



# Public Works Annual Report 2010



# City Officials and Administration

2010

## City Officials

### Mayor

Janet Taylor

### City Council

Chuck Bennett, Ward 1  
Laura Tesler, Ward 2  
Brad Nanke, Ward 3  
T.J. Sullivan, Ward 4  
Diana Dickey, Ward 5  
Bruce Rogers, Ward 6  
Bob Cannon, Ward 7  
Dan Clem, Ward 8

### Citizen Budget Committee

Larry George  
Geoff James  
Terrence McEvelly  
John Reich  
JB Summers  
James Vick  
John D. Whitney

### Municipal Judge

Jane Aiken

## City Administration

### City Manager

Linda Norris

### Deputy City Manager

Sean O'Day

### Administrative Services Director

Tony Mounts

### City Attorney

Randall Tosh

### Community Development Director

Vickie Hardin Woods

### Fire Chief

Mike Niblock

### Human Resources Director

Constance L. Munnell

### Information Technology/ Facilities Services Director

Ida Salazar

### Police Chief

Gerald F. Moore

### Public Works Director

Peter Fernandez

### Urban Development Director

Rick Scott

# Public Works Management



Peter Fernandez, P.E.,  
Public Works Director



Nitin Joshi, Water and  
Environmental Resources  
Manager



Robert D. Chandler, Ph.D.,  
P.E., Assistant Public Works  
Director



Scott Branch, Pumps and  
Controls



Glenn J. Davis, P.E., Chief  
Development Services  
Engineer



Sam Kidd, Stormwater and  
Wastewater Collections  
Services Manager



James L. Bonnet, P.E., City  
Engineer



Sophia Hobet, Water  
Services Manager



Francis Kessler, Operations  
Division Manager and  
AIC Wastewater Treatment  
Plant Services Manager



Mark Bechtel, AICP,  
Parks and Transportation  
Services Manager



Deborah Hildebrandt,  
Customer Services Manager



# Message from the Public Works Director

## Major Accomplishments FY 2009-10

- *Completed our second full year of construction projects funded by the Streets and Bridges Bond*
- *Completed Bryan Johnston Park in South Salem*
- *Completed the condition inspections of all 714 miles of City sidewalks*
- *Council adopted the Stormwater Utility in December 2010. The utility is scheduled to start its phased implementation in January 2013*
- *Completed restoration of 166 acres of Minto-Brown Island Park in cooperation with the federal Natural Resources Conservation Service*

At a professional business meeting held not long ago, one of the members described an experience he recently had with Salem's Public Works Department. His home irrigation system had developed a leak while he was on vacation and he was very concerned about the extremely high water bill he expected to receive. The businessman noted that he had a friend in another Oregon city (which I will not name) who had experienced a similar situation involving a major leak in his irrigation system and his bill exceeded \$1,000. However, this businessman talked with one of our Customer Service representatives and was both surprised and grateful that his bill was adjusted downward so that it would more closely reflect his typical average water usage.

Although one could argue that we would be well within our rights to charge this customer for the water we provided, Salem Public Works allows for such adjustments—authorized by the City Council in *Salem Revised Code 70.290*—for several reasons. First, for most of our customers the water they receive during the winter months is used to determine their sewer bill for the year. It would be unfair to excessively charge any customer with an unreasonably high sewer bill for an entire year as a result of a one-time leak in their water system. Second, we believe most of our customers are very conscientious about water use and conservation, which is one reason why we have not had to embark on new major capital projects to expand our water delivery system. We appreciate the help our customers provide in this regard and it seems proper that we, in return, make adjustments in their bill when the unexpected happens. Finally, this program reflects the practices and policies of Salem Public Works to be *at your service*. More than just our customers, you are our partners in our business enterprise that provides water, wastewater, stormwater, transportation, parks, and recreation services to our community.

It is my pleasure to present to you the 2010 City of Salem Public Works Department Annual Report. This past year has been a typically busy one for us. We have experienced a steady work load and constructed many new facilities for the community. We have many accomplishments of which we are proud. Highlights include:

- *Completing our second full year of construction projects funded by the Streets and Bridges Bond. Notable this past year was our award-winning repaving of downtown Commercial Street NE/SE and repaving Commercial Street SE south of Mission Street. All of*



the bond-funded projects undertaken to date have been completed on time and below budget. Many more projects are in the bidding, right-of-way acquisition, or design phases. Our schedule calls for construction projects to continue through the end of 2016.

- Bryan Johnston Park was completed in South Salem. Construction of this park is the culmination of ten years of coordinated planning and construction for this property, which was originally acquired for street, water, and park uses. Earlier phases of work included the construction of Lone Oak Reservoir and pump station, and a segment of Mildred Lane SE.
- This year also marked a major milestone for the sidewalk program. We completed the condition inspection of all 714 miles of City sidewalks. In 2010, City crews and contractors constructed (or reconstructed) 492 corner curb ramps to meet the latest Americans with Disability Act standards and we continue to make priority sidewalk repairs around town. Our proposed budget for Fiscal Year 2011-12 includes \$615,000 for more sidewalk repair projects.
- After two years of dedicated staff work and many hours of public outreach and lively interactions, the Council adopted the Stormwater Utility in December 2010. The utility is scheduled to start its phased implementation in January 2013. This is a critically important financial component to the Water and Sewer Fund, as federal and state stormwater runoff requirements continue to be more stringent. On December 12, 2010, The Statesman Journal commented on the approved stormwater utility, noting that, "Overall, taxpayers are the winner because, in many ways, the city's (sic) handling of this issue has exemplified local government at its best."
- The restoration of 166 acres of Minto-Brown Island Park was completed in cooperation with the federal Natural Resources Conservation Service. This was one of the largest American Recovery and Reinvestment Act-funded projects the City undertook. The project protects high value Willamette River floodplain areas and restores native vegetation and wildlife habitat. This project will increase the quality of passive recreation opportunities at the park.

As a result of significant cost-savings actions taken over the past three years, the Public Works Department is still able to operate and maintain our complex systems in a safe and reliable manner, meet our many regulatory obligations, implement our essential programs, and fund our most critical capital projects. As a department, we have approximately 30 fewer staff now than we did in 2008 and our water and sewer rates are being held steady for 2011. However, it is important that you, our partners, recognize that our costs are rising faster than our rates and we are now balancing our budget primarily by delaying major projects and deferring critical maintenance. At some point in the near future, we will, together, have to decide whether to increase our funding to make up for lost actions, or choose to accept a decrease in the reliability and levels of service that you have come to expect and which we currently provide to our customers.

Finally, and most importantly, as you read our Annual Report, I ask you to remember that the many accomplishments and successes of the Public Works Department are a direct result of the dedicated men and women who serve you. From the newly hired member of a field crew to the Director's Office, Public Works is serving our community every day, every hour of the day. We are at your service.

