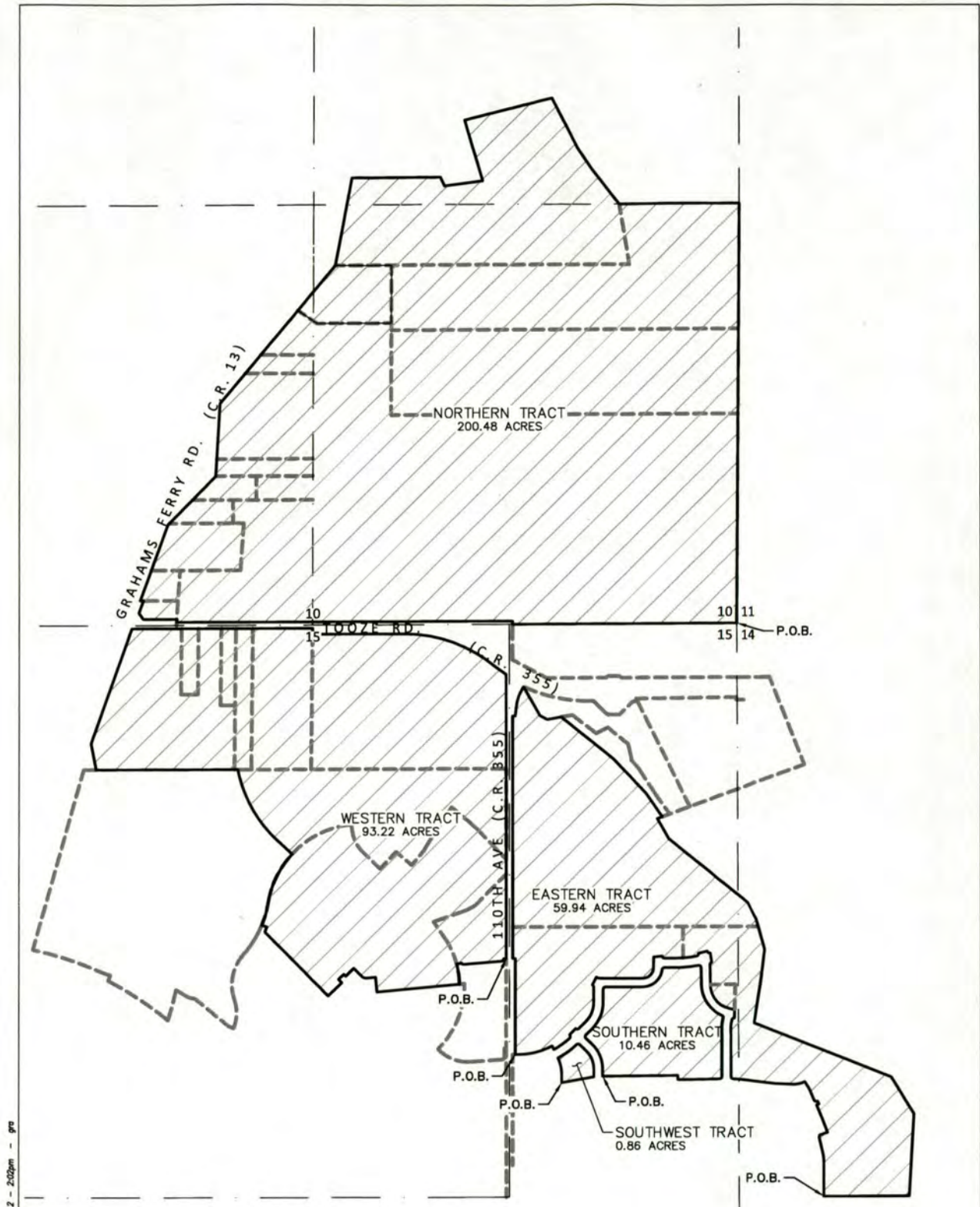
Exhibit A – Map titled Reimbursement District Exhibit, dated 7/6/12

Exhibit B – Map showing location of Coffee Lake Drive Sewer Basin, Sewer Line, and line segment

Exhibit C – Legal Description of Tracts of the Reimbursement District

Exhibit D – Methodology and Owners' Pro Rate Cost Share for Property by Tax Lot

Exhibit E – Coffee Lake Drive Sewer Improvements Construction Cost Breakdown



Drawing Name: \\1197-011.12\Survey\cadd\DWG\1197-011.dwg Aug 02, 2012 - 2:02pm - gra



