

EUGENE CITY COUNCIL AGENDA ITEM SUMMARY



Work Session: Review of 2012 Implementation of Bond Measure to Fix Streets and 2013 Pavement Management Report

Meeting Date: February 20, 2013
Department: Public Works
www.eugene-or.gov

Agenda Item Number: C
Staff Contact: Kurt Corey
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ISSUE STATEMENT

This work session is an opportunity for the Eugene City Council to review the fourth year of the implementation of Measure 20-145, the 2008 bond measure to fix streets. To facilitate this review, two documents were prepared: the Citizen Street Repair Review Panel 2012 Report and the independent accountant's report prepared by Isler CPA. These reports are provided as informational items in compliance with the City Council resolution placing the bond measure on the ballot. This work session will also review the 2013 Pavement Management Report.

BACKGROUND

Council Action History

Following considerable study and discussion, including forming a Council Committee on Transportation Funding and convening an ad hoc citizen Street Maintenance Task Force, the council on July 28, 2008, approved Resolution 4953, calling a city election on a measure authorizing the issuance of \$35.9 million of general obligation bonds to fund street preservation projects. Eugene voters on November 4, 2008, approved the measure.

In the City Council resolution and the information provided to voters, there were specific requirements related to accountability:

- In order to promote accountability in the use of bond proceeds, the City Manager will contract with an outside auditor to prepare a written report on the use of the bond proceeds on a regular basis. The auditor will ascertain and report on whether the bond proceeds were used for the authorized purposes and in compliance with the restrictions set forth above. The City Manager will provide the report to the council and make the report publicly available. (Resolution 4953, Section H)
- To further promote accountability and citizen involvement in street preservation projects, the City Manager has advised that he intends to create a street repair review panel. The street repair review panel will prepare a report, separate and distinct from the report prepared by the outside auditor, documenting the City's use of the bond proceeds and noting whether the bond proceeds were used in compliance with the terms of this

Resolution. The City Manager will provide the street repair review panel's report to the council and make the report publicly available. (Resolution 4953, Section I)

On April 14, 2010, the City Council held a work session to receive the first annual report from the Street Repair Review Panel (SRRP) and the independent accountant's report. On January 19, 2011, the City Council received the year-two report from the SRRP regarding the implementation of the 2008 bond measure to fix streets. On May 11, 2011, and October 26, 2011, the City Council approved 22 additional streets to be repaired with the projected remaining bond funds, bringing the total streets to be repaired to 54 streets. On February 29, 2012, the City Council received the year-three report from the Citizen Street Repair Review Panel.

Street Repair Review Panel

In October 2009, a citizen group was formed to evaluate the City's use of the first year of bond proceeds and report whether the bond funds were used in compliance with the council resolution. The 12 community members serving on the 2012 Street Repair Review Panel (SRRP) were: John Barofsky, Howard Bonnett, Janet Calvert, Mel Damewood, Paul Holbo, Steve Lee, Dave Perez, Ollie Snowden, Clayton Walker, Victoria Whitman, Gary Wildish and Sue Wolling. During the past year, the 12-member panel met three times over a three-month period in preparation of the report, which included a physical inspection of the projects completed in 2012.

On January 9, 2013, the Street Repair Review Panel unanimously approved its fourth annual report (Attachment A), which included the following conclusion:

Based on this limited review and all materials presented to us, we unanimously conclude that the bond proceeds were used for the authorized purposes and in compliance with the limitations and restrictions outlined in Council Resolution 4953. (SRRP 2012 Report, Page 1).

The report from the SRRP highlighted the City of Eugene's effort to continually strive to improve the quality, lessen the environmental footprint, and increase the cost efficiency of its projects. Bond projects use warm mix asphalt pavement, reclaimed asphalt materials and in-place recycling to realize environmental, economic, social, and health benefits to the community. The positive economic impacts include the funding of more than 76 full-time equivalent jobs during the period of construction.

The 2012 SRRP report recognized the successful renewal of the street bond measure at the polls. On Nov. 6, 2012, Eugene voters resoundingly approved a new, \$43 million bond measure to fix streets and fund bicycle and pedestrian projects. Looking to the future, expectations are that construction costs will return to pre-recession levels, which will reduce the likelihood that the City will see much difference between programmed and actual costs for the final year of the bond measure and into the future. The SRRP recognizes that while street bonds provide a partial funding stopgap, they cannot be relied upon as the primary means of funding Eugene's ongoing street repair needs in the future. Additional ways to fund street repair should be reviewed.

A web site tracking the bond measure implementation has been established at www.eugene-or.gov/gobonds. The panel's 2012 report has been placed on the internet, and links to the online

report will be sent to the Neighborhood Leaders Council and other community and business organizations. In preparation of the 2013 report, the Street Repair Review Panel is scheduled to reconvene in the fall, upon completion of the 2013 construction season.

Independent Accountant's Report

The accounting firm of Isler CPA, who also performed the annual audit of the City's FY12 financial statements, was contracted to perform sufficient agreed upon procedures in order to determine whether the expenditure of general obligation bonds were made in accordance with the purposes and limitations outlined in the street repair bond resolution – namely, that expenditures were:

1. Used only for costs related to street preservation projects, off-street bicycle and pedestrian path preservation projects and payment of bond issuance costs, and not to expand the capacity of the street system; and also,
2. Limited to projects included in Exhibit A to the resolution, unless upon completion of all of the projects listed in Exhibit A, the council adds other street preservation projects to the list in order to utilize unspent bond proceeds.

The accountant's procedures were performed for the period December 1, 2011, through November 30, 2012, and were conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants. The independent accountant expenditure testing concluded:

All tested expenditures were recorded in the proper account, fund and period and were spent on street projects included in Exhibit A of City Council Resolution No. 4953 or other street preservation projects approved by City Council, as permitted under Resolution 4953. No exceptions were noted.

Further, it was the summary conclusion of the independent accountant that, "Based on our limited testing, we noted that the City followed the purpose and limitation of the City Council Resolution #4953." The Isler CPA report is included as Appendix C to the SRRP 2012 Report.

The Isler CPA 2012 report has been placed on the internet along with the report of the citizen panel at www.eugene-or.gov/gobonds.

Pavement Management Report

The annual Pavement Management Report is produced to update information and data regarding the City of Eugene's transportation system including improved streets, unimproved streets and off-street shared-use paths. This report provides surface descriptions and associated mileage, reviews current treatment programs and costs, and projects future treatment needs based on several funding scenarios. Currently, Public Works manages 1,328 lane miles (533 centerline miles) of streets, and approximately 43 miles of off-street, shared-use paths within the City limits. This report includes a breakdown of the street transportation system in terms of pavement type, level of improvement, and functional classification.

The 2013 Pavement Management Report was compiled by the Public Works Maintenance Division's Surface Technical Team to provide updated information on the condition of asphalt paving in Eugene using 2012 rating and inventory data. The 2013 Pavement Management Report shows progress has been made on the condition of Eugene's streets, but more work is needed to further reduce the backlog of needed repairs of City streets. Specifically, based on the 2011 ratings, and reported in the 2012 report, the calculated backlog of repairs on improved asphalt streets was \$118 million; as of the end of 2012, the current backlog has been calculated to be \$100 million. Despite this short-term downward trend the backlog is projected to continue to grow in the long-term unless there is an increase in funding that is both sufficient and sustainable.

The report includes an inventory of streets by improvement status and functional classification, details how a pavement management system is used to inspect and rate pavement surfaces, explains Eugene's pavement preservation program, and includes updated information about treatment types and costs. Electronic copies of the 2013 Pavement Management Report are available at www.eugene-or.gov/pw.

RELATED CITY POLICIES

The Council's Goals include "Transportation Initiative: Develop mechanisms to adequately fund our transportation system for cars, trucks, bikes and pedestrians including maintenance and preservation and capital reconstruction."

COUNCIL OPTIONS

This work session is informational; no action is requested.

CITY MANAGER'S RECOMMENDATION

This work session is informational; no action is requested.

SUGGESTED MOTION

This work session is informational; no motion is requested.

ATTACHMENTS

- A. Citizen Street Repair Review Panel 2012 Report, including Auditor's Report
- B. 2013 Pavement Management Report

FOR MORE INFORMATION

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Citizen Street Repair Review Panel 2012 Report

Implementation Update for Measure 20-145 Bonds to Fix Streets



GO Bonds — — —
FIXING EUGENE'S STREETS



Memorandum

Date: January 18, 2013
To: Jon Ruiz, City Manager
From: Street Repair Review Panel
Subject: Year Four Report of the Street Repair Review Panel

It is our pleasure to present the fourth annual report of the Street Repair Review Panel (SRRP). This panel was formed, and this report was written, in response to the accountability provisions in Measure 20-145 (2008 bond measure to fix streets).

The 12-member panel met three times over a three-month period in preparation of this report, which included a physical inspection of the projects completed in 2012. We reviewed and accepted the report prepared by the City's external auditor (Appendix C) with respect to the City's use of the bond proceeds through November 30, 2012.

Based on this limited review and all materials presented to us, we unanimously conclude that the bond proceeds were used for the authorized purposes and in compliance with the limitations and restrictions outlined in Council Resolution 4953. We are also providing a detailed report, prepared at our request and with our approval, from the Public Works staff on the bond projects constructed in 2012.

Highlights from our review of the 2012 street bond projects:

- **2012 Bond Measure** - We draw your attention to the successful renewal of the bond measure at the polls. On Nov. 6, 2012, Eugene voters resoundingly approved a new, \$43 million bond measure to fix streets and fund bicycle and pedestrian projects. Despite the economic stresses many are experiencing in Eugene, the measure passed in every ward but one and, overall, by a larger majority than the first measure. We attribute the success at the polls to increased understanding by the electorate of the importance of maintaining our City's transportation infrastructure and to recognition and appreciation by the electorate of the repairs funded by the current bond measure. We appreciate the diligence and competence of the City's Public Works staff in planning and overseeing the improvements in infrastructure achieved by the current bond measure. While street bonds provide a partial funding stop gap, they cannot be relied upon as the primary means of funding Eugene's ongoing street repair needs in the future. Additional ways to fund street repair should be reviewed.
- **Triple Bottom Line** – The City of Eugene continually strives to improve the quality, lessen the environmental footprint, and increase the cost efficiency of its projects. Bond projects use warm mix asphalt pavement, reclaimed asphalt materials and in-place recycling to realize environmental, economic, social, and health benefits to the community. Warm mix asphalt reduces energy consumption and improves workers' health and safety. In-place recycling reduces land filling, material mining, and truck hauling which benefits the environment. It also reduces excavation of existing roadway materials and importation of virgin construction materials which has direct economic benefits, while the traveling public benefits from reduced construction time. It is estimated that using the in-place recycling process for the street bond projects on 24th Avenue, Augusta Street,

Riverview Street, and Royal Avenue, eliminated the need to excavate and haul away 22,000 cubic yards of material and eliminated hauling 39,000 tons of new base rock to the site, saving over 3,500 truck trips.