# Administration

## Major Accomplishments FY 2009-10

- *Developed the proposal to form a stormwater utility and establish a separate stormwater fee and conducted public outreach on the proposed stormwater utility at more than 50 venues.*
- *Obtained City Council approval to create a stormwater utility.*
- *Completed public outreach in support of major Public Works capital projects.*
- *Completed drafting Salem's Water Management and Conservation Plan and obtained approval from Oregon Water Resources Department.*
- *Completed the process leading to an approved Compatible Use Agreement between the City and the Natural Resource Conservation Service, facilitating restoration of 170 acres of Minto-Brown Island Park.*
- *Initiated process leading to acquisition of additional 30 acres of land toward developing a new 57.5 acre urban park.*
- *Completed analysis of wastewater system performance during real-life storm events comparable to five-year/24-hour theoretical design storm events.*

The Administrative Division oversees permitting processes for development projects that involve public infrastructure (see Development Services in this report); conducts utility planning for water, wastewater, and stormwater services; provides public information and outreach for Public Works projects and programs; supports departmental and citywide emergency planning and response; facilitates watershed coordination in the North Santiam River; implements the City's Environmental Action Plan and Riparian Action Plan; and much more. Prior to a major reorganization in August 2010, this division was also responsible for coordinating the renewal process for Salem's Municipal Stormwater Discharge Permit with Oregon Department of Environmental Quality, managing the wetlands mitigation program, and leading the Minto-Brown Park Floodplain Easement Restoration Project. Led by the Assistant Director of Public Works, there are currently ten FTE in the division, with an annual budget of approximately \$2 million.

## Responsibilities

The primary mission of the Planning Section is to be a service provider to Public Works. Its unified work program includes updating the Water Management and Conservation Plan; developing Emergency Operating Procedures related to risks to the City's water supply; reviewing and updating utility Master Plans; coordinating an integrated watershed planning approach in the North Santiam River; completing stormwater-related ordinances and administrative rules; implementing the stormwater utility; developing a Community Forest Strategic Plan; and other initiatives. Transportation planning will be incorporated into the Planning Section in July 2011, and will include among its activities: bicycle and pedestrian planning; Transportation System Plan amendments; the Salem River Crossing project; and the Central Salem Mobility Study.

An example of the importance of long-term planning and the need to update long-term plans, is illustrated in the

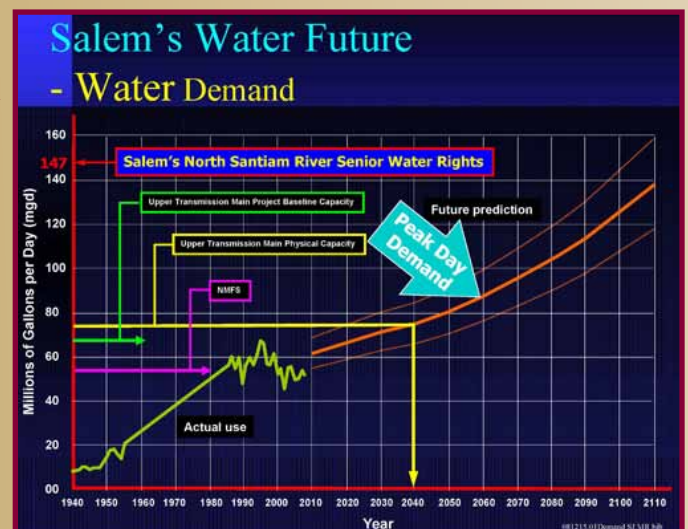
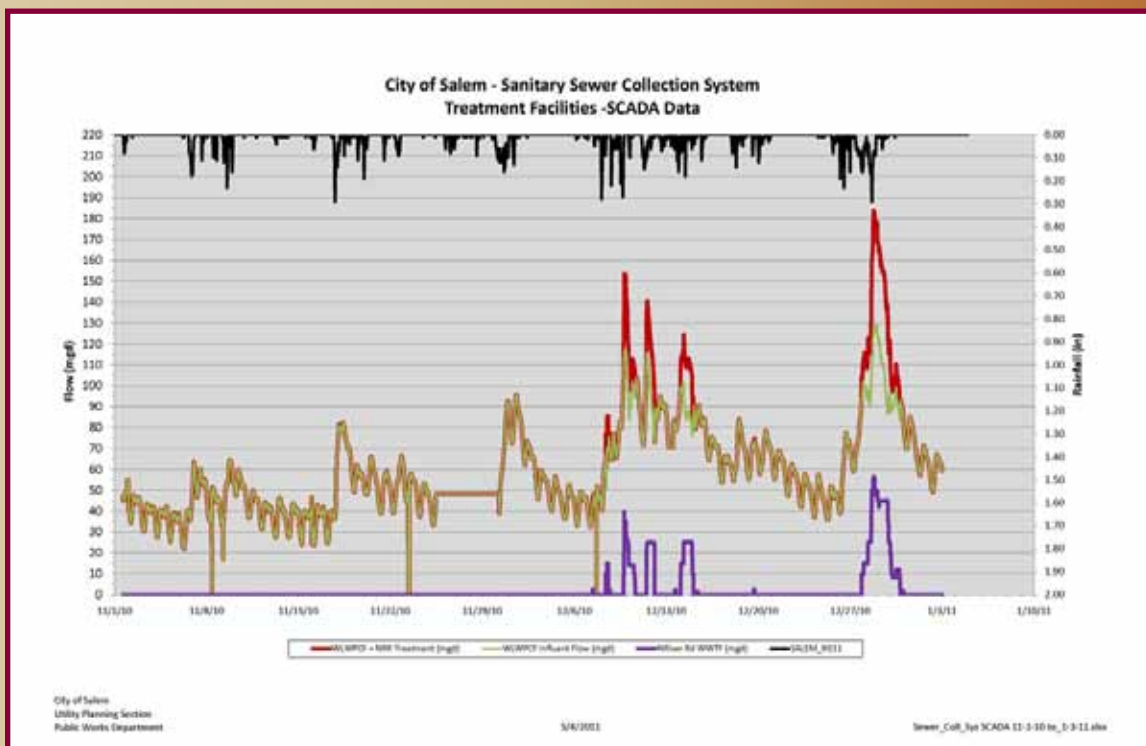




figure at right, which shows how predictions for water demand have changed between 1994 and 2010. In 1994, it was predicted that by 2000, Salem would need to provide approximately 80 million gallons per day (mgd) to its water customers. This estimate was revised in 1998, when it was predicted that Salem’s water demand would not reach 80 mgd until 2010. Currently, as a result of changes in industrial demand and successful implementation of water conservation measures, it is estimated that Salem’s water demand will not reach 80 mgd until 2050. This type of analysis is critical in determining when major capital projects are needed to expand our water supply capacity so Salem Public Works can continue to provide reliable water service to our customers.

The graph below is an example of the type of analysis conducted to evaluate the performance of the City’s wastewater system. The graph shows various parameters during the period of November 1, 2010, through January 3, 2011. Rainfall, as measured at one of Salem’s rain gauges (RG 11), is shown along the top of the graph with units shown in inches along the right-hand side. The green line represents the rate of wastewater flow treated at the City’s main treatment plant, the Willow Lake Water Pollution Control Facility (WLWPCF). The purple line shows the additional flows that were treated at the City’s Wastewater Treatment Facility (WWTF) at North River Road (NRR). The North River Road plant is only activated when necessary to augment the treatment capacity at the WLWPCF. Total treated wastewater flow is shown in red. Wastewater flows are measured in units of million gallons per day (mgd) as shown on the left-hand side of the graph. Two storm events in December resulted in the activation of the NRR WWTF. Analyses like this are being used to modify operating procedures in the City’s wastewater system and evaluate the need to expand our wastewater treatment capacity.