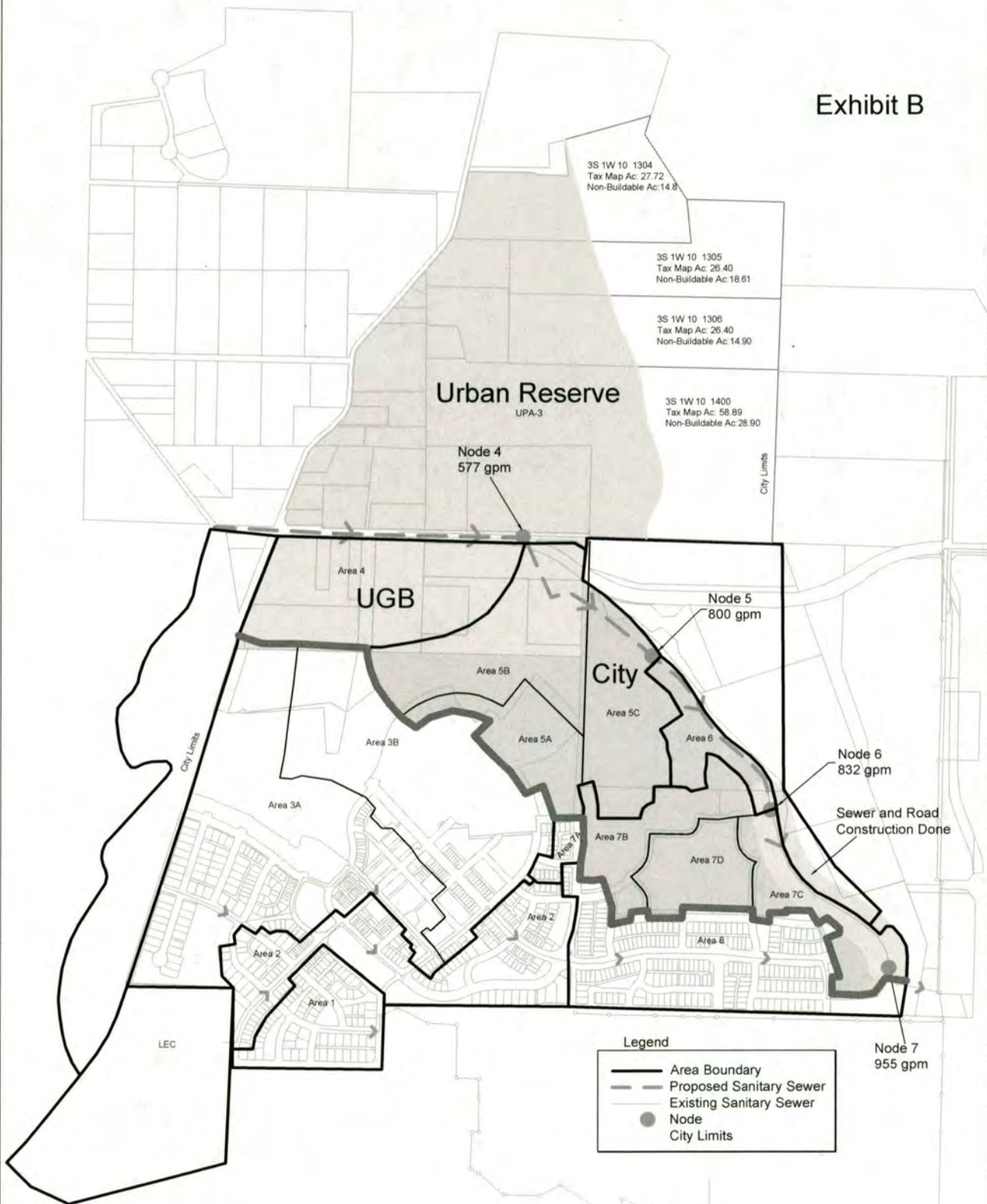
SCALE: 1"=600'

REIMBURSEMENT EXHIBIT
 SECTIONS 10, 14 & 15
 T. 3 S., R. 1 W., W.M.,
 CLACKAMAS COUNTY, OR.

DATE 06/07/12
 DRAWN BY MDS
 CHECKED BY GRA
 REVISIONS
 JOB NO. 1197-011

WESTLAKE
 CONSULTANTS INC.
 ENGINEERING • SURVEYING • PLANNING
 PACIFIC CORPORATE CENTER
 15115 S.W. SEQUOIA PARKWAY, SUITE 150 (503) 884-0852
 TIGARD, OREGON 97224 FAX (503) 884-0157

Exhibit B



Legend

- Area Boundary
- - - Proposed Sanitary Sewer
- Existing Sanitary Sewer
- Node
- City Limits

SUMMARY OF
DEVELOPMENT AGREEMENT HISTORY
FOR VILLEBOIS SAP-E AND REIMBURSEMENT DISTRICT

1. The Villebois Master Plan is a land use plan regulating the development of approximately 500 acres of a planned, mixed use community of internal commercial and a mix of an anticipated 2,600 residential uses, with trails, parks, and open spaces, supported by approximately \$140 million in infrastructure improvements. In approximately June 2004, for the purposes of developing home sites within the Villebois Master Plan area, Matrix Development Co. (Matrix) acquired certain land interests in approximately 150 acres of land east of 110th Street and entered into the 2004 Matrix Development Agreement. This acreage subsequently became known under the Villebois Village Zoning Code as Special Area Plan East (SAP-E). In this regard, Matrix purchased the Kirkendall property, succeeding to their interests in the Matrix Development Agreement; purchased some of the property owned by DeArmond/Fasano and optioned to purchase the balance; purchased some of the property owned by Bischof/Lund and optioned to purchase the balance; purchased a portion of the property owned by Arthur C. and Dee W. Piculell, and purchased development rights to mitigate wetlands on the balance not purchased.
2. In conjunction with the purposes of acquiring the aforementioned property and developing it, Matrix entered into certain loan agreements with Wachovia Bank (now Wells Fargo Bank), which included financing certain of the land purchases and development costs and providing Wachovia with security interests therein.
3. Matrix was authorized to enter into, and participate on behalf of the parties in, the adoption of the land use planning regulations for the properties to implement the Villebois Master Plan, including but not limited to the provisions of Coffee Lake Drive and the Coffee Lake Drive Sewer Line. It was anticipated that Matrix would be developing 655 single family dwelling units.
4. Subsequently, after developing a portion of the southern section of its development, which was known as Special Area Plan East, Preliminary Development Plan 1 (SAP-E, PDP-1), Matrix and its construction entity, Legend Homes, Inc. ("Legend"), filed for Chapter 11 bankruptcy protection in the United States Bankruptcy Court for the District of Oregon, Case No. 08-32798-tmb 11. On May 11, 2010, the Bankruptcy Court adopted the Matrix Second Amended Reorganization Plan ("Reorganization Plan"), effective June 1, 2010. As part of the proceedings, Matrix abandoned its optioned property to the above referenced owners and, through the Reorganization Plan, certain of its other property was transferred to Wells Fargo, as successor in interest of Wachovia Bank, and subsequently assigned to its property development company, Redus OR Lands, LLC ("Redus Property"). Under the Reorganization Plan, Matrix and Legend merged into a reorganized single entity, Legend, and Legend retained the land and development of SAP-E, PDP-1. Prior to the bankruptcy and the abandonment, Matrix had proposed a portion of the balance of the property to be developed as SAP-E, PDP-2, and a map depicting the proposed lot development is marked as **Exhibit 1**, attached hereto and