- **Jobs Impact** – Based on the Oregon Department of Transportation Highway Division jobs multiplier model, the 12 bond measure repair projects completed in 2012 conservatively sustained approximately 76 full-time equivalent jobs during the period of construction.
- **Overall Condition Index (OCI)** – All roads in our transportation system age and gradually decline in OCI until, reaching some range of OCI value, every road needs either an overlay or reconstruction. An important program goal is to keep streets from falling into the more expensive reconstruction category and to expend resources early on to preserve the condition of the street. It costs more to rebuild the streets than to maintain them. In 2012, 11.8 lane miles of streets were rehabilitated to keep them from falling into the reconstruction category.
- **Forecast** - By the expiration of the current measure, more street repair work will have been completed than was programmed in the measure. Although our region is not fully recovered from the recession beginning in 2008, the economic climate, leading to low bids during the early years of the current bond measure, has changed. Expectations are that construction costs will return to pre-recession levels, which will reduce the likelihood that the City will see much difference between programmed and actual costs for the final year of the bond measure and into the future.
- **Additional Projects** – In 2011 the council approved 22 additional streets representing 30.7 lane miles to be repaired with bond funds. At this time, the projected cost of the 22 additional streets is \$16.8 million. The City plans to construct 10 of the additional street sections in 2013 with remaining bond funds, with the remaining 12 street sections to be constructed between 2014 and 2016 with local gas tax funds.
- **Active Transportation** - The bond measure has allowed meaningful progress toward enacting elements of the Pedestrian and Bicycle Master Plan. Shared-use paths, reconstructed to greater depth and width, will accommodate increased use well into the future. Meanwhile, street preservation often has provided an opportunity to leverage other funds to add bicycle and pedestrian improvements on streets. Thanks to conscientious staff efforts, programmed bond measure projects have incorporated new or wider bicycle lanes, shared lane markings, and improvements in pedestrian facilities. Even though few funds are available for the Pedestrian and Bicycle Master Plan (PBMP), the bond measure has facilitated the construction of some PBMP projects on bond measure streets.
- **Progress** – To date, the use of bond proceeds has allowed the City to repair 66.8 lane miles of streets at a cost of \$24.3 million. In addition, \$1.9 million has been spent reconstructing 2.3 miles of off-street shared-use paths.
- **Bottom Line** – Many roads are getting fixed, the rate of deterioration has been slowed on others, and the bonds are meeting the objectives of Ballot Measure 20-145.

We appreciate the support and thoughtful responses to our questions provided by Public Works Director Kurt Corey and his staff. The Committee also expresses our appreciation to the voters and taxpayers of Eugene for their support of the bond measure. We believe the voters are getting a good return for their investment.

Additional information about the Street Repair Review Panel, including action summaries of our meetings and a variety of reports and studies, can be found at www.eugene-or.gov/gobonds.

Please feel free to contact any of us for additional information.

SRRP Members

John Barofsky	Dave Perez
Howard Bonnett	Ollie Snowden
Janet Calvert	Clayton Walker
Mel Damewood	Victoria Whitman
Paul Holbo	Gary Wildish
Steve Lee	Sue Wolling

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2012 Report to the Citizen Street Repair Review Panel

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Photos on cover from 2012 projects: Gilham Road paving (top); West Bank Path (lower left); Terry Street (lower right)

INTRODUCTION

BACKGROUND

This report has been compiled for use by the Street Repair Review Panel (SRRP). It is intended to give background on projects included in the 2008 voter-approved Bond Measure 20-145, the schedule for construction of these projects, and details of bond projects constructed in 2012. The Street Repair Bond is a five-year bond, with construction of bond-funded projects starting in 2009 and bond-funded projects to be complete in 2013.

KEY TERMS

Bond - Bond Measure 20-145, Bonds to Fix Streets, approved by Eugene voters in November 2008.

In-Place Recycling - A process in which a large piece of equipment called a reclaimer mixes the existing base rock and a portion of subgrade soils with dry cement and water to create a cement-treated base. This process greatly reduces the use of virgin materials and trucking that are needed using conventional remove-and-replace construction techniques.

Inlay – An inlay treatment consists of removing a specified depth of the existing pavement surface and repaving that same depth with a new pavement surface. This treatment works well where the pavement distress is isolated to the removed portion of the pavement. At times, the inlay treatment needs to be supplemented with an “overlay” which is when an additional thickness of pavement is placed over the inlaid pavement. An overlay is used when engineering analysis shows that the existing structure does not have sufficient strength to accommodate the projected traffic loading. The term “overlay” is commonly used to describe both the inlay and overlay practices.



Milling pavement for inlay on Goodpasture Island Road

One of the benefits of performing an inlay treatment is that the new pavement surface will match existing adjacent structures and not increase the street cross grade. Another benefit of an inlay is that in the removal of the existing pavement, contractors grind up the old pavement and stockpile the material to be recycled into new pavement. The use of reclaimed asphalt pavement, or “RAP”, has been used for more than 20 years in Eugene. In 2012, approximately 10,800 tons of RAP material (30% by weight) was incorporated into the pavement on bond-funded projects.

PPP - Pavement Preservation Program. This is the current capital project program to preserve Eugene's improved street system. The priority for this program is to preserve streets that have not yet degraded to a point where reconstruction is required. Preserving a street through overlay or similar treatment is four to five times more cost effective than waiting to repair a street after it requires reconstruction. This program was initiated in 2003 and, until passage of the 2008 street repair bond, was predominately funded with local fuel tax and the reimbursement fee component of transportation system development charges.



Paving on Augusta Street

Warm Mix Asphalt - Warm mix asphalt pavement is identical to conventional hot mix asphalt pavement, except that through a special mixing process it is produced at a temperature approximately 50 to 100 degrees cooler than conventional hot mix asphalt. In Eugene, all asphalt concrete producers have retrofitted their plants to produce warm mix asphalt using a water foaming process. The foaming process allows temperature reductions of approximately 50 degrees. This reduction in temperature has several advantages:

1. Reduces energy consumption to produce asphalt concrete, lowering costs and greenhouse gas emissions.
2. Reduces off-gassing (smoke) of asphalt concrete by keeping temperature under the boiling point of "light oils" in the liquid asphalt, benefiting construction workers and the public.
3. Because the light oils are not boiled off, the liquid asphalt coating the rock particles is slightly thicker, which slows the aging process of the asphalt.
4. Reduces the oxidation caused during high temperature production that causes premature aging of the asphalt, which should provide a longer life product.

The use of warm mix asphalt pavement is required on City of Eugene projects.

SRRP MISSION

Per Resolution No. 4953, the SRRP "will prepare a report, separate and distinct from the report prepared by the outside auditor, documenting the City's use of the bond proceeds and noting whether the bond proceeds were used in compliance with the terms of this Resolution."

CRITERIA FOR PROJECT SELECTION AND SCHEDULING

STREET PROJECTS

Street projects to be included in the bond were specifically listed (see Appendix A). All street projects were identified by the Public Works Maintenance Pavement Management System as priorities for repair. In addition, the following criteria were used to select streets for the bond measure:

1. Citizen input with respect to prioritizing major streets in need of reconstruction.
2. Scientific information about needed street rehabilitation and reconstruction from the pavement management system.
3. Geographic distribution throughout the community to ensure all areas of the City receive a benefit from the bond proceeds.

Unlike the trends reported in previous years where actual costs were substantially lower than budgeted costs, in 2012 total projected expenses for the bond projects are within 10 percent of the costs originally budgeted in the bond. This is primarily due to increasing construction costs, which is further explained in the Economic Status and Forecast section below.

Based on the favorable bidding climate early in the bond and cost reductions due to rehabilitation and reconstruction techniques realized in the first two years of bond construction, the City constructed the majority of the projects prior to 2013. The original bond allowed that if all of the projects listed in the bond measure were completed and there were bond proceeds remaining, the Council may add other street preservation projects to the list. In 2011, the Eugene City Council approved additional streets to be repaired with remaining bond funds (See Appendix A).

A list of the street bond projects, their estimated repair cost from the Pavement Management System in 2008 dollars, and the year scheduled for construction is included in Appendix A. For projects completed in 2009 through 2012, the list includes a comparison of programmed costs to actual costs with any difference noted. Differences in total project costs on individual projects will affect the funding available for future projects. The list also includes projected costs for all projects through the end of the bond in 2013, including the streets added to the list by City Council in 2011.

The remaining projects from the original bond measure to be constructed in 2013 are Blair Street, Van Buren Street, and a section of Coburg Road. Including streets added by City Council in 2011 to use the remaining bond funds, thirteen street sections with total programmed budget of over \$11 million are scheduled for 2013. The City plans to supplement the bond funds with local gas tax funds as necessary to complete the entire list of additional streets Council approved in 2011.

OFF-STREET (SHARED-USE) PATH PROJECTS

The 2008 bond measure states that the City will allocate not less than \$350,000 each year to fund the overlay and reconstruction of existing off-street bicycle and pedestrian paths. These projects were not named in the bond measure, but a list of prioritized projects has been developed. As with streets, Public Works Maintenance performs routine inspection of off-street paths. Information on path condition was cross-referenced with path pedestrian and bicycle usage counts collected by the Public Works Engineering Transportation Planning team. City staff



Paving on West Bank Path

presented the data to the citizen Bicycle and Pedestrian Advisory Committee (BPAC) and collaboratively developed a prioritized list of off-street path repair projects. This list is included in Appendix A (also see the accompanying bond project map in Appendix B).

USE OF OTHER FUNDS IN CONJUNCTION WITH STREET BOND FUNDS

The use of street-repair bond funds is limited to the overlay or reconstruction of the driving surface of streets as well as to preserve existing integral elements of the street such as curbs, gutters, sidewalks, on-street bike lanes, traffic signals, street lights, medians, traffic calming devices, and other integral parts of a street preservation project (Council Resolution 4953, Section D).

However, there is often a need or an opportunity to complete additional work as part of the construction contracts for street preservation. The additional work may be funded by wastewater and stormwater utility funds, local gas taxes, transportation system development charges, or state and federal grants.

Wastewater and stormwater utility funds are used to repair and rehabilitate the existing wastewater and stormwater systems, respectively, that underlie much of the city's street system. Making these repairs in coordination with the street bond projects is a cost-effective way to accomplish the work and precludes emergency repairs in the future that would require cutting new pavement.

Local gas taxes were used for preliminary engineering conducted in advance of the street bond measure's passage. This assured a quick start of bond measure projects in 2009. Local gas taxes have also been used to include adjacent streets in the street bond project contracts.

Transportation system development charges (SDCs) are often used to upgrade existing signal systems during pavement preservation projects. The work typically includes installing new conduit under the pavement to connect the traffic detection loops to the signal controller.

SUSTAINABILITY

The City of Eugene continually strives to improve the quality, environmental footprint, and cost efficiency of its projects. In 2012, Eugene continued to use warm mix asphalt pavement and in-place recycling to meet these sustainability criteria.

Warm mix asphalt continued to be specified for all the paving projects in 2011 in place of conventional hot mix asphalt. As explained in the Key Terms section of this report warm mix asphalt provides environmental and human health benefits as well as a potentially longer lasting product. The National Cooperative Highway Research Program (NCHRP) estimates that there is a CO₂ savings of 12 pounds per ton of pavement using warm mix as compared to hot mix asphalt. The NCHRP also estimates that the use of warm mix asphalt reduces the energy used in the asphalt batch plant by about 30% compared to hot mix asphalt.

In-place recycling (see Key Terms) was used on the street bond projects on 24th Avenue, Augusta Street, Riverview Street, and Royal Avenue. It is estimated that using the in-place recycling process for these streets eliminated the need to excavate and haul away 22,000 cubic yards of material and eliminated hauling 39,000 tons of new base rock to the site, saving over 3,500 truck trips for the four streets.