# Development Services Section

## Major Accomplishments FY 2009-10

### *Development Projects:*

- *Four new schools for Salem/Keizer School District were in development phases*
- *Infrastructure construction of Lindberg Green Subdivision, a phase of the sustainable project at the former Fairview Training Center, was nearly completed*
- *Infrastructure improvements for Mill Creek Corporate Center Phase 1A*

The Development Services Section is the primary liaison between the development community and Public Works staff for land development and construction projects. The section ensures that development projects comply with local regulations related to public works infrastructure. Staff coordinates with project stakeholders throughout each phase of development from initial speculation to the end of construction.

Development Services staff consists of seven engineers, analysts, and technicians who specialize in analyzing regulatory requirements and gathering input from numerous technical specialists throughout the department for each development project. The section provides a public counter at City Hall for permits, public information, maps, and other assistance to stakeholders of development projects.

## Development Projects

- Four new schools for Salem/Keizer School District were in a variety of development phases in 2010:
  - ◆ An elementary school and a middle school along Orchard Heights Road NW. These projects provided improvements to the transportation system and provided pedestrian safety improvements within Orchard Heights Road NW. Construction permits were issued in the summer of 2010, and both schools are scheduled to be open for the fall 2011 school year.



*West Salem Elementary School.*



*West Salem Middle School.*

- ◆ An elementary school at the former Battle Creek Golf Course at Madras Avenue and Commercial Street. This project improves the stormwater system and provides transportation improvements including a wider Madras/Commercial intersection. The project completed its land use approvals in fall 2010.

- ◆ An elementary school between Walker Road SE and Cordon Road SE, north of Sunnyview Road SE in Marion County. This project involves substantial coordination between Marion County and City staff. The project was in the land use approval process in Marion County and submitted an annexation application in November 2010.

- Lindberg Green Subdivision, a phase of the sustainable project at the former Fairview Training Center, had nearly completed infrastructure construction by the end of 2010. This project includes Heritage School and, through cooperation with Simpson Hills, LLC, to the south, provided an important water main connection through the project site.
- Infrastructure improvements for Mill Creek Corporate Center Phase 1A were under construction in fall 2010 in anticipation of future development projects within the industrial subdivision.



Baxter Road Apartments, 1668 Baxter Road SE.



Vista Commercial Building, 2993 Commercial Street SE.

## Transition of Work Assignments

In coordination with other Public Works staff work groups, Development Services has undergone a major shift in its work assignments related to development projects. The emphasis of Development Services work assignments has transitioned to two primary areas: (1) managing communication between developer representatives and Public Works staff; and (2) administering compliance with local regulations.

Once fully implemented, developers will experience a more efficient and predictable development process throughout all phases of a project.

## Floodplain Management and Community Rating System

Development Services is responsible for ensuring the City is in compliance with the National Flood Insurance Program administered by the Federal Emergency Management Agency (FEMA). Our section has successfully maintained the City's Class 7 rating in FEMA's Community Rating System, which automatically entitles all Salem citizens to a 15 percent reduction in their flood insurance premiums.

## Planned for FY 2011-12

- *FY 2011-12 promises to be a year of transition as staff implement new assignments, procedures, standards, and codes.*
- *Staff's policy is to meet a maximum turnaround time of ten working days for most applications. These quick responses are essential for moving development projects through the regulatory process and onto completion.*
- *The City's floodplain management program is scheduled for an audit by FEMA in 2011. Staff hopes to not only meet minimum requirements, but also to make improvements that can further reduce flood insurance premiums for Salem residents for years to come.*

# Engineering Division

## Major Construction Complete FY 2009-10

- *Downtown Street Resurfacing of Commercial Street and Church Street*
- *ARRA Resurfacing Projects*
- *Commercial Street SE Resurfacing*
- *Cordon Road Pump Station Gravity Sewer Main*
- *Capitol Street Bridge*
- *Mimosa/Douglas Water Pump Station Replacement*
- *17<sup>th</sup> Street NE at D Street NE and C Street NE Traffic Signals*
- *Commercial Street SE Traffic Signal Interconnect*
- *Bryan Johnston (formerly Lone Oak) Park Improvements*

The Engineering Division is responsible for providing Engineering and Technical Services to the Public Works Department and other City departments. A dedicated staff of 49 provides services ranging from project management and delivery, Capital Improvement Plan development, management and implementation of Design Standards and Standard Construction Specifications, Geographic Information System (GIS) and records services, permitted public infrastructure project management, facilities and maintenance engineering, and surveying services.



*Capitol Street bridge before.*



*Capitol Street bridge after.*

## Projects Designed in 2010; Construction in 2011

- Fairway Avenue Bridge Replacement
- Pedestrian Safety Crossing/Traffic Calming—Phase 1
- Downtown Paving 2011 (Liberty and High Streets)



*Commercial Street pavement RR.*



*Pedestrian safety crossing.*

- Kuebler Boulevard Road Widening—Lone Oak Road SE to Commercial Street SE
- Windsor Island Road NW



*Kuebler Boulevard road widening.*



*Commercial Street curb extensions.*

- Greenbriar Pump Station
- Waldo/Wildwind Sanitary Sewer Replacement
- Cottage Street Bridge at Mill Creek—Scour Protection



*Cottage Bridge stream restoration.*



- Sunnyview Avenue NE at 45th Avenue NE Traffic Signal
- Railroad Safety Improvements
- Leffelle Parking Lot Improvements
- Kuebler Boulevard SE Resurfacing (36th Avenue SE to Turner Road SE)
- Hawthorne Avenue Resurfacing
- High Street Water Line
- Traffic Signal Interconnect Loop and Monitoring Cameras
- Pringle Parkway SE Traffic Signal Interconnect



*East Belmont Sewer Rehabilitation.*

## Statistics for FY 2009-10

### *CIP Construction Projects*

- Budget \$67,700,000
- Current construction projects (\$13,961,155)
- Rehabilitated 14 miles of pavement
- Constructed 160 ADA ramps
- Replaced 9,423 feet of water line
- Replaced 6,251 feet of sewer line
- Replaced 32 sewer laterals
- Awarded consultant contracts: \$3,301,751

### *Development Projects*

- Performed 2,026 inspections
- Reviewed 23 plats

## Significant Projects Currently in the Design Phase

- Boone Road Pump Station
- College Reservoir
- Aumsville Highway Street Improvements
- Eola Drive NW Safety Improvements
- Willow Lake Activated Sludge Diffuser Rehabilitation
- Battle Creek Park Collector Street
- Mill Creek Corporate Center Water Line Loop
- Broadway Street NE at Liberty Street NE Intersection Improvements
- Glen Creek Road NW at Wallace Road NW Intersection
- Kale Road Park Improvements
- Market Street NE at Lancaster Drive NE Widening
- Commercial Street SE Bridge over Pringle Creek
- Hawthorne/Hyacinth Avenues NE—Corridor Improvements
- Market Street NE/Swegle Road NE—Corridor Improvements
- Lancaster Drive NE—Sunnyview Road NE to Center Street NE
- State Street—Front Street to 12th Street NE and Court Street NE—Front Street NE to 12th Street NE
- Eola Drive NW—Kingwood Drive NW to Gehlar Road NW

## Highlights

- **Streets and Bridges Bond**—The \$100 million program approved by Salem voters in 2008 continues with great success. Project design was in progress on 16 congestion relief, pavement rehabilitation,



Commercial Street NE/SE—Marion Street NE to Ferry Street SE.



Commercial Street SE pavement RR.