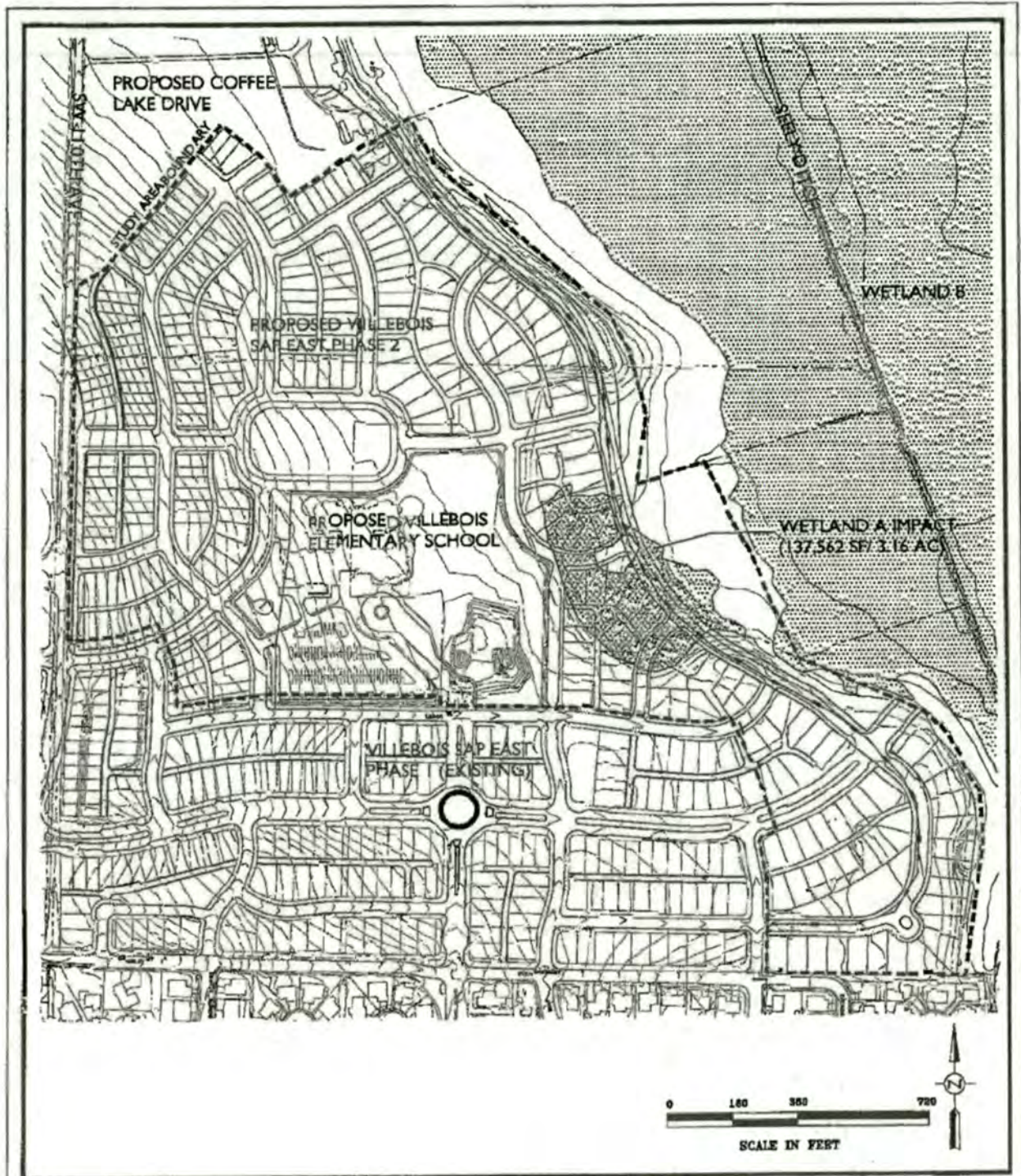
incorporated by reference herein. A map depicting the respective interests after abandonments is marked as **Exhibit 2**, attached hereto and incorporated by reference herein.

5. As part of the Reorganization Plan, Legend was relieved of infrastructure costs associated with SAP-E, PDP-1, including but not limited to Coffee Lake Drive and the Coffee Lake Drive Sewer Line. A separate amending agreement of the Matrix Development Agreement between the City, the URA, and Fasano/DeArmond, and a second separate amending agreement between the City, the URA, and Redus were reached in order for the City and the URA to acquire land from each of the ownerships for the construction of a grade school by the West Linn-Wilsonville School District ("District") within portions of then PDP-1 and PDP-2. See discussion below. Subsequently, Redus obtained City development approval, subject to conditions, of an 88-lot subdivision for land that Redus now owns within PDP-2. This subdivision is now referenced as SAP East, PDP-2 (hereinafter "PDP-2"). Fasano/DeArmond has not yet applied for development approval.
6. The City, the URA, and a third-party developer, Polygon Northwest Company, L.L.C., who anticipates purchasing the Bischof/Lund Property pursuant to an agreement with Bischof/Lund, are in the process of amending the Matrix Development Agreement to provide the framework for development of the Bischof/Lund Property. This land contains 192 lots, as originally proposed by Matrix for the Bischof/Lund Property. Polygon proposes 184 lots rather than 192 due to wetland conditions. This 184 lot subdivision will now be known as SAP East, PDP-3 (hereinafter "PDP-3").
7. The Villebois Master Plan required that a 10-acre site be designated for a grade school and sports fields. The designated land was initially located west of 110th and adjacent to Tooze Road. The School District, in anticipation of building at the Tooze Road site, had passed a bond issue to build the school. Due to the recessionary economic conditions, the housing development needed to support the extension of infrastructure to the Tooze Road site was delayed and therefore funding for the improvements needed for Tooze Road improvements was not available. There was an immediate need for the school to serve over-crowded conditions and also to avoid bond arbitrage issues. Given the aforementioned lack of funds for extending infrastructure to the Tooze Road site, the Villebois Master Plan was amended to provide for a substituted school site with a lower infrastructure cost, at an estimated savings of \$4 million. The URA and the City purchased property from Legend, Redus, and DeArmond/Fasano and combined the purchased parcels into one site. This approximate 10-acre site was made part of an exchange agreement with the School District for an approximate 10-acre site east of the City for recreational purposes. A reduced copy of page 1 of Partition Plat No. 2010, depicting the school site (Parcel 2) and a plan layout of the school site, is marked as **Exhibit 3**, attached hereto and incorporated by reference herein.
8. The District entered into an Infrastructure Development Agreement with the City and the URA. As part of the negotiation with Fasano/DeArmond, Redus, and also Bischof/Lund, the details of the Infrastructure Agreement were shared with all parties. Under the Infrastructure Development Agreement, the District provides certain infrastructure to