The City of Eugene started using the in-place recycling process to realize the environmental, economic and social benefits to the community that can come from this type of process. The reduction in land filling, material mining, and truck hauling all have direct environmental benefits; the reduction in excavating existing roadway materials and importing virgin construction materials have direct economic benefits; and the reduction in construction time has a direct social benefit.

Funding Status and Forecast

In 2012, construction costs increased significantly over early bond years. For example, according to global energy advisor Poten & Partners, Inc., the average price for asphalt cement in the Portland area in June 2011 was \$541 per ton and in June 2012 was \$639 per ton, an increase of about 18% (published on the Oregon Department of Transportation (ODOT) website and used to calculate asphalt escalation factors). According to the Construction Costs Forecast by ODOT (published October 2012) ODOT projects that construction costs will continue to increase at a more steady rate rather than with the volatility of recent years, for a variety of reasons:

- Extreme volatility in fossil fuel market is not expected, with prices remaining steady over the next few years (with seasonal fluctuations).
- Construction materials cost forecasts a “bump up” for the remainder of 2013 with steady increases through 2016 with producer prices overall steady (forecast average change per FY 3.1% through FY2020).
- Machinery/equipment cost forecasts a bump up for the remainder of 2013 and then normal or average prices overall (forecast average change per FY 2.3% through FY 2020).

As noted in previous reports to the SRRP, construction bids, innovative treatment technologies, and other variables substantially reduced project costs through the first three years of the bond. The total budget for bond projects constructed in 2009 through 2012 was \$30,507,000 (in 2008 dollars); total expenditures were approximately \$25,265,000. As noted above, in 2011 City Council approved 22 additional streets to be repaired with any remaining bond funds. At this time, it is projected that the cost of the 22 additional streets is \$16.8 million. The City plans to construct 10 of the additional street sections in 2013 with remaining bond funds, with the remaining 12 street sections to be constructed between 2014 and 2016 with local gas tax funds.

2012 Bond Construction Projects

The following pages are reports on individual street projects. The total costs for each project listed are estimated as not all of the 2012 construction-related costs have been finalized as of December 1, 2012.



In-place road recycling on Augusta Street

24th Avenue from Jefferson Street to Chambers Street

Project Description: This project consisted of reconstruction of 24th Avenue from Jefferson Street to Chambers Street in south Eugene. This work on 24th Avenue was combined with a local gas tax funded project to rehabilitate Jefferson Street from 19th Avenue to 24th Avenue and reconstruct Jefferson Street from 25th Avenue to 28th Avenue.

Treatment Methodology: Pavement testing recommended the section from Jefferson Street to Chambers Street needed to be reconstructed due to the poor condition of the street surfacing, which was exhibiting load-related cracking distress in the eastbound lane some cracking distress in the westbound lanes, except extensive cracking distress was observed in both lanes from Polk Street to Chambers Street. Rather than reconstruct this street with conventional methods, it was decided to reconstruct this street using the in-place recycling technique (see Key Terms) with the cement-treated base and then paving with 7 inches of warm mix asphalt pavement.

Costs: Total project costs, from all funding sources, are estimated at \$942,000.

Total Bond Funds Programmed to the Project =	\$ 622,000
Total Projected/Actual Bond Funds Used =	\$ 934,000
<hr/>	
Difference =	\$ -312,000

Prior to budgeting for the bond measure, preliminary testing determined this street could be rehabilitated with a mix of inlay, spot repair reconstruction and partial depth reconstruction. Upon scheduling this project for construction, the street had very quickly deteriorated and full depth reconstruction was recommended based on further testing. While the project costs are higher than originally anticipated when the street repair bond was developed, using the reclamation technique for construction was significantly less expensive than a conventional reconstruction, which was estimated to be approximately \$1,222,000.

Additional Sources of Funding: Stormwater and wastewater utility funds.

Project Photos:



24th Avenue pre-construction



24th Avenue post-construction

Augusta Street from 16th Avenue from 26th Avenue and Riverview Street from Sylvan Street to 16th Avenue and to the northbound I-5 Franklin Blvd off ramp

Project Description: This project consisted of reconstruction of Augusta Street from 16th Avenue to 26th Avenue and Riverview Street from Sylvan Street to 16th Avenue and to the northbound I-5 Franklin Blvd off ramp in southeast Eugene. This work on Augusta Street was combined with work to rehabilitate 16th and 26th Avenues between Riverview and Augusta using local gas taxes.

Treatment Methodology: Augusta and Riverview Streets were in very poor condition with significant fatigue (load related) and block cracking over approximately 80% of the surface. Pavement testing confirmed the need to reconstruct these streets due to the poor condition of the street surfacing. Because of poor subgrade soils and pavement too thin to support collector-level traffic loading, it was decided to reconstruct the streets using the in-place recycling technique (see Key Terms) which creates a cement-treated base by mixing existing materials with dry cement and water. The cement-treated base was then paved with 7 inches of warm mix asphalt pavement.

Costs: Total project costs, from all funding sources, are estimated at \$1,261,000.

Total Bond Funds Programmed to the Project = \$1,516,000

Total Projected/Actual Bond Funds Used = \$1,121,000

Difference = \$ 395,000

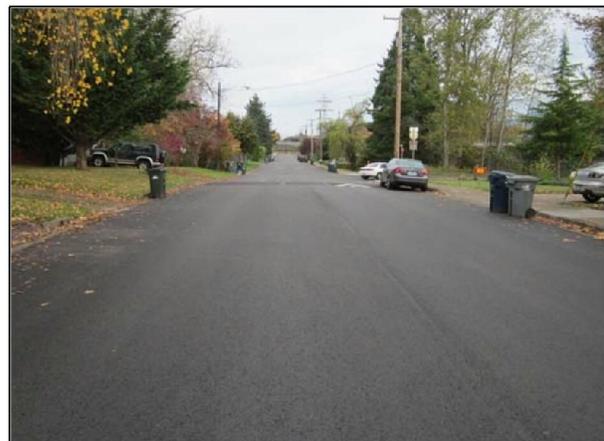
Using the reclamation technique for construction was significantly less expensive than a conventional reconstruction as originally anticipated.

Additional Sources of Funding: Road capital (traffic calming), local gas tax (16th and 26th Avenues), stormwater utility and wastewater utility funds.

Project Photos:



Augusta Street pre-construction



Augusta Street post-construction

Brewer Street from Gilham Road to Norkenzie Road

Project Description: This project included reconstruction of Brewer Street in northeast Eugene from Gilham Road to Norkenzie Road.

Treatment Methodology: Sections of this street were in poor condition and pavement testing and evaluation showed that the west end of the project needed full depth reconstruction and the east end needed partial depth reconstruction (removal of asphalt pavement and a portion of the underlying base rock).

Costs: Total project costs, from all funding sources, are estimated at \$346,000.

Total Bond Funds Programmed to the Project =	\$146,000
Total Projected/Actual Bond Funds Used =	\$346,000
<hr/>	
Difference =	\$ -200,000

In testing this street, it was determined that the subgrade soils and thin pavement were too weak to support construction traffic and future traffic loading and the street needed a more expensive treatment than originally anticipated when the street repair bond was developed.

Additional Sources of Funding: Stormwater utility fund.

Project Photos:



Brewer Street pre-construction



Brewer Street post-construction

Curtis Avenue from Norkenize Road to 550 feet East (cul-de-sac)

Project Description: This project included reconstruction of Curtis Street in northeast Eugene from Norkenzie Road to 550 feet east to the end of the cul-de-sac.

Treatment Methodology: Sections of this street were in poor condition and pavement testing and evaluation showed that the street needed partial depth reconstruction (removal of asphalt pavement and a portion of the underlying base rock).

Costs: Total project costs, from all funding sources, are estimated at \$91,000.

Total Bond Funds Programmed to the Project =	\$38,000
Total Projected/Actual Bond Funds Used =	\$91,000
<hr/>	
Difference =	\$ -53,000

In testing this street, it was determined that the subgrade soils and thin pavement were too weak to support construction traffic and future traffic loading and the street needed a more expensive treatment than originally anticipated when the street repair bond was developed.

Additional Sources of Funding: None.

Project Photos:



Curtis Avenue pre-construction



Curtis Avenue post-construction

Gilham Road from Honeywood Street to Crescent Avenue

Project Description: This project included rehabilitation of Gilham Road in northeast Eugene from Honeywood Street to Crescent Avenue.

Treatment Methodology: While this street exhibited nearly continuous low to medium severity cracking, pavement testing determined there was sufficient existing pavement and base aggregate to rehabilitate this street by removing and repaving (“inlay”) 4 inches of asphalt pavement.

Costs: Total project costs, from all funding sources, are estimated at \$493,000.

Total Bond Funds Programmed to the Project =	\$305,000
Total Projected/Actual Bond Funds Used =	\$469,000
<hr/>	
Difference =	\$-164,000

In order to remove enough depth of pavement to eliminate reflective cracking from occurring in 5 to 7 years, a thicker depth of pavement needed to be removed than originally anticipated when the Street Repair Bond was developed, which increased the project cost.

Additional Sources of Funding: Stormwater and wastewater utility funds

Project Photos:



Gilham Road pre-construction



Gilham Road post-construction

Goodpasture Island Road from Kingsley Road to 1,250 feet north of Valley River Drive

Project Description: This project included the rehabilitation of Goodpasture Island Road from Kingsley Road to 1,250 feet north of Valley River Drive (near Delta Ponds Bridge) in north Eugene.

Treatment Methodology: Pavement testing confirmed that this section could be rehabilitated with an inlay treatment (remove existing and repave same pavement thickness) of 2 inches of asphalt pavement. There were some sections that only required a seal treatment.

Costs: Total project costs, from all funding sources, are estimated at \$196,000.

Total Bond Funds Programmed to the Project = \$ 448,000

Total Projected/Actual Bond Funds Used = \$ 193,000

Difference = \$ 255,000

Because some sections only required a seal treatment, project costs were less than anticipated in 2008.

Additional Sources of Funding: Stormwater and wastewater utility funds.

Project Photos:



Goodpasture Island Road pre-construction



Goodpasture Island Road post-construction

Royal Avenue from Highway 99 to 100 feet east of Waite Street

Project Description: This project consisted of reconstruction of Royal Avenue from Highway 99 to 100 feet east of Waite Street in northwest Eugene.

Treatment Methodology: Royal Avenue east of Waite Street was in poor condition and had insufficient structure to support arterial-level traffic loading. Based on the condition and projected traffic loading, pavement testing supported full depth reconstruction of this street. It was decided to reconstruct this street using the in-place recycling technique (see Key Terms) which creates a cement-treated base by mixing existing materials with dry cement and water. The 9-inch-thick cement-treated base was then paved with 6 inches of warm mix asphalt pavement.

Costs: Total project costs, from all funding sources, are estimated at \$1,030,000.

Total Bond Funds Programmed to the Project =	\$1,565,000
Total Projected/Actual Bond Funds Used =	\$1,022,000
<hr/>	
Difference =	\$ 543,000

Existing materials and soils were found to support the in-place recycling technique which was significantly less expensive than a full depth reconstruction repair as originally anticipated when the street repair bond was developed

Additional Sources of Funding: Stormwater and wastewater utility funds.

Project Photos:



Royal Avenue pre-construction



Royal Avenue post-construction

Silver Lane from River Road to Grove Street

Project Description: This project consisted of repairing Silver Lane from River Road to Grove Street in north Eugene.