## Key Development Projects

- *Mill Creek Corporate Center—Phase 1A Improvements*
- *Oregon State Hospital—Salem Improvements*
- *Home Depot Regional Distribution Center*
- *West Salem School Site Development*
- *Capitol Toyota Site near the Salem Parkway*
- *Continued development in the Sustainable Fairview area*



*Cordon Road Pump Station Gravity Sewer Main.*

bridge replacement, and safety improvement projects in 2010. Projects completed include the Downtown Street Resurfacing of Commercial Street NE/SE and Church Street NE/SE, Commercial Street SE Resurfacing, and 17<sup>th</sup> Street NE at D Street NE and C Street NE Traffic Signals.

- **Capitol Street Bridge**—Constructed a new single span, reinforced concrete bridge to replace the old weight-restricted bridge. Approximately 90 percent of the project costs was funded with federal funds.
- **Bryan Johnston (formerly Lone Oak) Park Improvements**—Completed construction for a new eight-acre neighborhood park in the South Salem Lone Oak area. Improvements included a fully equipped playground, small basketball court, paved and soft pathways, picnic and lawn areas, benches, and ten street-side parking spaces.
- **Willow Lake Mutual Agreement and Order (MAO) Program**—The City complied with the final requirement for submitting an evaluation of the effectiveness of control measures to eliminate overflows to all streams as required by the MAO with DEQ. This final task was required by December 31, 2011. The program was completed at a cost of \$189M. The Engineering Division delivered the six major projects that comprised this program.
- **Geren Island Water Treatment Filter Sand Cleaning Process**—Engineering staff is currently in the process of procuring new sand cleaning equipment and associated site improvements. This \$800,000 investment will save millions of dollars in replacement sand.



*Bryan Johnston (formerly Lone Oak) Park improvements.*



*Geren Island Water Treatment slow sand filters.*

# Operations Division

The Public Works Operations Division benefits Salem citizens by providing numerous services that enhance the quality of life and livability throughout the city. Services provided that are most often associated with Operations include treatment and delivery of high quality drinking water, collection and treatment of wastewater, and stormwater systems operation and maintenance.



Other local cities and jurisdictions also benefit from some of these services through intergovernmental agreements. Approximately 189,000 citizens throughout Salem, Turner, and unincorporated Marion County benefit from water service. A total of 229,000 citizens in Salem, Turner, Keizer, and unincorporated Marion County benefit from wastewater service.

Other less visible, but equally important, business activities include operating and maintaining reservoirs and pump stations, and working with businesses and industry to protect wastewater infrastructure and citizens



through the industrial pretreatment program. Also, water meters are read, utility bills are prepared, and customer inquiries are resolved by Operations staff. The Operations Dispatch Communications Center serves as the eyes and ears for the City by maintaining a link between concerned citizens reporting any nonemergency problem and the City staff best suited to resolve the problem. These calls may relate to hazardous waste spills, broken water pipes, customer inquiries, traffic signal malfunctions, complaints, and any Public Works-related calls.

The following pages provide detail for each of the Operations Division functions mentioned.



# Customer Services

## Major Accomplishments FY 2009-10

- *Successful operation of the utility billing system with less than 1 percent account billing error rate.*
- *The time to answer rate for the Utility Billing Call Center was 12 seconds on average. This is well below the national average of 60 seconds for call centers.*
- *Operational downtime for the Interactive Web Response System (IWR) and Interactive Voice Response System (IVR) is less than 1 percent. The IWR and IVR are systems that allow customers 24-hour access to their utility account and billing history information. These systems also allow customers to make water and sewer account payments by telephone and the Internet.*

The Customer Services Section is comprised of three subsections; the Dispatch Communications Center (DCC), Account Maintenance which includes the Utility Billing Call Center (UBCC) and field services, and Information Services. The community, Public Works, and other City Departments receive support services provided by these subsections.

## Mission:

To provide excellent customer service to all our customers promptly, honestly, and courteously.



Dispatch Communications Center staff.



Call Center/Utility Billing staff.

## Dispatch Communications Center (DCC)

The DCC is open for business 24 hours a day, seven days a week, 365 days a year. Calls are received from citizens reporting issues that vary from maintenance requests, inclement weather events; reporting such issues as a pothole, water



Meter reading vehicle equipped with radio reading technology (special antenna).



Utility Billing staff delivering a notice.

leak, signal not working; or dispatching staff as a result of an accident involving motor vehicles, environmental spills, fire emergencies, or traffic control support. Approximately 58,000 telephone calls are received by DCC staff annually. Calls may require staff to respond and dispatch Public Works field crews to work sites, obtain locations and contacts for scheduling utility line locates in the public right-of-way participating in the "Call Before You Dig" program, monitoring water and sewer control systems alarms, and maintaining public contact activity records and services documentation.

## Account Maintenance/Utility Billing Call Center

The Account Maintenance/Utility Billing Call Center staff provides utility support services to customers in person, by telephone, and electronically. Staff performs water meter reading, field services, and utility billing for approximately 51,000 residential, multifamily, commercial, industrial, public, and wholesale customer accounts. This equates to 620,000 water, sewer, and stormwater utility bills.

Additional services provided to our customers include investigation of irregular water consumption, water meter and leak inspections, and the delivery of delinquent notices to service addresses for account collections.



Handheld meter reading device and water meter lid.



Water Meter Reader performing meter reading with wand device.

## Information Services (IS)

Information Services staff, in partnership with the City's Information Technology Department, provides technical and ongoing support and maintenance for various hardware, software, and database needs for the Public Works Department. This includes on-site staff training; statistical, financial, and informational reports; program development; and software enhancements. The software systems are used to manage \$1 billion worth of water, sewer, stormwater, streets, and parks assets, which includes infrastructure located above and below the ground.

## Statistics for FY 2009-10

- *Received and handled 88,541 customer calls*
- *Issued and resolved 79,968 service requests*
- *96,571 interactive internet contacts*
- *Received 60,680 online utility payments*
- *Negotiated 7,723 payment arrangements*

# Pumps and Controls

## Planned Objectives FY 2011-12

- *SCADA System—Master radio sites at Skyline Reservoir and Downs Reservoir are to be completed by summer 2012.*
- *Arc Flash Studies are to be completed on six sites.*
- *Vibration Analysis will continue on a monthly basis.*
- *Airport Sewer Pump Station—Rebuild pump controls and reprogram the Programmable Logic Controller.*
- *Install radio telemetry at all 12 sites currently on phone modem lines to Operations.*
- *Flow Monitoring Sites—We are working with the sewer Technical Support group on installing the first real-time flow monitors at various sites throughout the city of Salem and bringing this information into the SCADA system on new informational screens.*

The Pumps and Controls Section is responsible for the operation and maintenance of 29 sewage pumping facilities, 23 water pumping stations, 18 reservoirs, 5 active wells, and the Supervisory Control and Data Acquisition (SCADA) system.

The maintenance staff consists of five Systems Technicians, two Instrumentation Technicians, and one Water Maintenance Service Worker.

## SCADA

Pumps and Controls Section maintains facilities monitored by a complex computer and communication system called SCADA. With 70 facilities throughout Salem, Keizer, Turner, and Stayton, our SCADA system collects about 7,200 data points every two minutes.

## Water Facilities

**Water Pump Stations**—All 23 facilities are inspected weekly for proper operation, maintenance needs, and security. Cleaning, painting, and grounds maintenance is accomplished on an as-needed basis.