serve the school, such as local roads, storm drainage, and sewer lateral lines. Some of this infrastructure was oversized and provides extra capacity, which will benefit the neighboring properties. This entitles the District to reimbursement from the benefitting properties at time of development of the benefitting properties through a Road and Utility Reimbursement District. There was also a need for the school to be tied into the proposed Coffee Lake Drive Sewer Trunk Line, which was on land that Redus acquired in the reorganization. The construction of the trunk line was not funded and would normally be constructed by the developer of the land in conjunction with development under an SDC methodology, with credit for oversizing by the responsible developer. Although Redus had sought and received development approval for the 88 lot PDP-2, Redus was not a developer and did not intend any immediate sale for development until an issue of filling a wetland on its property was permitted. Given the exigent school circumstances, it was determined that there was a need to develop an alternative but equitable funding mechanism.

9. Except for PDP-1, the parties recognized that in order for the remaining properties to develop there was a beneficial need for a segment of the 15-inch sewer trunk line to be constructed within the right of way of the planned Coffee Lake Drive. Coffee Lake Drive traverses the eastern edge of SAP-E, commencing from Barber Street to the south to the planned Villebois Drive to the north. A portion of the sewer trunk line is located within the Coffee Lake Drive right of way, but only the segment from a little south of Barber to the Bischof/Lund southern property line was needed to be constructed for the school to open. This segment of the proposed sewer line was located within the Redus Property, and Redus agreed to provide the necessary easement to the City. As noted above, a different funding approach was needed than had been provided in the Matrix Development Agreement. Thus, the Infrastructure Agreement with the School District, Addendum No. 3 to the Matrix Development Agreement involving Redus and Legend, and the Purchase Agreement with Fasano/DeArmond provided for formation of a Reimbursement District to reimburse a portion of the sewer line cost, with the School District contributing 24% to the costs and to advance the remaining costs. It was subsequently determined that the City would advance the costs and seek the reimbursement. The sewer line was constructed and oversized to benefit certain properties yet to be developed, which would hook into the sewer line upon development. The Benefitted Properties are subject to a pro rata reimbursement for this segment upon development. Under the reimbursement provisions of its code, the City will be seeking reimbursement for the District from the Benefitted Property owners through a Coffee Lake Drive Sewer Reimbursement District.
10. During the process of constructing the sewer line, it was determined that the corresponding segment of Coffee Lake Drive could be constructed at a substantial savings. Redus had sought development approval for PDP-2 to be able to better market the property for sale to a developer. The Development Approval was conditioned, in part, on building this segment of Coffee Lake Drive. To achieve the cost savings, this segment of Coffee Lake Drive was constructed with the sewer line segment. The sewer line, if constructed alone, would need a 15' access strip with a base of approximately 21 feet. This was accounted for in the cost of construction for the sewer line and was not

included in the portion of the Coffee Lake Drive base that is attributed to Redus under its condition of approval. The City intends to seek reimbursement through a separate mechanism, apart from the Coffee Lake Drive Sewer Reimbursement or the Road and Utility District, for the Coffee Lake Drive Road construction attributable to Redus and which the approved conditions required the developer to build.