Treatment Methodology: Silver Lane was in fair condition and pavement testing supported rehabilitating the street with an inlay treatment (see Key Terms, above) with full depth reconstruction at isolated spots where base failures were evident.

Costs: Total project costs, from all funding sources, are estimated at \$567,000.

Total Bond Funds Programmed to the Project = \$ 305,000

Total Projected/Actual Bond Funds Used = \$ 450,000

Difference = \$ - 145,000

In order to remove enough depth of pavement to eliminate reflective cracking from occurring in 5 to 7 years, a thicker inlay treatment depth of the pavement was needed than originally anticipated when the street repair bond was developed, which increased the project cost.

Additional Sources of Funding: Stormwater and wastewater utility funds, and transportation system development charges.

Project Photos:



Silver Lane pre-construction



Silver Lane post-construction

Taney Street from Barger Drive to Marshall Avenue

Project Description: This project consisted of rehabilitating Taney Street from Barger Drive to Marshall Avenue in north Eugene.

Treatment Methodology: Taney Street was in fair condition and pavement testing supported rehabilitating the street with an inlay treatment (see Key Terms, above) with full depth reconstruction at isolated spots where base failures were evident.

Costs: Total project costs, from all funding sources, are estimated at \$496,000.

Total Bond Funds Programmed to the Project =	\$ 349,000
Total Projected/Actual Bond Funds Used =	\$ 483,000
<hr/>	
Difference =	\$ - 134,000

In order to remove enough depth of pavement to eliminate reflective cracking from occurring in 5 to 7 years, a thicker inlay treatment depth of the pavement was needed than originally anticipated when the street repair bond was developed, which increased the project cost.

Additional Sources of Funding: Stormwater and wastewater utility funds, and transportation system development charges.

Project Photos:



Taney Street pre-construction



Taney Street post-construction

Terry Street from 100 feet north of Avalon Street to Royal Avenue

Project Description: This project consisted of rehabilitating Terry Street from 100 feet north of Avalon Street to Royal Avenue in west Eugene.

Treatment Methodology: Terry Street had a significant amount of medium severity cracking with some areas of high severity cracking. A mix of partial depth reconstruction and inlay treatment were used to rehabilitate this pavement.

Costs: Total project costs, from all funding sources, are estimated at \$385,000.

Total Bond Funds Programmed to the Project =	\$ 978,000
Total Projected/Actual Bond Funds Used =	\$ 374,000
<hr/>	
Difference =	\$ 604,000

When the street repair bond was developed, it was anticipated that this section of Terry Street would need full or partial depth reconstruction. Based on pavement testing, it was determined only the northbound side of the street on the south half of the project needed partial depth reconstruction. The rest of the street only required an inlay treatment, significantly reducing the overall project cost.

Additional Sources of Funding: Stormwater and wastewater utility funds, and transportation system development charges.

Project Photos:



Terry Street pre-construction



Terry Street post-construction

Warren Street from Bailey Hill Road to Timberline Drive

Project Description: This project consisted of rehabilitating Warren Street from Bailey Hill Road to Timberline Drive in southwest Eugene.

Treatment Methodology: Warren Street had a significant amount of cracking on the southern end of the project. There were areas with cracking elsewhere along the project, although primarily in the northbound lane. Poor quality gravel base was encountered beneath the asphalt pavement during pavement testing. Based on the pavement testing it was determined that a 5 inch deep inlay treatment was needed, with full depth spot repairs where the pavement and base had failed.

Costs: Total project costs, from all funding sources, are estimated at \$460,000.

Total Bond Funds Programmed to the Project =	\$ 217,000
Total Projected/Actual Bond Funds Used =	\$ 452,000
<hr/>	
Difference =	\$ - 235,000

The depth of distressed pavement to be removed with the inlay treatment was deeper than was anticipated and more full depth spot repairs were needed than originally anticipated when the street repair bond was developed increasing the project costs.

Additional Sources of Funding: Stormwater utility funds and transportation system development charges.

Project Photos:



Warren Street pre-construction



Warren Street post-construction

West Bank Path Repairs

Project Description: This project replaced the existing asphalt surface with a concrete surface on the West Bank Path from the Greenway Bike Bridge to Stephens Drive.

Treatment Methodology: The existing asphalt path was cracking due to expansion and contraction of the underlying soils. Sections of the path that were deemed to be stable were overlaid with 6 inches of concrete reinforced with structural fibers. Where the existing path was experiencing severe cracking and movement the existing path surface was removed and the path was stabilized with additional base rock and/or reinforcement.

Structural fibers were incorporated into the new concrete path to help prevent cracking due to soil expansion and contraction. The pavement structure thickness is based on the soil conditions and use of the path by emergency and maintenance vehicles.

Costs: Total project costs, from all funding sources, are estimated at \$361,000.

Total Bond Funds Programmed to the Project = \$350,000

Total Projected/Actual Bond Funds Used = \$361,000

Difference = \$ -11,000

Project Photos:



West Bank Path pre-construction



West Bank Path post-construction

5-Year Street Bond Project List - Costs and Forecast

Project Map #	Street name	From	To	Ward(s)	Proposed Treatment	Programmed Cost (2008)	Revised Programmed Cost	Projected/ Actual Cost	Over / (Under) Programmed Cost
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Construction Year 2009

6	Bailey Hill Rd	18th Ave	East Side Of Bertelsen	8	Reconstruct/Overlay	\$ 1,866,000	\$ 1,866,000	\$ 883,000	\$ (983,000)
15	Goodpasture Is Rd	Norkenzie Rd	Delta Hwy Bridge	5	Overlay	\$ 367,000	\$ 367,000	\$ 435,000	\$ 68,000
20	Railroad Blvd	Van Buren	Chambers	7	Overlay	\$ 421,000	\$ 421,000	\$ 398,000	\$ (23,000)

Construction Year 2009 Totals = \$ 2,654,000 \$ 2,654,000 \$ 1,716,000 \$ (938,000)

Construction Year 2010

1	18th Ave	510' East Of Chambers	City View	1	Reconstruct/Overlay	\$ 1,733,000	\$ 1,733,000	\$ 1,333,000	\$ (400,000)
14	Goodpasture Is Rd	Bridge Over Slough	Kingsley Rd	5	Reconstruct/Overlay	\$ 1,319,000	\$ 1,319,000	\$ 689,000	\$ (630,000)
		1750-feet North of Valley River Dr	1250-feet North of Valley River Dr						
16	Harlow Rd	I-5	Coburg	4	Reconstruct/Overlay	\$ 1,202,000	\$ 1,202,000	\$ 889,000	\$ (313,000)
18	Patterson	E 13th Ave	23rd Ave	3	Reconstruct	\$ 2,134,000	\$ 2,134,000	\$ 1,285,000	\$ (849,000)
2	18th Ave	Hilyard	Patterson	1					
3	23rd Ave	Hilyard	Patterson	3					
29	Willamette St	306' North Of 29th Ave	140' South Of 29th Ave	2	Reconstruct	\$ 405,000	\$ 405,000	\$ 550,000	\$ 145,000
29	Willamette St	46th Ave	52nd Ave	2	Overlay	\$ 500,000	\$ 500,000	\$ 412,000	\$ (88,000)

Construction Year 2010 Totals = \$ 7,293,000 \$ 7,293,000 \$ 5,158,000 \$ (2,135,000)

Construction Year 2011

2	18th Ave	Patterson	Washington	1,3	Reconstruct/Overlay	\$ 2,052,000	\$ 2,052,000	\$ 1,773,000	\$ (279,000)
5	Alder	Broadway	18th Ave	3	Reconstruct/Overlay	\$ 964,000	\$ 964,000	\$ 1,190,000	\$ 226,000
9	Coburg Rd	850' North Of Cal Young	450' North Of I-105 Off Ramp	4	Overlay	\$ 1,479,000	\$ 1,479,000	\$ 1,457,000	\$ (22,000)
11	Conger St	7th Ave	11th Ave	7	Overlay	\$ 147,000	\$ 147,000	\$ 190,000	\$ 43,000
17	Hilyard St	E 24th Ave	34th Ave	2,3	Reconstruct	\$ 2,900,000	\$ 2,900,000	\$ 1,360,000	\$ (1,540,000)
19	Pearl	4th Ave	200' North Of Broadway	7	Reconstruct/Overlay	\$ 470,000	\$ 470,000	\$ 667,000	\$ 197,000
21	River Rd	Horn Ln	Railroad	7	Overlay	\$ 2,000,000	\$ 2,000,000	\$ 1,118,000	\$ (882,000)
29	Willamette St	140' South Of 29th Ave	46th	2	Reconstruct/Overlay	\$ 2,254,000	\$ 2,254,000	\$ 1,755,000	\$ (499,000)
30	Wilson St	W 5th Ave	W 7th Ave	7	Overlay	\$ 100,000	\$ 100,000	\$ 81,000	\$ (19,000)

Construction Year 2011 Totals = \$ 12,366,000 \$ 12,366,000 \$ 9,591,000 \$ (2,775,000)

Construction Year 2012

4	24th Ave	Jefferson	Chambers	1	Reconstruct/Overlay	\$ 622,000	\$ 622,000	\$ 934,000	\$ 312,000
31	Augusta St	16th Ave	26th Ave	3	Reconstruct	\$ 1,516,000	\$ 1,516,000	\$ 1,121,000	\$ (395,000)
23		Sylvan	16th Ave						
22	Riverview St	Franklin Off Ramp	247' South Of Franklin Off Ramp						
8	Brewer St	Gilham Rd	Norkenzie Rd	5	Reconstruct/Overlay	\$ 146,000	\$ 146,000	\$ 346,000	\$ 200,000
12	Curtis Ave	550' East Of Norkenzie	Norkenzie	5	Overlay	\$ 38,000	\$ 38,000	\$ 91,000	\$ 53,000
13	Gilham Rd	Honeywood St	Crescent	5	Overlay	\$ 305,000	\$ 305,000	\$ 469,000	\$ 164,000
14	Goodpasture Is Rd	Kingsley Rd	1250-FEET N of Valley River Drive	5	Overlay	\$ 448,000	\$ 448,000	\$ 193,000	\$ (255,000)
24	Royal Ave	Hwy 99	100' East Of Waite St	8	Reconstruct	\$ 1,565,000	\$ 1,565,000	\$ 1,022,000	\$ (543,000)
25	Silver Ln	River Rd	Grove	7	Overlay	\$ 305,000	\$ 305,000	\$ 450,000	\$ 145,000
32	Taney St	Barger	Marshall	6	Reconstruct	\$ 349,000	\$ 349,000	\$ 483,000	\$ 134,000
26	Terry St	1100' North Of Avalon St	Royal	6	Reconstruct/Overlay	\$ 978,000	\$ 978,000	\$ 374,000	\$ (604,000)
28	Warren St	Bailey Hill	Timberline Dr	8	Reconstruct/Overlay	\$ 217,000	\$ 217,000	\$ 452,000	\$ 235,000

Construction Year 2012 Totals = \$ 6,489,000 \$ 6,489,000 \$ 5,935,000 \$ (554,000)

Construction Year 2013 *These streets were added by City Council and were not part of the original Bond Measure