**Deer Park Water Pump Station**—This station was upgraded this year with a new electrical room and new energy-efficient pumps with help from a grant from the Energy Trust of Oregon. These new pumps have increased station efficiency by 19 percent. A new electrical room will allow the pumps to operate on energy-efficient drives and increase efficiency even further.

**Boone Road Water Pump Station**—Boone Road water pump station will be expanding soon with a completely new building to the west of the current structure. Design is currently underway and the finished product will result in the largest water pump station in the city, with an



Deer Park Water Pump Station.



Boone Road Water Pump Station.

initial pumping capacity of 17 million gallons a day (MGD) and a full build-out capacity of 26 MGD.

## Reservoirs

Our 18 reservoirs are inspected weekly for proper operation of monitoring and process equipment, site issues, and cleanliness. A five-year cleaning cycle keeps the interior and exterior of our reservoirs in top shape.

Mader Reservoir Landscape—Trees surrounding the reservoir were removed due to poor root structure and neighbor complaints. New flower beds and hedge row have been placed to lessen the visual impact on adjacent neighbors.



*Mader Reservoir landscaping.*

## Sewer Pump Stations

All 29 facilities are inspected weekly for proper operation, maintenance needs, and security. When issues arise, they are scheduled for two-man maintenance crews to accomplish. Cleaning, painting, and grounds maintenance is accomplished on an as-needed basis.

Jade Street Sewer Pump Station—Vandalism occurred almost daily and crews spent 5-8 hours a week covering up or removing graffiti. New fencing now surrounds the Jade Street sewer pump station site and should prevent future vandalism and increase security.

## Regulatory Issues

The following regulatory issues are to be addressed in FY 2010-11:

- Arc Flash Study—Six water and sewer stations are being reviewed for arc flash safety requirements. This is a National Electrical Code requirement and requires training, individual personal protective equipment, Electrical Coordination and Ground Fault Study, and arc flash potential studies. This project is expected to take several years to complete. Arc flash safety continues to be a top priority for employee safety. Continual training and practical applications are keeping crews safe and sound.
- Greenbriar Sewer Pump Station—This facility is scheduled for removal in late 2011 with the installation of a gravity line. The new gravity line will also help prevent several sanitary sewer overflows that could occur during heavy rains.



*This photo is an example of an arc flash.*

## Statistics for FY 2009-10

### Water System

- 23 water pump stations, 18 reservoirs, and 5 active wells
- 93.6 MGD total pumping capacity
- 135-million-gallon total aboveground storage capacity
- 4 Woodmansee storage wells; the aquifer is approximately 550 million gallons
- Approximately 3,800 SCADA data points monitored and logged
- 34 Radio telemetry stations

### Sewer System

- 29 sewer pump stations containing 74 pumps with a total pumping capacity of 117 MGD
- 2 diversion structures
- 17 radio telemetry stations
- 12 phone telemetry stations
- Approximately 3,400 SCADA data points monitored and logged

# Stormwater Services

## Major Accomplishments FY 2009-10

- *MS4 permit was renewed in December 2010.*
- *Completion of the "Surface Water and Stormwater Monitoring Plan."*
- *Integration of stormwater treatment into a pedestrian improvement project on Rosemont Avenue NW in West Salem.*
- *Received \$1.1 million grant from ODOT for treating runoff from the Marion and Center Street bridges.*
- *Construction of a rain garden on Court Street NE.*

Stormwater Services is responsible for maintaining the city's 560 miles of open waterways, ditches, and closed underground pipes. Primary activities include operations and maintenance of the system, annual stream cleaning, water quality monitoring, wetlands maintenance, and Municipal Separate Storm Sewer System (MS4) permit implementation and reporting.

## MS4 Permit

Municipalities are required to obtain an MS4 permit to discharge stormwater to streams. This permit is designed to reduce the amount of pollutants entering our waterways by addressing water quality and runoff quantity through our stormwater management program. Salem's third permit was recently renewed December 2010.



*All stormwater in Salem flows directly to the nearest stream.*



*Inserting automated sampling equipment directly into a stormwater manhole.*

## Stream Cleaning Program

In the 13<sup>th</sup> year of the City's Stream Cleaning Program, nine interns traversed 50 miles of Salem streams and removed over 6.5 tons of trash and nearly 2 tons of recyclable material. In 2010, the crew used GPS technology to map invasive vegetation in the Pringle Creek Watershed.



*Stream crew collecting information about invasive vegetation along Salem streams.*

## Wetlands

Wetlands staff successfully completed a riparian enhancement project on Mill Creek along State Street to offset impacts from a bridge scour protection project. The site now meets or exceeds the original goals of establishing native riparian plant cover, improving water quality through shading, and providing bank stability. For added bonus, a handsome footpath meanders around the site providing an aesthetic enhancement for passersby.



Preparing site for revegetation efforts.



Complete enhancement project in 2010.

## Operations and Maintenance

In addition to the usual repair work conducted by Operations and Maintenance staff, this year the crew completed the installation of a new culvert on Gaia Way SE. For this project, 64 feet of 56-inch concrete culvert pipe was installed, and a rock simulated bottom for fish passage was constructed out of 4"-6" riprap.



56-inch concrete pipe used at Gaia Street SE.



Gaia Street SE culvert in place.



Court Street NE rain garden.

## Planned for FY 2011-12

- *Citywide coordination of MS4 permit*
- *Implementation of the Stormwater Management Plan (SWMP)*
- *Completion of MS4 and Total Maximum Daily Load (TMDL) annual report*
- *Implementation of additional water quality monitoring*
- *Development of a stormwater management manual*

# Wastewater Collection Services

## Major Accomplishments FY 2009-10

- *Converted more than 4,000 VHS tapes of main line TV inspections to DVD format.*
- *Reduced required crew size from five to two through efficiencies of the cured-in-place pipe (CIPP) liner repair process.*
- *Assisted private property owners through the proficient use of service lateral inspection equipment.*
- *Created a floating CCTV inspection camera for 42" to 75" pipe sizes.*
- *Installed three real-time monitors to aid in wet weather operations.*

Wastewater Collection Services ensures the conveyance of an average of 41 million gallons of wastewater per day through a system of 800 miles of sanitary sewer pipe serving Salem, Keizer, Turner, East Salem, and Labish. An annual budget of \$8.8 million and 56 full-time employees (FTE) provide services to a population of 228,000 citizens.

## Cleaning

This section's five hydrocleaning trucks clean roughly 475 miles of sanitary and stormwater pipe per year and assist the sewer, storm, water, and streets sections with about 250 excavation activities per year. They respond to customer calls of sewer backups and ensure City sewer lines are flowing properly. Additionally, cleaning crews support the work of TV inspection and repair crews with pre- and post-repair cleanings.



*New Vac-Con hydrocleaning truck and crew.*



*Using a Vac truck to remove debris from a stormwater catch basin.*

## Inspection

This section's four TV trucks and one grout truck provide CCTV inspections for new construction, warranty inspections, scheduled/unscheduled inspections, and dye test verification of sinkholes for both the sanitary and stormwater systems. Additionally, the crews conduct chemical grouting of sanitary sewer pipes and manholes, as well as sanitary service lateral inspections.