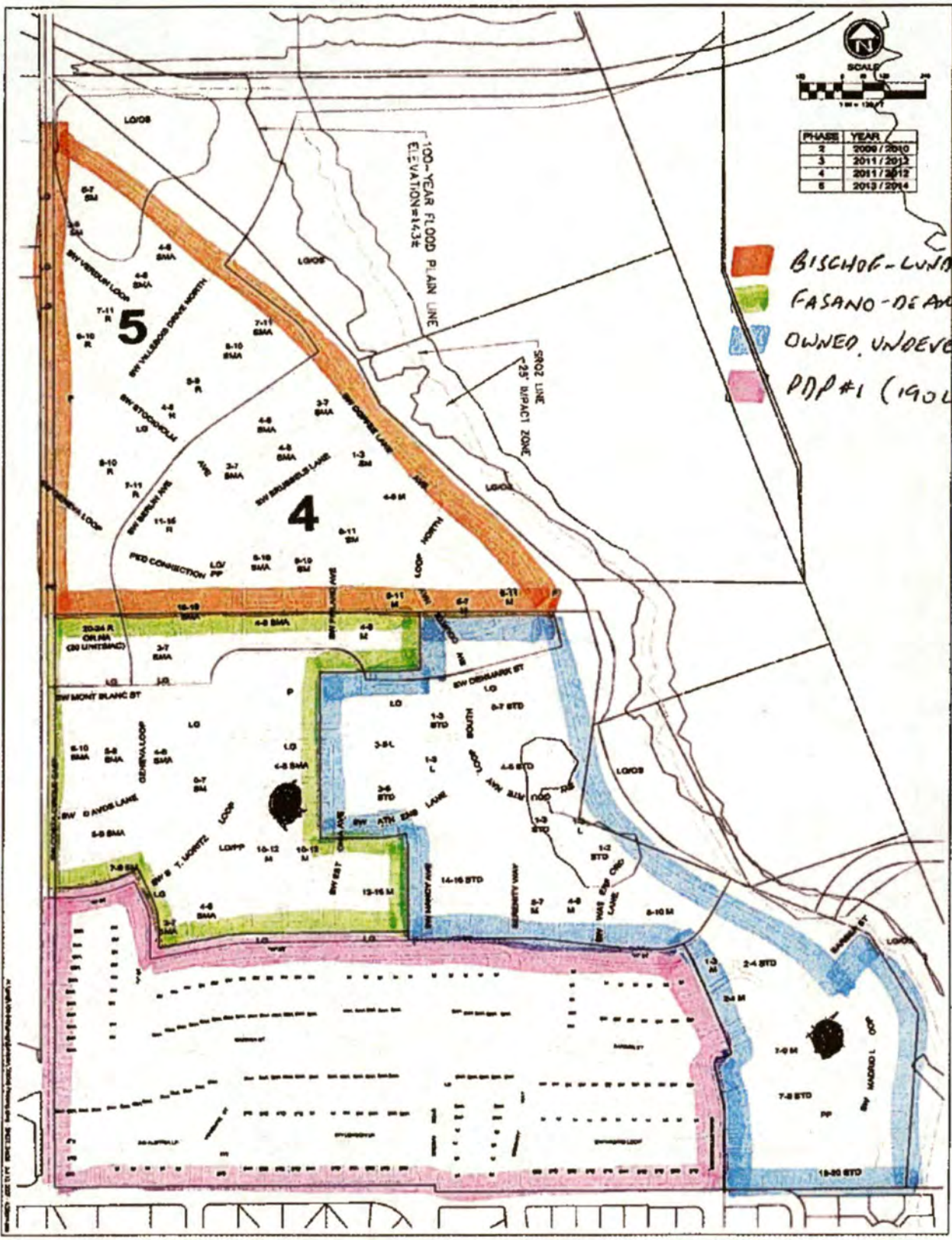
3/19/10
4573



Pacific Habitat Services, Inc.

Proposed site plan and wetland impacts at Villebois SAP East Phase 2 planning area in Wilsonville, Oregon. Provided by City of Wilsonville, 2010.

FIGURE
5



PHASE	YEAR
2	2008 / 2010
3	2011 / 2012
4	2013 / 2014
5	2015 / 2016

- BISCHOP-LUNA
- FASANO-DEAMOND
- OWNED, UNDEVELOPED
- PDP#1 (190 LOTS)

PROJECT NO. 100
DATE: NOVEMBER 2011

PHASING
PLAN

VILLEBOIS
SAP EAST

ALPHA COMMUNIT DEVELOPMENT
7500 SW 44th Ave
Miami, FL 33155
305-425-1134
www.alpha-comm.com