7	Blair Blvd	2nd Ave	Monroe	7	Reconstruct/Overlay	\$ 1,228,000	\$ 1,300,000	\$ -	\$ -
27	Van Buren	RR Crossing	Blair Blvd	7	Reconstruct	\$ 305,000	\$ 388,000	\$ -	\$ -
9	Coburg Rd	Crescent	South Onramp Beltline	4	Overlay	\$ 515,000	\$ 515,000	\$ -	\$ -
33	5th Avenue*	High Street	Blair Street	7	Reconstruct/Overlay	*	\$ 2,000,000	\$ -	\$ -
34	5th Avenue*	SS HWY 99	ES Bailey Hill Rd	7,8	Reconstruct	*	\$ 1,900,000	\$ -	\$ -
36	10th Avenue*	WS Olive St	WS Jefferson St	7	Reconstruct	*	\$ 922,000	\$ -	\$ -
40	Broadway*	WS Lincoln St	ES Monroe St						
49	Olive Street*	NS 10th Ave	NS 13th Ave						
37	18th Avenue*	Washington Street	510' East of Chambers	1	Reconstruct	*	\$ 2,800,000	\$ -	\$ -
39	Alder Street*	SS 18th Ave	NS 24th Ave	3	Reconstruct	*	\$ 1,043,000	\$ -	\$ -
41	Coburg Road*	City Limits	Crescent Ave	4,5	Overlay	*	\$ 334,000	\$ -	\$ -
47	Hilyard Street*	SS E Broadway	NS E 11th Ave	3	Overlay	*	\$ 329,000	\$ -	\$ -
54	Willamette Street*	NS 19th Ave	SS DRWY 2415	1	Overlay	*	\$ 419,000	\$ -	\$ -

* These streets were added by City Council and were not part of the original Bond Measure

Construction Year 2013 Totals = \$ 2,048,000 \$ 11,950,000 \$ - \$ -

5-Year Street Bond Project List - Costs and Forecast

Project Map #	Street name	From	To	Ward(s)	Proposed Treatment	Programmed Cost (2008)	Revised Programmed Cost	Projected/ Actual Cost	Over / (Under) Programmed Cost
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Construction Year 2014 - 2016 (paid for with Local Gas Tax Funds) * These streets were added by City Council and were not part of the original Bond Measure

35	8th Avenue*	WS Lincoln St	WS Monroe St	7	Reconstruct	*	\$ 643,000	\$ -	\$ -
38	46th Avenue*	WS Donald St	ES Willamette St	2	Reconstruct	*	\$ 257,000	\$ -	\$ -
42	Donald Street*	SS E 46th Ave	NS Fox Hollow Rd	2	Overlay	*	\$ 763,000	\$ -	\$ -
43	Donald Street*	Willamette St	40th Ave	2	Reconstruct/Overlay	*	\$ 500,000	\$ -	\$ -
44	Friendly Street*	NS W 24th Ave	NS W 28th Ave	1	Overlay	*	\$ 346,000	\$ -	\$ -
45	Garden Way*	SS Harlow Rd	S 110 Sisters View Av	4	Overlay	*	\$ 609,000	\$ -	\$ -
46	Harris Street*	18th Ave	28th Ave	3	Reconstruct/Overlay	*	\$ 1,738,000	\$ -	\$ -
48	Marshall Avenue*	Hughes	Echo Hollow Rd	6	Overlay	*	\$ 556,000	\$ -	\$ -
50	Roosevelt Blvd.*	Danebo Rd	Terry St	8	Overlay	*	\$ 371,000	\$ -	\$ -
51	Terry Street*	Olympic Circle	Barger	6	Overlay	*	\$ 264,000	\$ -	\$ -
52	Valley River Way*	SS Valley River Dr	SS Cul-de-Sac	5	Reconstruct/Overlay	*	\$ 383,000	\$ -	\$ -
53	Willakenzie Rd*	ES Bogart Ln	ES Coburg Rd	4	Overlay	*	\$ 593,000	\$ -	\$ -

* These streets were added by City Council and were not part of the original Bond Measure

Construction Year 2014-2016 Totals = \$ - \$ 7,023,000

Off-Street (Shared Use) Path Project List

Project Map ID	Off-Street Path Project	From	To	Ward(s)	Proposed Treatment	Programmed Cost (2008)	Revised Programmed Cost	Projected/ Actual Cost	Over / (Under) Programmed Cost
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Construction Year 2009

A	Amazon Path	19th Ave	31st Ave	3	Reconstruct	\$ 648,000	\$ 648,000	\$ 730,000	\$ 82,000
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Construction Year 2010

B	Fern Ridge Path	Van Buren St.	Chambers St.	1	Reconstruct				
C	Westmoreland Connector Path	Polk Street	500' West of Polk St.	1	Reconstruct	\$ 410,000	\$ 410,000	\$ 405,000	\$ (5,000)

Construction Year 2011

D	South Bank Path	Maurie Jacobs Park	River Play Park	7	Reconstruct	\$ 367,000	\$ 367,000	\$ 466,000	\$ 99,000
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Construction Year 2012

E	West Bank Path	Greenway Bridge	Stephens Dr.	7	Reconstruct	\$ 350,000	\$ 350,000	\$ 361,000	\$ 11,000
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Construction Year 2013

F	South Bank Path	River Play Park	DeFazio Bridge	7	Reconstruct	\$ 350,000	\$ 350,000	\$ -	\$ -
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Total Off-Street Path Project Costs = \$ 2,125,000 \$ 2,125,000 \$ 1,962,000 \$ 187,000

Summary of Bond Funds

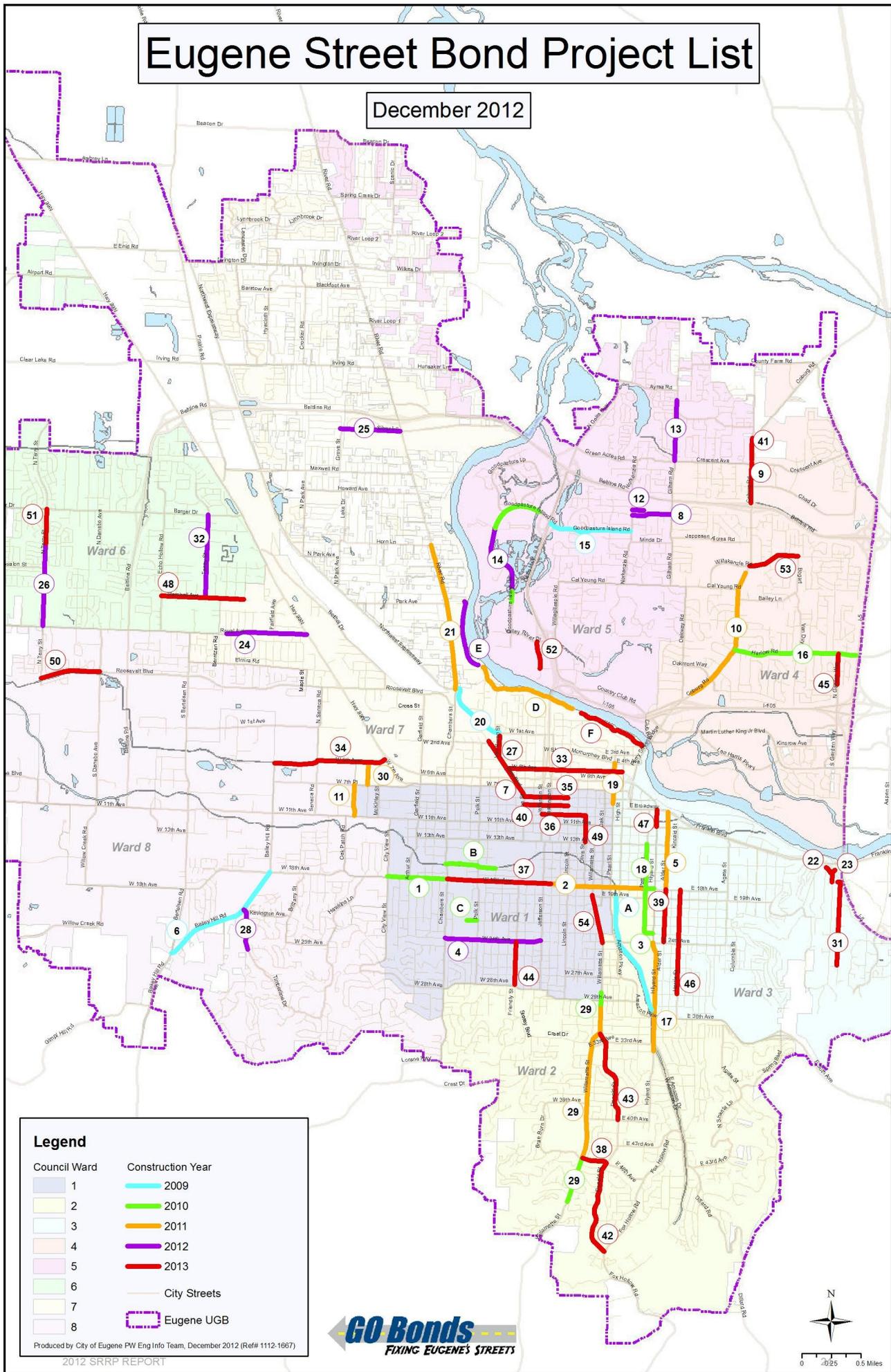
Total Street Projects in 2008 Dollars	\$ 30,850,000
Total Off-Street Path Projects	\$ 2,125,000
Bond Issuance Costs	\$ 130,000
Inflation	\$ 2,795,000
Total Bond Funds	\$ 35,900,000

Summary of Bond Revenue and Expenditures

Bond Funds Available for Construction Costs (amount above less issuance costs)	\$ 35,770,000
Projected Street and Shared Use Path Expenditures thru FY13	\$ 36,662,000
Projected Bond Planning/Pre-Design Expenditures	\$ 903,000
Sub-Total Bond Costs thru FY13	\$ 37,565,000
Projected Local Gas Tax Funding Needed to Supplement Bond Funds thru FY13	\$ 1,795,000
Projected Local Gas Tax Funding Needed in FY14 - FY16	\$ 7,023,000
Projected Total Local Gas Tax Funding to Complete Projects	\$ 8,818,000

Eugene Street Bond Project List

December 2012



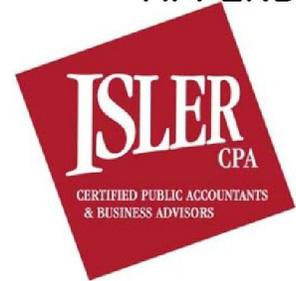
Legend

- | | |
|---------------------|--------------------------|
| Council Ward | Construction Year |
| 1 | 2009 |
| 2 | 2010 |
| 3 | 2011 |
| 4 | 2012 |
| 5 | 2013 |
| 6 | City Streets |
| 7 | Eugene UGB |
| 8 | |

Produced by City of Eugene PW Eng Info Team, December 2012 (Ref# 1112-1067)

2012 SRRP REPORT





INDEPENDENT ACCOUNTANT'S REPORT ON APPLYING AGREED-UPON PROCEDURES

To Jon Ruiz, City Manager
City of Eugene
Eugene, Oregon

We have performed the procedures enumerated below, which were agreed to by the City of Eugene ("City"), solely to assist you in connection with the determination of whether the expenditure of general obligation bond funds approved for issuance through voter's approval of Ballot Measure 20-145 were expended in accordance with the purposes and limitations outlined in City Council Resolution No. 4953; namely that such expenditures were: a) used only for costs related to street preservation projects, off-street bicycle and pedestrian path preservation projects and payment of bond issuance costs and not to expand the capacity of the street system; and b) limited to projects included in Exhibit A to the Resolution unless upon completion of all of the projects listed in Exhibit A the Council adds other street preservation projects to the list in order to utilize unspent bond proceeds. This agreed-upon procedures engagement was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants. The sufficiency of these procedures is solely the responsibility of those parties specified in this report. Consequently, we make no representation regarding the sufficiency of the procedures described below either for the purpose for which this report has been requested or for any other purpose.