*CCTV camera equipment used to inspect sanitary sewer and stormwater pipes.*



*CCTV truck used for recording video inspections of new construction, pipe condition, and dye testing.*

## Repair

This section provides maintenance and repair work throughout the sanitary sewer system. Tasks include excavation repairs of manholes and main lines, trenchless liner repairs, manhole replacement and adjustments, sewer service taps, air valve maintenance, pest control, sewer locates, and bypass pumping.



*Dig and replace repair operation.*



*Example of a cured-in-place pipe liner; a no-dig technology that allows an existing pipe to be rehabilitated without digging up the street.*

## Technical Operations

This section provides support services to the other Wastewater Collection Services sections and conducts flow monitoring, manhole inspection, smoke testing, rain gauge maintenance, database management, and wet weather operation activities throughout the year.

### Planned for FY 2011-12

- Reestablishment of the Manhole Coating Program with a five-year renewable contract
- Acquisition of 2,000 feet of continuous coax cable for TV inspecting long easement runs of 48-inch- to 75-inch-diameter main line interceptors
- Acquisition of T-liner repair system for trenchless repairs of sewer lateral hubs
- Acquisition of new Vac-Con hydrocleaner to replace a 14-year-old hydrocleaner
- Completion of dry season chemical grouting of 18-inch to 24-inch pipes
- Acquisition of three real-time monitors (for a total of six) and all communication infrastructure to bring them online

### Statistics for FY 2009-10

- *Cleaned 411 miles of sanitary sewer pipes*
- *Cleaned 65 miles of stormwater pipes*
- *Cleaned 2,380 stormwater catch basins*
- *CCTV-inspected 183 miles of sanitary sewer pipe*
- *CCTV-inspected 21 miles of stormwater pipe*
- *Inspected 1,650 sanitary sewer manholes*
- *Smoke tested 28 miles of sanitary sewer pipe*
- *Completed 1,396 feet of CIPP liner repairs*
- *Completed 71 dig and replace repairs*
- *Grouted 10,720 feet of sewer pipe*
- *Grouted 46 manholes*

# Wastewater Treatment Services

## Major Accomplishments FY 2009-10

- *Construction completed at WLWPCF and 2010 was the first winter both the expanded WLWPCF and RRWWTF were used.*
- *Wastewater Treatment and Collections staff gained more experience balancing flows between the WLWPCF and RRWWTF.*
- *Completed projects including repair of the effluent diffuser and prepared and submitted a mixing zone study to the ODEQ for the RRWWTF.*
- *Completed sampling and testing to comply with Senate Bill 737 related to pollution prevention.*
- *Upgraded the DCS without any interruption to plant process.*
- *The Laboratory completed its latest round of Accreditation Proficiency Testing (PT) intended to measure analytical proficiency with a score of 100 percent.*

Wastewater Treatment Services is comprised of Administration, Operations, Maintenance, Biogro, and Laboratory. There are 52 FTE in this division with an annual operating budget of approximately \$9 million.

## Mission:

To meet or exceed the requirements of the federal Clean Water Act (CWA) and the Oregon Department of Environmental Quality (ODEQ) administration of these CWA rules.

## Operations

The Willow Lake Water Pollution Control Facility (WLWPCF) and River Road Wet Weather Treatment Facility (RRWWTF) are responsible for treating the wastewater generated by the citizens of Salem, Keizer, Turner, and other unincorporated areas of Marion County served by the sewer collection system. Salem's wastewater treatment service population is approximately 229,000 people. The performance of the facilities is measured on a daily basis through the collection and analysis of influent and effluent samples. The results of the analysis confirm compliance with the operating permit regulatory standards. These



Aerial photo of Willow Lake Water Pollution Control Facility.



River Road Wet Weather Treatment Facility.



Willow Lake Water Pollution Control Facility effluent.



Outfall at Willamette River.

standards are designed to protect in-stream water quality and the health of the organisms living in and around the Willamette River.

## Maintenance

Maintenance executes an aggressive preventative maintenance program to keep existing and new equipment at WLWPCF and RRWWTF operational and reliable. Upgrades and enhancements to the Electrical, Mechanical, and Distributed Control System (DCS) have significantly improved both facilities.



*Pulling influent pump for inspection and maintenance.*

## Biogro

The Biogro program ensures that all 31 million gallons of biosolids (primarily organic product produced from the wastewater treatment process) produced at WLWPCF are beneficially reused in an environmentally sound, publically acceptable and cost-effective manner consistent with all state and federal biosolids regulations and management practices.



*Biosolids winter storage facility.*



*Biosolids application site.*

## Laboratory

The laboratory analyzes samples supporting many programs throughout the City including wastewater treatment, water treatment and distribution, industrial billing and pretreatment, and stream and stormwater monitoring. The laboratory is Oregon Environmental Laboratory Accreditation Program (ORELAP) accredited and performs many different types of analysis including microbiological, metals, solids, and nutrients.



*New Inductively Coupled Plasma Spectrophotometer.*

## Statistics for FY 2009-10

- *The wastewater treatment capacity increased from 155 million gallons per day (mgd) to 205 mgd.*
- *Approximately 41 mgd was the average wastewater flow to WLWPCF and RRWWTF.*
- *A total of 14.9 billion gallons of wastewater was treated at WLWPCF and RRWWTF.*
- *Approximately 900 acres were available locally for application of winter stored biosolids.*
- *The laboratory tested approximately 15,000 samples, which resulted in approximately 55,000 analyses.*

# Water and Environmental Resources

## Major Accomplishments FY 2009-10

### Water Resources:

- *Tree Canopy Study (2001 to 2009)*
- *Minto-Brown Island Park Floodplain Restoration Project*
- *Environmental Education Program*
- *Riparian Outreach Pilot Program*
- *Riparian Action Plan and Environmental Action Plan*

### Environmental Services:

- *24/7 Spill and Complaint Response*
- *Monthly Stream Monitoring Program*
- *Freeze the Grease Program*
- *Household Prescription Drug Collection Event*

In July, the Water Resources Section was reorganized, moving from the Administrative Division of Public Works to the Operations Division, and merging with Environmental Services to become the Water and Environmental Resources Section.

## Water Resources

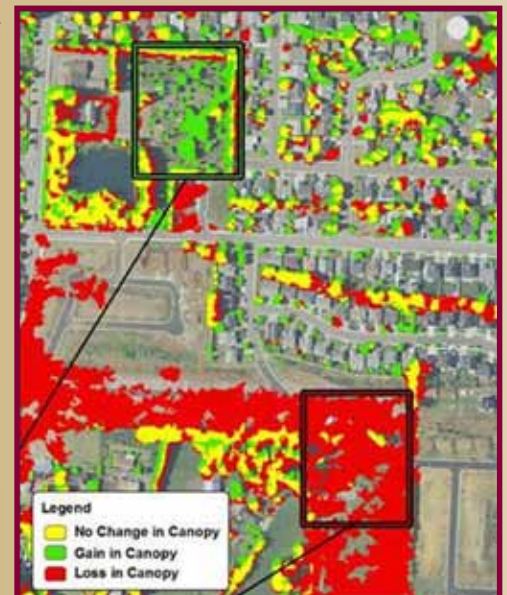
Water Resources Program staff works closely with state and federal regulatory agencies to ensure City projects meet current regulations. Natural resource projects associated with mitigation monitoring, riparian action plan implementation, and urban tree canopy assessment continue to be managed by this program. Staff provides outreach and education addressing requirements of the Stormwater Management Plan, Water Management and Conservation Plan, Total Maximum Daily Load permit, and assists with special projects and general Public Works communications.