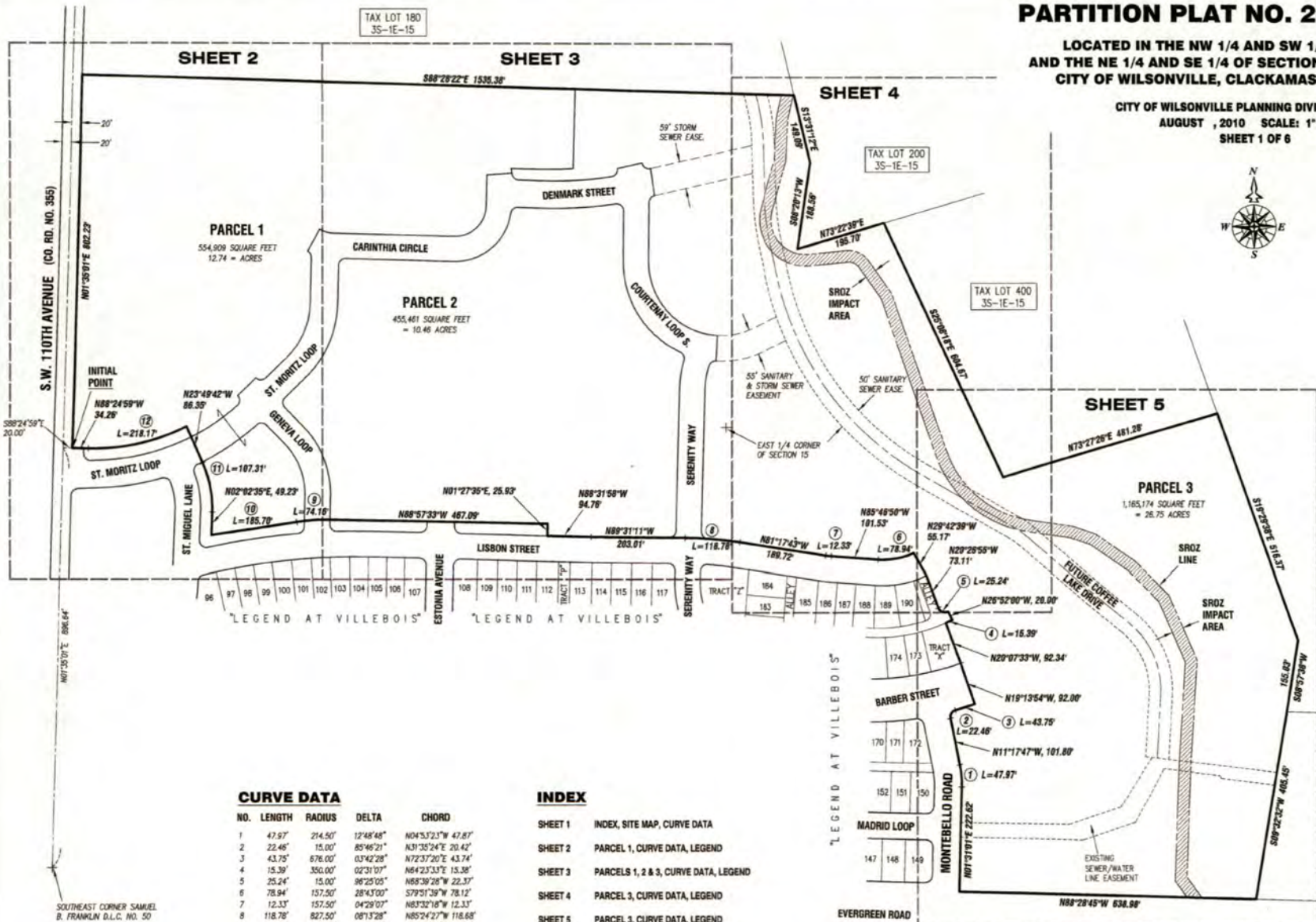


EXHIBIT 2

PARTITION PLAT NO. 2010 -

LOCATED IN THE NW 1/4 AND SW 1/4 OF SECTION 14,
AND THE NE 1/4 AND SE 1/4 OF SECTION 15, T.3S., R.1W., W.M.
CITY OF WILSONVILLE, CLACKAMAS COUNTY, OREGON

CITY OF WILSONVILLE PLANNING DIVISION FILE NO. _____
AUGUST, 2010 SCALE: 1" = 150'
SHEET 1 OF 6



CURVE DATA

NO.	LENGTH	RADIUS	DELTA	CHORD
1	47.97	214.50	12°48'48"	N04°32'23"W 47.81'
2	22.46	15.00	85°46'21"	N31°35'24"E 20.42'
3	43.75	676.00	03°42'28"	N72°37'20"E 43.74'
4	15.39	350.00	02°31'01"	N84°23'33"E 15.39'
5	25.24	15.00	96°25'05"	N68°39'28"W 22.37'
6	78.94	157.50	28°43'00"	S79°51'39"W 78.12'
7	12.33	157.50	04°29'07"	N83°32'18"W 12.33'
8	118.78	827.50	08°13'28"	N85°24'27"W 118.68'
9	74.16	416.00	10°12'46"	S85°56'03"W 74.06'
10	185.70	10289.93	01°02'02"	S81°20'40"W 185.70'
11	107.31	257.65	25°52'18"	N103°33'34"W 106.40'
12	218.17	435.50	28°42'12"	S77°35'56"W 215.90'