All procedures were performed for expenditures incurred between December 1, 2011 and November 30, 2012. All procedures we performed were limited to documentation and information supplied to us by the City, as follows:

- An Excel spreadsheet detailing all payments made, charges allocated and/or invoices received by the City for expenditures related to the use of the bond proceeds
- Copies of Resolution No. 4953 and Ballot Measure 20-145
- Copies of bids and contracts issued by the City for any projects to be completed using the bond proceeds
- Copies of supporting documentation including, but not limited to, invoices, cancelled checks, payroll records, certifications of payments and bank statements; and
- Copies of the City's general ledger detail for the bond fund accounts, as needed

The procedures we performed and the associated findings are as follows:

- (1) *Expenditure testing.* From December 1, 2011 through November 30, 2012, total expenditures for the projects funded by the bond proceeds were \$7,492,730 per the City's general ledger detail of the bond fund. We tested \$3,712,383, or 50%, of those expenditures. All tested expenditures were supported by appropriate documentation such as invoices from vendors, certifications of payment, payroll records, signed contracts, and photographs of the work in progress. All tested expenditures were recorded in the proper account, fund and period and were spent on street projects included in Exhibit A of City Council Resolution No. 4953 or other street preservation projects approved by City Council, as permitted under Resolution 4953. No exceptions were noted.

(2) *Bond proceeds and project expenditures.* The following is a summary of bond proceeds and project expenditures from inception of the Street Bond project to November 30, 2012:

	From Issuance to 11/30/2009	12/1/2009 11/30/2010	12/1/2010 11/30/2011	12/1/2011 11/30/2012	Total
Bond proceeds	\$ 2,795,000	\$ 5,555,000	\$ 9,690,000	\$ 7,460,000	\$ 25,500,000
Project expenditures	2,682,749	5,737,236	9,631,111	7,492,730	25,543,826

(3) As of November 30, 2012 the City had \$4,000,000 outstanding on the line of credit facility (\$7,460,000 in proceeds plus interest of \$4,565 less \$3,464,565 repaid) with \$10,400,000 in authorized borrowing remaining on the bond (\$35,900,000 authorized less \$25,500,000 in proceeds).

Based on our limited testing, we noted that the City followed the purpose and limitation of the City Council Resolution 4953.

We were not engaged to and did not conduct an audit, the objective of which would be the expression of an opinion on the financial records. Accordingly, we do not express such an opinion. Had we performed additional procedures, other matters might have come to our attention that would have been reported to you.

This report is intended solely for the information and use of the City Manager of the City of Eugene, and is not intended to be and should not be used by anyone other than this specified party.

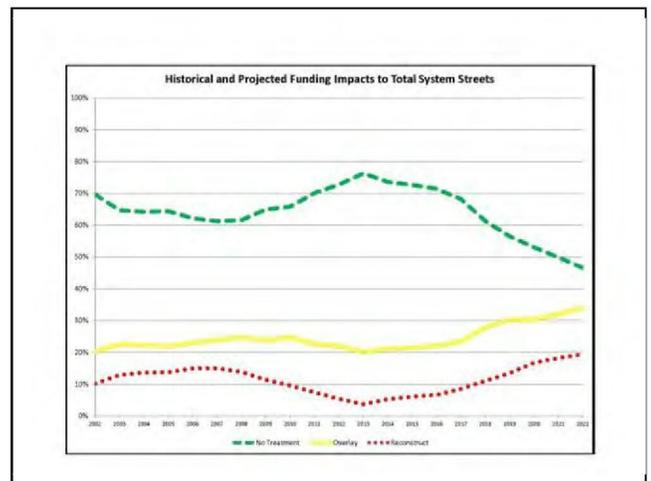
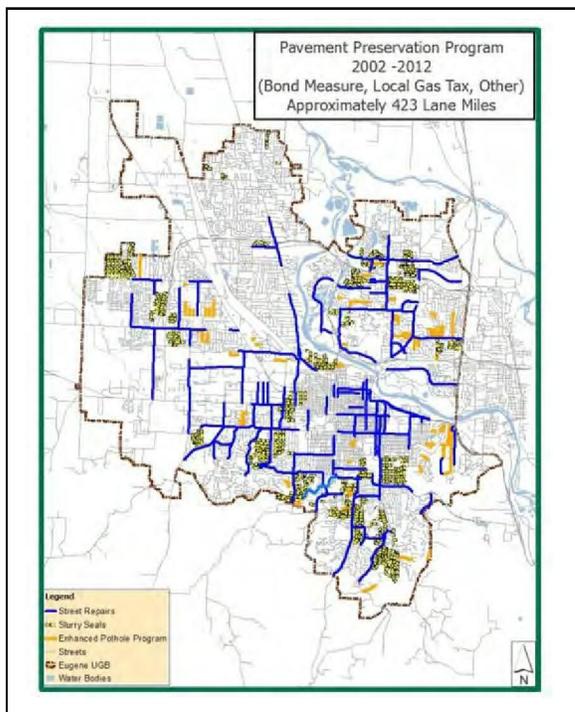
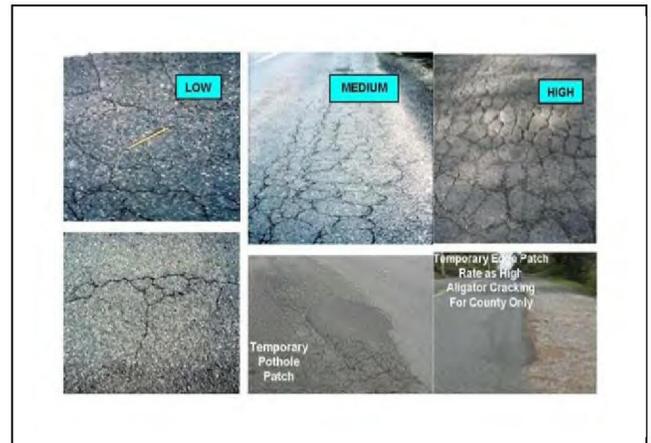
Isler CPA



Eugene, Oregon
 December 20, 2012

2013 PAVEMENT MANAGEMENT REPORT

An Update on Asphalt Pavement Conditions and Programs
(2012 Rating & Inventory Data)



Prepared by:
Public Works Maintenance
Surface Technical Team
1820 Roosevelt Blvd.
Eugene, OR 97402



Cover Photos (top left – clockwise): GO BONDS, Asphalt distress photos, System condition index graph, Completed pavement preservation projects map 2002 to2012.

EXECUTIVE SUMMARY

The annual Pavement Management Report is produced to update information and data regarding the City of Eugene's transportation system including improved streets, unimproved streets and off-street shared-use paths. This report provides surface descriptions and associated mileage, reviews current treatment programs and costs, and projects future treatment needs based on several funding scenarios.

The transportation system is conservatively estimated to represent a \$500 million public asset. This asset is typically described in lane miles and/or centerline miles. Currently, Public Works manages 1328 lane miles (533 centerline miles) of streets, and approximately 43 miles of off-street shared-use paths within the City limits. This report includes a breakdown of the street transportation system in terms of pavement type, level of improvement, and functional classification. Comparative statistical data includes both lane miles and centerline miles.

Street (and off-street shared-use path) condition data are collected by Public Works Maintenance staff through on-site inspections. An Overall Condition Index (OCI) score is then generated using CenterLine, the current Pavement Management System (PMS) used by the City. The CenterLine analysis helps establish efficient treatment requirements and identify financial implications of various response strategies. The PMS also provides street inventory and condition trends using 25 years of street condition information.

The current estimated street repair backlog on improved asphalt streets at the end of 2012 is \$100 million. Because street repair funding levels have not kept pace with rehabilitation needs, the City established a local gas tax in 2003 for a pavement preservation program (PPP). In 2008 a \$35.9 million, five-year bond measure was approved by voters and another five-year bond for \$43 million was approved by voters in 2012. Between these funding sources more than 126 streets in Eugene are identified to be repaired by 2018. The revenues from the local gas tax and the first bond measure have helped reduce the backlog of street repair projects. Specifically, based on the 2011 ratings and reported in the 2012 Pavement Management Report the calculated backlog of repairs on improved asphalt streets was \$118 million; as of the end of 2012 the current backlog has been calculated to be \$100 million.

In addition to the infusion of local gas tax and bond funding, other factors have contributed to the current status of the backlog:

- Several projects previously defined as needing to be reconstructed have been redesignated for overlay treatment after detailed testing was performed. An overlay treatment is much less expensive than a reconstruct treatment and can provide a comparable service life if the base is properly designed and undamaged.
- In recent years, the cost of projects has been lower than anticipated. However, according to the Construction Costs Forecast (ODOT, October 2012) costs will continue to increase at a more steady rate rather than with the volatility of recent years. Changes in costs for construction materials and labor will affect long-term backlog estimates.
- In 2009 the City was awarded approximately \$3 million of federal American Recovery and Reinvestment Act (ARRA) funds that were earmarked for projects constructed in 2010. This "bought down" the backlog in the short term, but because the ARRA funds were one-time funding, they will not result in a significant ongoing or cumulative effect.

EXECUTIVE SUMMARY – *(continued)*

- New construction techniques such as in-place recycling (also known as in-place cement treated base) which strengthens existing roadbed materials for reuse have been successfully used in place of conventional reconstruction techniques resulting in substantial cost savings.
- There has been an increase in inventory of improved streets through capital improvement projects (CIP), privately engineered public improvements (PEPI) and jurisdictional transfers.

Overall, even though the backlog figure declined in 2012, the current level of funding -- including the two bond measures -- is insufficient to stabilize the backlog long term. Annually, a number of streets needing a less expensive treatment are falling into a more costly treatment category due to lack of funding to repair them. It is also important to note that the backlog estimate is limited to improved asphalt streets. It does not take into account the repair needs for concrete streets, unimproved streets, sidewalks, off-street shared-used paths, or other elements of the transportation system.

The 2012 report uses three funding scenarios to project treatment needs and costs over a 10-year period. The analyses for all three scenarios use costs updated by Engineering in 2011 and are adjusted to include a 2% inflation factor. Following is a summary of the analyses:

- Maintaining the current level of funding, including the 2008 and 2012 bond measures, results in a total projected backlog of \$238 million in 10 years. Last year, prior to approval of the 2012 bond, the projected 10-year backlog was \$264 million.
- Increasing the funding level to \$12 million annually would prevent arterials and collectors currently from falling into the reconstruct range and eliminate the reconstruct backlog for arterial and collector streets in 10 years. Prior to this year's report, these results required a funding level of \$15 million annually.
- Increasing the funding level to \$19 million annually would prevent **any** street from falling into the reconstruct range and eliminate the total reconstruct backlog in 10 years. Prior to this year's report, these results required a funding level of \$18 million annually. Due to the substantial and increasing backlog in Residential treatment needs (residential streets account for approximately 64% (lane miles) of the system) additional funding is required to achieve the same results as in previous years.