## Highlights/Accomplishments:

- *Tree Canopy Study: Conducted a comparative tree canopy study and analysis (2001 to 2009).*
- *Minto-Brown Park Floodplain Restoration Project: Restoration of the 166-acre American Recovery and Reinvestment Act-funded floodplain easement area at Minto-Brown Island Park occurred throughout the year.*



*Restoration Planting at Minto-Brown Island Park.*



*Tree Canopy Study.*

- **Environmental Education Program:** The Youth Environmental Education Coordinator conducted 551 presentations and 17 Discovery Hikes to 13,112 students, raising \$12,168 in revenue. A total of 46 presentations were performed by the Natural Resources Outreach Specialist, reaching an audience of 1,509 students.
- **Riparian Outreach Pilot Program:** Grant funding for a riparian outreach pilot program resulted in the planting of 1,500 native riparian plants along Pringle and Glen Creeks to provide shade and reduce erosion.
- **Riparian Action Plan and Environmental Action Plan:** Led the work resulting in the Plans adoption, and was a City Council goal for 2010 under the Healthy Environment category.

## Environmental Services

Environmental Services (ES) Program staff implements an industrial pretreatment program at the local level, as required by the Federal Clean Water Act and the State Department of Environmental Quality. The program requires surveying and maintaining a familiarity with the local business community, issuing permits, and sampling and calculating loadings for industrial billing. In 2010, ES regulated 36 permitted businesses, performing 916 business inspections, meetings, and other contacts. Permitted businesses paid more than \$5.3 million dollars to the City to treat industrial wastes and more than \$304,600 to treat septage wastes.

### Highlights/Accomplishments:

- **24/7 Spill and Complaint Response:** Staff responded to 424 calls for assistance in 2010 thus preventing spills from entering and negatively impacting the storm and sanitary sewers, the environment, and worker or citizen health. In 2010, 41 violations were issued by ES staff.
- **Monthly Stream Monitoring Program:** Eleven local streams are monitored, with sampling at 21 sites, to determine the overall health of these surface waters. In 2010, ES received and responded to 216 complaints regarding surface water quality.
- **Freeze the Grease Program:** Support to the wastewater collection group through a Freeze the Grease program, aimed at reducing or eliminating discharges of line clogging fats, oils, and grease to the sanitary sewer from residential and business sources.
- **Household Prescription Drug Collection Event:** Helped organize and facilitate the first communitywide events to reduce misuse of unused drugs and prevent them from being flushed to the sanitary sewer. Two events held in 2010 received the most drugs, measured in pounds, of any collection sites in the state.



*Typical pretreatment setup inside a small permitted industry.*



*Freeze the Grease Program outreach during Salem Fire Open House.*

# Water Services

## Major Accomplishments FY 2009-10

- *Investigation and assessment of the structural integrity and leakage of the 36-inch and 54-inch transmission mains from Geren Island to Turner Control*
- *Repairs at Fairmount Reservoir to protect water quality reservoir integrity*
- *Geren Island South Channel cleaning to improve conveyance*
- *Implementation of the North Santiam watershed monitoring program to address emerging contaminants such as nutrients and blue-green algae*
- *Franzen Reservoir Dam monitoring system upgrade*
- *Water utilities/assets review, evaluation, and upgrade for upcoming Street Bond projects*
- *Salem-Keizer water service boundary improvements*

Water Services is comprised of water quality and treatment, distribution, pumpage, and storage. There are 53 full-time employees in the section with an annual operating budget of approximately \$8 million.

## Mission:

To provide reliable water service in sufficient quantity and at a quality level that meets or exceeds both customer expectations and regulatory standards.



South Channel at Geren Island.



Upper Bennett Dam.

## Treatment

Salem's water system supplies drinking water to more than 187,000 people, at an annual average rate of 27.8 MGD (million gallons per day). Our water supply is the North Santiam River with a drainage area of close to 700 square miles of watershed.



Turner Control.



Water sampling at Detroit Lake.

## Water Quality

Samples are collected daily throughout the distribution system to ensure the water reaching our customers' tap is safe to drink. More than 8,000

samples are taken each year from the North Santiam River, from treated water at the Geren Island Water Treatment Plant, and from Salem's distribution system. The City consistently meets or exceeds all water quality standards.



*Slow sand cleaning.*



*Distribution night work.*

## Distribution and Storage

Eighteen reservoirs provide storage for Salem's drinking water. Total distribution storage in the City is about 136 million gallons. The largest storage facility, Franzen Reservoir, is a 92-million-gallon reservoir with two cells, lined and covered. The water system has 22 pump stations that pump water to the higher elevations of the south and west service areas of the City.

The City's distribution system consists of pipe diameters ranging from 2-inch to 48-inch. Pipe materials include asbestos cement, cast iron, concrete cylinder, ductile iron, polyvinyl chloride (PVC), and steel. The approximate distribution system pipeline length is 1,170 miles, consisting of 730 miles of active mains and 445 miles of service lines.



*Franzen Reservoir.*



*Detroit Lake tributary.*



*ASR photos.*

## Statistics for FY 2009-10

- 322 new meters installed
- 320 large meters tested and repaired
- 15,193 feet of new mains chlorinated
- 463 service line-related repairs including relays
- 2,425 valves surveyed and exercised
- 9.75 miles of water mains inspected for leak detection

# Parks and Transportation Services Division

## Plans and Challenges FY 2011-12

- *Complete update of the Comprehensive Parks System Master Plan*
- *Coordinate with the Engineering Division on design of upcoming Streets & Bridges Bond Projects*
- *Lead the traffic analysis for the Central Salem Mobility Study*
- *Coordinate a public aquatics program and work to institute additional recreation programs*
- *Host seven ASA National Tournaments and four USSSA World Tournaments over four weekends in 2011*
- *Update infrastructure data managed in Hansen database and GIS*

The Parks and Transportation Services Division operates the City's park system, recreation programs, and transportation system. Our staff maintains and operates more than 560 miles of streets and 714 miles of sidewalks—providing mobility for people and goods. More than 1,900 acres of parkland provide a range of opportunities for citizens' recreation and to enjoy the history and beauty of Salem. These services are essential



*A safe and active pedestrian area is important to the vitality of Salem's downtown.*



*The Traffic Engineering Section works to improve safety and efficiency of the City's street system.*

to providing a high livability standard for Salem's residents. This quality of life helps to retain and attract new businesses to our community. The Parks and Transportation Services Division staff is proud to make Salem a wonderful place to live and work.

The Parks and Transportation Services Division staff provides these services through six sections, described in more detail on the following pages. In addition to the day-to-day operations of the Division, staff from all sections works together to support incident response, emergency management, and special events—including traffic control, motorist information, and tree removal.



*Parks provide places for people to gather and enjoy the outdoors.*



*Sliding into second base at Men's ASA Fastpitch Tournament at Wallace Marine Park.*

# Parks Operations

## Major Accomplishments 2010

- *Restarted update to Comprehensive Parks System Master Plan with formation of Parks Revenue & Master Plan Task Force*
- *Amended the master plans for Fairmount Park and Northgate Park*
- *Adopted master plan for Kale Road Park*
- *Developed a Minto-Brown Island Restoration Plan and spending plan for the proceeds from the sale of the conservation easement*
- *Awarded seven grants for park improvements through the Salem Parks Improvement Fund (SPIF)*
- *Received a grant for Bill Riegel Park Phase 1 Development*
- *Coordinated University of Oregon Sustainable Cities Initiative projects*

The Parks Operations Section operates and maintains more than 1,900 acres of parks and the City's urban forestry program. This section maintains 54 miles of landscape beds in the City's right-of-way, installs and maintains irrigation sprinklers covering 91 miles of irrigation main line, and performs landscape maintenance at parks including nine historic sites.