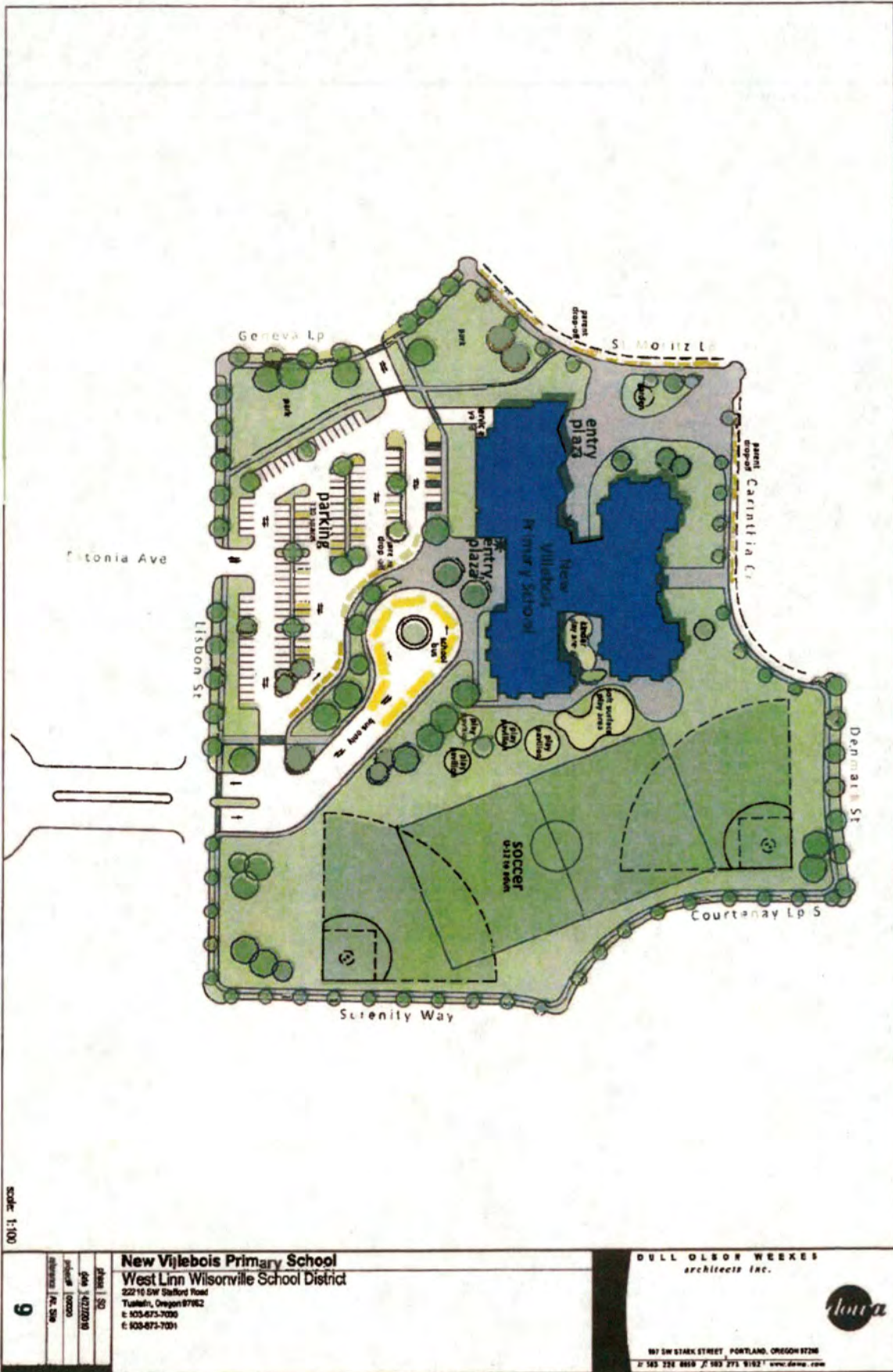
INDEX

- SHEET 1 INDEX, SITE MAP, CURVE DATA
- SHEET 2 PARCEL 1, CURVE DATA, LEGEND
- SHEET 3 PARCELS 1, 2 & 3, CURVE DATA, LEGEND
- SHEET 4 PARCEL 3, CURVE DATA, LEGEND
- SHEET 5 PARCEL 3, CURVE DATA, LEGEND
- SHEET 6 APPROVALS, SURVEYOR'S CERTIFICATE, NARRATIVE DECLARATION, ACKNOWLEDGMENTS, RESTRICTIONS

REGISTERED PROFESSIONAL LAND SURVEYOR
Michael A. Rademacher
OREGON
JULY 16, 1987
MICHAEL A. RADEMACHER
2303

ENGINEER/SURVEYOR
COMPASS ENGINEERING
4105 INTERNATIONAL WAY, SUITE 501
MILWAUKIE, OREGON 97222
PHONE: 503-653-9093
6788 Part.dwg (MMM)
JOB NO. 6788 (PARTITION)

DATE OF SIGNATURE: 9-9-10
EXPIRES: 12/31/2010



scale: 1:100

9	sheet: 502
	date: 1/27/2010
	author: [unclear]
	revision: [unclear]

New Vijebois Primary School
 West Linn Wilsonville School District
 22210 SW Sheford Road
 Tualatin, Oregon 97062
 t: 503-673-7000
 f: 503-673-7001

DULL OLSON WEEKES
 architects inc.



107 SW STARK STREET, PORTLAND, OREGON 97206
 P: 503 226 8616 / F: 503 275 6162 / www.dow.com

King, Sandy

From: Mende, Eric
Sent: Friday, August 03, 2012 11:31 AM
To: Cosgrove, Bryan; Kohlhoff, Mike; Neamtzu, Chris; Kraushaar, Nancy; Adams, Steve
Subject: Charbonneau pipeline issue
Attachments: Talking Points for New Charbonneau Pipeline.docx
Importance: High

All:

Given the potential political ramifications of a pipeline under the river to Charbonneau (as recommended by the Water System Master Plan) and the likelihood of public comment at the hearing on August 20th, I've put together the following talking points for your information / use. Please feel free to share this with any/all interested parties. I'm fully prepared to discuss this (from the technical side...), as is our consultant.

I'll leave it to Bryan's discretion whether we should meet to discuss this more fully, or I can more fully brief any of you as needed.

Thanks

Eric

Eric Mende PE, CFM

Deputy City Engineer
City of Wilsonville
29799 SW Town Center Loop E
Wilsonville, Oregon 97070
(503) 570-1538 direct

Disclosure Notice: Messages to and from this e-mail address may be subject to the Oregon Public Records Law.

Talking Points for New Charbonneau Pipeline (Water Master Plan Recommendation)

- The purpose of the proposed pipeline is to provide operational redundancy (looping) and ensure adequate fire flow under emergency conditions, not to promote development.
 - The Master Plan assumed zero water demand growth south of the river, consistent with Metro UGB and Rural Reserve designations and the City Comprehensive Plan.
 - System improvements in Charbonneau were identified and selected with the intent of providing Charbonneau with the same level of service as any other area of the City.
 - Criteria for system redundancy (looping) and adequate fire flow are designed expressly to meet Comp Plan Goal 3.1 (Commitment to provide adequate facilities)

- Existing Infrastructure includes:
 - 14" "dead end" Pipeline across Boone Bridge (capacity of 2500 gpm +/-)
 - 0.75 MG buried concrete tank and booster pumps
 - Two groundwater wells – total capacity of 300 gpm

- Existing 14" pipe under the Boone Bridge very likely damaged by a large earthquake.
- Charbonneau Reservoir (buried concrete tank) is 35 years old, does not meet current seismic code and fails during a large earthquake. (magnitude 6.7 local, 8.3 coastal)
 - **If the existing pipeline and tank both fail, Charbonneau will be without an adequate water supply to fight fires: 300 gpm from wells vs. 1500 gpm required.**

- There are only two viable Alternatives to ensure adequate emergency fire flow:
 - Replace tank
 - Redundant Pipeline under Willamette
 - Capital costs for either option are about the same (\$2.3M) but the pipeline has much lower annual operating costs, giving it the best benefit/cost ratio.
 - Buried pipeline is also much less susceptible to earthquake damage.

- Proposed pipe was sized to provide roughly the same capacity as the existing pipe – about 2500 gpm. A smaller pipe is an option. A 12" can provide adequate fire flow of 1500 gpm.

- The proposed pipeline is not a "critical" deficiency. The existing facilities are adequate for now (assuming no earthquake). The Master Plan CIP list shows this project as a 2017 to 2022 project.