SCOPE OF THIS REPORT

This report is made up of four primary sections:

Street Inventory: The street inventory is discussed including improvement status and functional classification definitions.

Pavement Management System (PMS): A brief history and description of the Pavement Management System used by the City is discussed, including rating methodology, pavement inspection frequency, pavement conditions described by the Overall Condition Index (OCI), specific distress definitions and the resulting reports.

Pavement Preservation Program (PPP): The Pavement Preservation Program is highlighted in this report, including Maintenance and Engineering Division roles, treatment types and estimated unit costs, sustainable construction, current, historical and projected funding, unimproved streets, projected funding, project prioritization, and off-street shared-use paths.

Projects: This section includes completed and future project lists and maps, including a list and map of the projects identified in the 2012 bond measure.

EUGENE'S STREET INVENTORY

The City of Eugene has jurisdictional responsibility for many different types and classifications of transportation facilities. Many factors such as age, development type, traffic loads, use, and future transportation needs affect the maintenance and rehabilitation planning for the system. The segment inventory component of the PMS system allows a reporting of both centerline miles (intersection to intersection) and lane miles of each segment of the system. While commonly used in reporting distance, centerline miles do not relate equally across streets of different widths or different number of lanes. For this report, comparisons typically are shown both in centerline and 12-foot-wide lane miles unless otherwise noted.

Improvement Status

For purposes of establishing budget allocations and rehabilitation priorities, and performing maintenance activities based on established maintenance policies, the City of Eugene divides the street inventory into two distinct categories:

Improved streets are those which have been fully designed for structural adequacy, have storm drainage facilities provided which include curbs and gutters, and have either an asphalt concrete (AC) or a Portland cement concrete (PCC) surface. Typically, these streets were either fully improved when the area was developed and paid for by the developer, or were improved through a local improvement district (LID) and paid for in part by the abutting property owners. In some cases a street may have been fully improved while under state or county jurisdiction and then surrendered to the City. Improved streets receive the highest level of ongoing maintenance and are eligible for rehabilitation funding through Eugene's Capital Improvement Program (CIP) and Pavement Preservation Program (PPP).

Unimproved streets are those with soil, gravel, or asphalt mat surfaces that have typically evolved to their existing state, have not been structurally designed, and have few if any, drainage facilities and no curbs or gutters. Typically, an unimproved street must be fully improved through a local improvement district, funded in part by the abutting property owners before a higher level of service will be provided (see “City of Eugene Street Maintenance Policy and Procedure Manual” for levels of maintenance service). Unimproved streets receive a low level of ongoing maintenance limited primarily to emergency pothole patching (three inches or greater in depth) and minimal roadside ditch maintenance. To address the growing number of potholes on City streets, the City Council augmented the street repair budget with General Fund allocations for a total of \$2.35 million from FY 2009 through FY 2011. Subsequently, Public Works has allocated \$200,000 per year from Road Fund for enhanced pavement repairs. The Maintenance Division has addressed potholes by either filling individual potholes or by performing maintenance overlays over entire street segments. During the past five years more than 75 unimproved streets, representing more than 23 lane miles, have been resurfaced as a temporary treatment. In addition, several unimproved streets have been brought up to full urban street standards through assessment projects, attributable in part to more flexible design standards.

The following tables categorize Eugene’s Improved and Unimproved Street System in Centerline Miles and 12-foot Lane Miles by Pavement Type and by Functional Class.

IMPROVED SYSTEM	Asphalt (ACP)		Asphalt over Concrete (APC)		Concrete (PCC)		Gravel		Undeveloped		Total	
	Miles	12' Lane Miles	Miles	12' Lane Miles	Miles	12' Lane Miles	Miles	12' Lane Miles	Miles	12' Lane Miles	Miles	12' Lane Miles
	Major Arterial	13.12	59.11	0.03	0.16	1.38	2.84	0	0	0	0	14.53
Minor Arterial	60.61	203.74	2.23	7.38	3.73	11.81	0	0	0	0	66.57	222.92
Major Collector	30.18	92.72	1.16	3.17	2.88	7.91	0	0	0	0	34.22	103.8
Neighborhood Collector	23.48	60.91	0.60	1.62	1.58	4.35	0	0	0	0	25.66	66.88
Residential	303.89	705.97	2.42	6.19	21.57	54.86	0	0	0	0	327.88	767.02
Total	431.28	1122.45	6.44	18.52	31.14	81.77	0	0	0	0	468.86	1222.73

UNIMPROVED SYSTEM	Asphalt (ACP)		Bituminous Surface (BST)		Concrete (PCC)		Gravel		Undeveloped		Total	
	Miles	12' Lane Miles	Miles	12' Lane Miles	Miles	12' Lane Miles	Miles	12' Lane Miles	Miles	12' Lane Miles	Miles	12' Lane Miles
	Major Arterial	0	0	0	0	0	0	0	0	0	0	0
Minor Arterial	1.01	1.96	0	0	0	0	0	0	0	0	1.01	1.96
Major Collector	2.74	6.29	0	0	0	0	0	0	0	0	2.74	6.29
Neighborhood Collector	4.36	8.66	0	0	0	0	0	0	0	0	4.36	8.66
Residential	38.88	64.27	3.95	5.91	0.03	0.03	8.73	12.87	4.46	4.96	56.05	88.04
Total	46.99	81.18	3.95	5.91	0.03	0.03	8.73	12.87	4.46	4.96	64.16	104.95

Functional Classifications

The quantity and associated vehicle weight of traffic using streets is a critical factor affecting the rate at which pavement and roadbeds deteriorate. Eugene divides streets into five categories called functional classifications (FC), each representing a different volume and type of vehicular usage.

Major Arterial (FC-1): Major Arterials are usually four or more lanes and generally connect various parts of the region with one another within the city and with the “outside world”. They serve as major access routes to regional destinations such as downtowns, universities, airports, and similar major focal points within the urban area. Major Arterials typically carry an average of more than 20,000 vehicles per day. Major Arterials receive high priority maintenance.

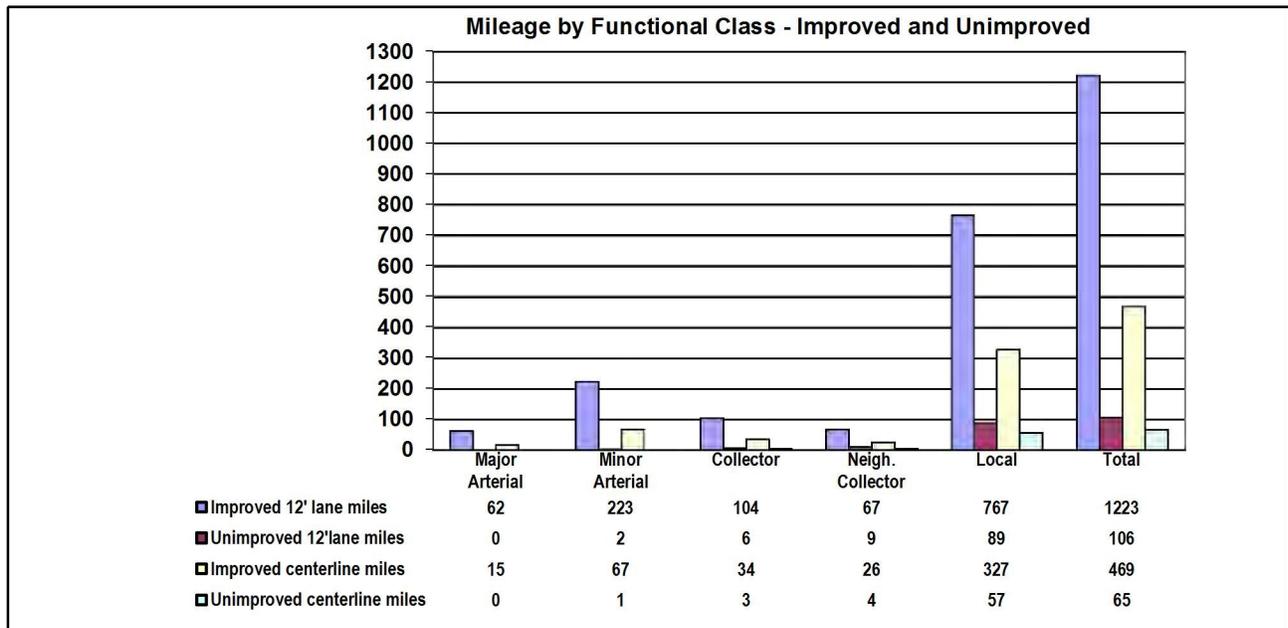
Minor Arterial (FC 2): Minor Arterials are typically two or three lanes. These streets provide the next level of urban connectivity below major arterials. In most cases their main role tends to be serving intra-city mobility. Minor Arterials carry between 7,500 and 20,000 vehicles per day. Minor Arterials receive priority maintenance.

Major Collector (FC-3): Major Collectors can be found in residential, commercial, and industrial areas. They typically carry between 2,500 and 7,500 vehicles per day. Major Collectors have a higher priority for maintenance than local streets.

Neighborhood Collector (FC-4): Neighborhood Collectors are found only in residential neighborhoods and provide a high degree of access to individual properties in a neighborhood. They typically carry between 1,500 and 2,500 vehicles per day.

Local (FC-5): Local streets provide access to individual properties along the roadway. They are narrow, slow-speed, and low-volume service facilities. They typically carry fewer than 1,500 vehicles per day, and receive low priority maintenance. Local streets are also referred to as Residential streets.

The following graph illustrates both centerline miles and lane miles by improvement type and functional classes.



PAVEMENT MANAGEMENT SYSTEM

A Pavement Management System (PMS) performs analysis of collected rating data and reports on the current and projected conditions of the street system. In addition, it is used to evaluate the effectiveness of planning and funding priorities, and provides guidance in the decision making process. The goal of the decision making process is to prevent pavement failures through judicious maintenance.

The PMS used by the City of Eugene since 1987 is CenterLine. CenterLine was developed by Washington's League of Cities and Washington County Roads Administration Board in conjunction with the Washington Department of Transportation (WDOT). The PMS combines visual field inspection ratings, compiled under strict criteria, with computer tracking and condition analysis. The rating methodology for field inspections used prior to 2010 was the WDOT Standard method. Beginning in 2010 the rating methodology was revised to the WDOT's Extended (WSEXT) method, keeping the program consistent with industry standards. Eugene's PMS contains 25 years of historical data and has the ability to estimate financial needs and road conditions 20 years into the future.

Starting with the next rating season the City will be converting from CenterLine to a new pavement management system yet to be determined. CenterLine no longer provides customer support, making it necessary to migrate all of our historical data to a new system. Rating data will still be collected using WSEXT method. A more complete description of this conversion will be reported in the future.

Pavement Inspection Frequency

Two predominant work efforts required to maintain the PMS are updating the street inventory and performing the annual inspection of surface conditions. City streets are divided into segments based on their Functional Classification (FC), pavement type, and geometric design. Segments are the basic unit for evaluating streets and surface conditions. A segment is defined as a portion of a street with a beginning and ending description. Changes in geometric features are used as a guide for determining segments. Examples of geometric differences are surface type, segment width, surface age, and extent of past rehabilitations.

Field inspections are conducted by pavement raters who walk each individual street segment evaluating the pavement surface for signs of distress. City arterial and collector streets are inspected annually; residential streets inspections are completed in a three-year cycle; and off-street shared-use path inspections are completed in a two-year cycle.