*A member of an inmate crew spreads bark dust at Sunnyslope Park.*



*Volunteers working in the Bush Park Rose Garden.*

This work is accomplished with 32 full-time employees, 30-35 seasonals, and more than 180,000 hours of nonemployee labor (equivalent to an additional 87 FTE staff). The nonemployee labor is provided by a combination of volunteer hours, inmate labor, court-ordered community service workers, and "Work Experience" workers. In addition to the maintenance and operation of these diverse resources, the section also performs parks system master planning and design.



*Children enjoy a neighborhood park.*



*Families stroll across the Union Street Railroad Bridge, now part of the Salem Parks System.*

# Recreation Services

## Statistics 2010

- *Hosted 23 Softball Tournaments (12 City-sponsored, 11 facility rentals)*
- *Softball tournaments generated \$2.5 million estimated economic impact on the local economy*
- *Coordinated use of City parks and streets for 292 community and special events*
- *Processed 446 facility reservations serving 32,240 people*
- *Handled 10,366 Cooperative Use Sports Facility reservations, representing 42,443 hours of community sports use of City and School District facilities*
- *Managed summer youth programs that served 1,251 youth*
- *Organized 1,730 City Softball League games*
- *Co-sponsored COUNTRY Kids Relays, which had participation by 3,500 local elementary age youth*

Recreation Services manages the youth sports program and the softball program; and schedules public use of Salem-Keizer School District property, parks, and streets. The youth sports program includes COUNTRY Kids Relays, Summer Parks Program, basketball and soccer sports camps, tennis, and administrative oversight of the summer aquatics program. The City's softball program is conducted primarily at Wallace Marine Park Softball Complex. Programs include adult leagues; tournaments (youth, adult, and co-ed regional, state, and national); local high school and college softball games; a girls fast-pitch fall league; and special events. The City of Salem earned a James Farrell Award of Excellence for conducting four of the highest rated National Championships in 2010. The City also won bids for two Masters World Tournaments in 2011 and two National Tournaments for the summer of 2012.



COUNTRY Kids Relays finish line.



Youth Soccer Camp action.



Girls enjoying beading activity at Summer Parks Program.



Filling in for Dad—Men's ASA Fastpitch Tournament.



...and the Pitch—ASA Women's Fastpitch Tournament.

# Traffic Engineering and Transportation Planning

## Statistics 2010

- *Provided traffic control training for approximately 200 City staff*
- *Issued 655 work zone permits*
- *Maintained 206 School Zone Speed Warning Flashers*
- *Responded to 1,548 service requests for traffic signal or flasher service*
- *Completed the inspection of more than 700 miles of sidewalk or 98.8 percent of the entire sidewalk system*
- *Mailed 2,566 letters to property owners transferring maintenance responsibility for sidewalk repair*
- *Worked on 17 transportation planning efforts; 9 of which were completed in 2010*

The Traffic Engineering Section operates the street system in Salem including traffic signals, lane configuration, signs, and markings. The staff in this section also reviews development proposals to determine new infrastructure needed to safely accommodate additional trips.

During 2010, the Traffic Engineering Section implemented a new striping plan on Commercial Street through downtown Salem as part of the bond-funded paving project. This new configuration provides three wide, rather than four narrow, travel lanes. The new wider configuration reduces friction between parked cars, bicycles, and motor vehicles. This project also included some of the first "Sharrows" (Shared-Lane Markings) in Salem. Flashing yellow left-turn arrows were also introduced in Salem during 2010.

The Transportation Planning Section develops and administers the Salem Transportation System Plan and leads related planning studies.

Key efforts that were underway in 2010 included "Bike & Walk Salem!," a grant-funded study to update the bicycle and pedestrian elements of the Salem Transportation System Plan; Sustainable Cities Initiative Studies; completion of the technical work for the Salem River Crossing Draft Environmental Impact Statement; and selection of Streets and Bridges Bond pedestrian safety crossing projects.



*Sharrows installed on Commercial Street NE/SE through downtown.*



*Crews work to repair a traffic signal after a large Oak tree fell on it.*



*School crossings were evaluated as part of the "Bike & Walk Salem!" project.*

# Street Maintenance

## Statistics for FY 2009-10

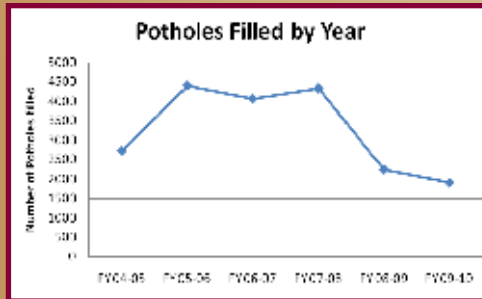
- *Paved 1.5 miles of streets with City crews including:*
  - ♦ *Maintenance overlay paving—57,931 square yards*
  - ♦ *Thin skin patches (lane pulls)—71,843 square yards*
  - ♦ *Slurry seal—34,321 square yards*
- *Paving completed by City contractors—288,563 square yards*
- *Retrofitted 424 sidewalk corner curb ramps to bring them up to ADA compliance by City crews or contractor*

The Street Maintenance Section keeps Salem’s streets and sidewalks safe for the public by paving, patching, and filling potholes for more than 1,100 lane miles of City streets and approximately 714 miles of sidewalks. The section responds around-the-clock during the winter months to keep the streets safe in the event of snow or ice.

The Pothole Patching Program is one of the most visible services provided by the Streets Maintenance Section. The number of potholes filled each year varies depending on the weather and on the overall condition of our streets. Recent paving projects funded by the Streets and Bridges Bond and federal stimulus funds have eliminated some of our largest “pothole farms.”



*Crews work to replace sidewalk damaged by a street tree.*



*Crews finish patching a pothole.*



*Grading a gravel alley.*



*Maintenance paving crew at work.*

# Signs and Sweeping

## Statistics 2010

- Average time to respond to a sign-related service request was one hour for Stop and Yield signs and one business day for all other signs
- 16,710 curb miles swept
- 3,990 cubic yards of leaves removed from city streets
- 11,000 pounds of litter removed by 1,600 volunteers along 180 miles of streets adopted through the Adopt-A-Street program
- 559 lane miles of city streets striped using paint (2010)
- 752 markings and legends replaced, including turn arrows, crosswalks, railroad crossings, and bicycle lane markings and legends (2010)
- Signs: 1,263 signs fabricated; 1,984 signs installed or replaced; and 705 sign posts installed or replaced

The Signs and Sweeping Section supports the safe operation of the street system through maintaining and installing signs, striping lanes, and other pavement markings; and installing safety reflectors. The section also maintains and cleans rights-of-way throughout the City by sweeping streets and mowing undeveloped rights-of-way.



Volunteers help during the annual fall leaf collection event.



Crews are busy mowing along right-of-way during the growing season.



Well-maintained signs help to safely control traffic.



Crews paint traffic striping to improve safety.



Street sweepers help keep our waterways clean of debris.