City of Wilsonville

**August 20, 2012
City Council Meeting
Action Minutes**

DATE: AUGUST 20, 2012
LOCATION: 29799 SW TOWN CENTER LOOP EAST, WILSONVILLE, OR
TIME START: 5:00 P.M. TIME END: 9:50 P.M.

ATTENDANCE LOG

COUNCILORS	STAFF	STAFF	STAFF
Mayor Knapp	Brian Cosgrove	Chris Neamtzu	Delora Kerber
Council President Núñez	Mike Kohlhoff	Delora Kerber	Scott Simonton
Councilor Goddard	Jeanna Troha	Mark Ottenad	Pat Duke
Councilor Starr	Sandy King	Dan Knoll	Joanne Ossanna
	Nancy Kraushaar	Eric Mende	Kristen Retherford
	Steve Adams		

AGENDA	ACTIONS
WORK SESSION	
Concerns <ol style="list-style-type: none"> 1. When will the Advance Road site be built for active sports fields? Speed up Advance road fields and review the Parks & Rec Master Plan. 2. Would like to schedule meeting with Parks & Rec Board 3. 	Staff will review the Parks and Rec Master Plan for timing of new sport fields, look at priorities and funding and report back to Council.
Boeckman Road Update -- Staff explained the repair estimates for the repair of the roadway would be more than originally estimated.	
Matrix Development Addendum 4 – Staff explained the reasons for the addendum, and provided a brief history of the complex many partnered development agreements.	
Resolution 2350 – Reimbursement District	Staff asked that the public hearing be held, and then continue the action to the September 17, 2012 Council meeting.
Review of Agenda <ul style="list-style-type: none"> • Storm Water Master Plan does not have rate impacts, and how will the CIP impact rates 	The CIP in the Master Plan are maintenance of the system and updates to meet current code.
REGULAR MEETING	
Communications <ul style="list-style-type: none"> • Tim Woodley West Linn – Wilsonville School District presented a PowerPoint showing the construction of the new Lowrie Primary School and the safe routes to school plan. 	

Consent Agenda • Resolution No. 2375 – SMART bus purchase	Approved 4-0.
New Business 1. Resolution No. 2376 – adopting the Economic Development Strategy 2. Resolution No. 2377 – Matrix Development Addendum No. 4. 3. Resolution No. 2378 – Boeckman Road Bridge Repairs Phase 1 bid award	Adopted 4-0. Adopted 4-0 subject to Legal Dept. working out the development fee Adopted 4-0
Public Hearing 1. Ordinance No. 707- first reading Updated Water System Master Plan 2. Resolution No. 2350 – Establishment of a Reimbursement District	Adopted on first reading 4-0 modifying language in 3.1.5.b to add the phrase “adequate but not excessive capacity” and allowing staff time to reply to the comments submitted by Mr. Wallulis, and for Mr. Wallulis to respond. Council held the public hearing, heard testimony and continued the hearing to the September 17, 2012 Council meeting.
City Manager’s Business	Mr. Cosgrove provided a recap of the meeting.
Legal Business	There was no report.
URBAN RENEWAL AGENCY MEETING	
Consent Agenda 1. URA Resolution No. 221 – approving Addendum 4 to the Matrix Development Agreement 2. Minutes of May 21, 2012 and June 4, 2012	Approved 4-0.

RECORDED BY: _____ SCK _____

City of Wilsonville
August 20, 2012 City Council Meeting

2376
general

SPEAKER CARD

NAME: Steve Gilmore - Wilsonville Chamber

ADDRESS: Po Box 3737

TELEPHONE: 503-682-0411 E-MAIL Steve@WilsonvilleChamber.com

AGENDA ITEM YOU WANT TO ADDRESS: Economic Development

Please limit your comments to 3 minutes. Thank you.

City of Wilsonville
August 20, 2012 City Council Meeting

707
Semi-Retired Engineer -
Submitting documents for record.

SPEAKER CARD

NAME: Stanley Wallis

ADDRESS: 7725 SW Village Greens Circle

TELEPHONE: 503-694-¹³⁰⁹~~1309~~ E-MAIL swallis@gmail.com

AGENDA ITEM YOU WANT TO ADDRESS: Water Plan

Please limit your comments to 3 minutes. Thank you.

2350

City of Wilsonville
August 20, 2012 City Council Meeting

SPEAKER CARD

NAME: JIM LANGE

ADDRESS: 13445 SW 110th AVENUE TIGARD OR 97223

TELEPHONE: 503/828-5055 E-MAIL jim@pacific-community.com

AGENDA ITEM YOU WANT TO ADDRESS: _____
RESOLUTION 2350

Please limit your comments to 3 minutes. Thank you.

City of Wilsonville
August 20, 2012 City Council Meeting

2350

~~general~~

SPEAKER CARD

NAME: JAY NIMS

ADDRESS: 11700 SW TOOLE RD Wilsonville OR

TELEPHONE: 503-682-0600 E-MAIL jaynims@frontier.com

AGENDA ITEM YOU WANT TO ADDRESS: Coffee Lake Drive
Sewer Line

Please limit your comments to 3 minutes. Thank you.

City of Wilsonville
 City Council Meeting
 August 20, 2012 Sign In Sheet

Name	Mailing Address
Veru Wise	
JAY Nims	11700 SW TOOLE RD
Tonia Totten	11681 SW TOOLE RD
Tim Woodley - WLWV	2755 SW Borland Rd, Tualatin
Jim LANGE	13445 SW 110th AVE, TIGARD 97223
Steve Gilmer	PO Box 3737, Wilsonville OR 97072
Stanley Wallulis	7225 SW Village Greens Circle 9700
Susanna & Tony Holt	7670 SW Village Greens Circle
Cindy Hagen	
Lime Springall	7710 SW Roanoke Dr Wilsonville
Julie Fitzgerald	11812 SW Greenbelle St. Wilsonville
Robert R. Ruffo	11812 SW Greenbelle St. Wilsonville