In 2010 and 2011 **all** streets were inspected to establish an accurate baseline using the WSEXT rating method. In 2012, the program resumed with standard annual inspection intervals as described above.

Overall Condition Index (OCI), Deduct Values, and Distresses

Pavement distresses are dependent on pavement type and are rated by severity and extent. A street with an OCI of 100 represents a new or recently rehabilitated street. This OCI value is the basis used to analyze the surface treatment needs. Distress data are collected using handheld computers (IPAQ's) and then uploaded to the pavement management software. The extended method (WSEXT) rates severities and all their extents; this information is then used to determine a deduct value. A segment's OCI is calculated by subtracting the deduct values from 100. As the condition of a street's surface begins to deteriorate the OCI decreases. Asphalt distresses typically observed are alligatoring, longitudinal and transverse cracks, rutting, and raveling. Distresses in concrete streets typically observed and rated include cracks per panel, raveling, joint spalling, faulting, and crack sealing. Descriptions of some common distresses are shown below:

Alligator Cracking: When the asphalt begins to crack in all direction it is called alligator cracking.



Longitudinal Cracking/Transverse Cracking: These are cracks that are vertical (longitudinal) and horizontal (transverse) in length. These distresses usually divide the piece into different sections and which are caused by repeated traffic loading. The low-severity cracks are not considered serious to the overall function and safety of the road. Medium to high-severity cracks are usually caused by heavy traffic loads and environmental factors and can become very serious distresses. The picture below shows longitudinal cracking.



Rutting: When the traffic of the street becomes heavy for long periods of times the asphalt begins to sink into the wheel path of the vehicles causing a rut. When there is a rut it is usually a long length of the road and is 1 to 2 feet wide and there are almost always two ruts, one for each side of the vehicle.



Joint Spalling: Spalling is the deterioration of the edges of a concrete slab within 2 feet (0.6m) of the joint. The edges get chipped off concrete slabs causing spalling. Spalling is caused by heavy traffic loads and environmental factors.



Raveling: The roads, mainly asphalt, over time become worn out and rough not smooth as when they were first put in, often due to age and the effects of UV rays. Raveling measures the severity of the roughness and coarseness of the top layer of the street.



Faulting: Faulting is the difference in elevation across the slab. One side may be leaning up more over the other side. Causes are soft foundations, heavy traffic, poor construction, and environmental damage.



How PMS Information is Used

The primary purpose of maintaining a PMS is to collect and analyze information relating to street system condition and trends. With this vital information Public Works managers ensure the most cost-effective maintenance or rehabilitation strategies are identified and performed at the optimum time.

Each year the PMS is used to generate several reports requested by other agencies as well as statistical data requested within our own agency. The following is a sample of reports produced with PMS data:

- Pavement Preservation Project List
- Crack Seal Program
- Five-Year Surface List – five-year moratorium for street cutting
- ODOT Oregon Mileage Report
- City of Eugene Public Infrastructure Table
- Annual Insurance Marketing Report
- Transportation Service Profile

PAVEMENT PRESERVATION PROGRAM

Street preservation and rehabilitation, capital improvements, off-street shared-use path projects, and maintenance efforts make up Eugene's Pavement Preservation Program (PPP). Additionally, the City has budgeted funding for Maintenance Operations to repair portions of the unimproved street system through the Enhanced Street Repair Program. Both PW Maintenance and PW Engineering have important roles within the PPP.

PW Maintenance Roles

Maintenance Division Surface Technical team completes the pavement rating, budget and street life analysis, resulting in a proposed list of projects which is forwarded to Engineering for field testing and final grouping. Surface Technical staff are responsible for producing this report. Operations staff is responsible for the preventative maintenance of all City streets (including concrete streets) and off-street shared-use paths. Preventative maintenance designed to extend the life of the transportation asset is of highest priority. Fully improved asphalt streets receive the highest level of maintenance. Maintenance activities are performed to mitigate hazardous conditions and to extend the useful life of the street. The goal of preventative maintenance is to prevent a street's OCI from slipping into a reconstruction category.

PW Engineering Roles

The Engineering Division typically receives projects proposed for preservation from the Maintenance Division three years in advance of the planned construction. Engineering then performs field investigations to confirm the need for treatment, and reviews historic data on construction and maintenance of the streets. Streets are then prioritized for detailed pavement testing and design recommendations based on the available funding and the assessed condition of the streets. The pavement testing and design reports identify whether a street needs to be reconstructed or rehabilitated (overlaid) and the range of treatment options available. If a street is determined to be a full reconstruct, it is typically deferred until funding is identified and available, such as street repair bond measures.

The Engineering Division is responsible for capital project management including design, stakeholder coordination and communication, contract administration, and construction management. For analysis and reporting of projected backlogs, the Engineering Division has provided construction costs based on historic and current road projects.

Treatment Types and Estimated Costs

For the purpose of reporting projected backlogs the Engineering Division provides construction costs based on historic and present road projects. Treatments reflected in the backlog analysis are limited to three types; slurry seal, overlay, and reconstruction and reporting is based on a system wide approach, not at the project level performed by Engineering. Each functional class has an estimated unit cost for overlay and reconstruction treatments. For local streets (FC-5) an additional maintenance option, slurry seal, is considered.

Slurry Seal: The slurry seal option allows for a cost-effective treatment to seal the surface and restore the skid resistance of local street segments, which do not carry high traffic loads. This treatment is not used on streets which require strengthening or reconstruction. Typical slurry seal costs include street cleaning, removal of vegetation, minor base repairs (dig-outs), sealing of cracks, and application of an emulsified asphalt aggregate mixture to the entire paved surface. Associated costs include replacement of striping and pavement markings, and other work needed to return the street to normal operation.

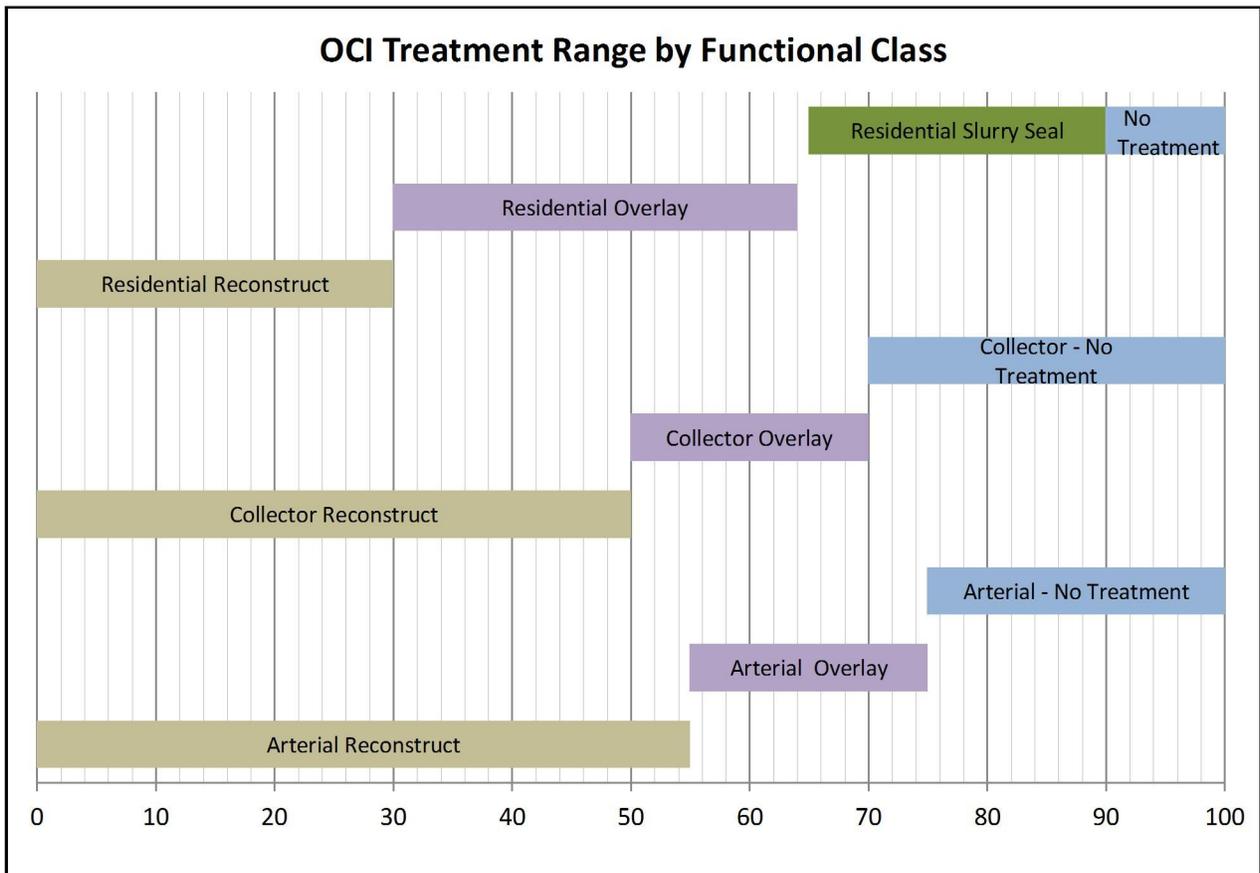
Overlay: Typical overlay rehabilitation costs include milling of existing pavement to a moderate depth to remove existing cracking and increase strength of the structural section. Isolated areas of severely distressed pavement are removed and replaced including a new aggregate base. Associated costs include replacement of striping and pavement markings, adjustment of manholes, and other work needed to return the street to normal operation.

Reconstruct: Typical street reconstruction costs include removal of the existing pavement and base structural section and replacement with a new structural section which will meet a 20-year design life. Isolated areas of curb and gutter are replaced where they would not be suitable to contain new paving or have severe drainage problems.

The following table identifies the estimated costs for the various treatment types including costs to upgrade curb ramps to comply with The American with Disabilities Act (ADA). The slurry seal treatment is exempt from ADA requirements.

Treatment – Functional Class Improved System	12' Lane Mile Cost		
	Updated Eng. 2006 cost	Updated Eng. 2012 cost	2013 cost with 2% inflation
Overlay - FC 1 & 2	\$215,000	\$243,000	\$248,000
Overlay - FC 3 & 4	\$184,000	\$214,000	\$218,000
Overlay - FC 5	\$169,000	\$195,000	\$198,000
Re-Const - FC 1 & 2	\$765,000	\$724,000	\$738,000
Re-Const - FC 3 & 4	\$677,000	\$679,000	\$693,000
Re-Const - FC 5	\$505,000	\$505,000	\$515,000
Slurry Seal - FC 5	\$19,000	\$25,000	\$26,000

The following graph identifies the trigger points (OCI) for each treatment based on Functional Class.



Sustainable Construction

Since 2008, Eugene has been in the forefront of sustainable construction and paving practices, some of which include paving with warm mix asphalt (WMA), using reclaimed asphalt pavement (RAP), and full depth reclamation (FDR). Production of warm mix asphalt is a “green” solution for the environment with noticeable reduced energy consumption and greenhouse gas emissions. Exposure to fuel emissions, fumes, and odors are reduced for asphalt producers, construction workers and the public. Benefits of paving with WMA are the ability to extend the paving season in colder weather, longer haul distances, and better road performance. Warm mix asphalt is identical to conventional hot mix asphalt, except that through a special mixing process it is produced at a temperature approximately 50 to 100 degrees cooler than conventional hot mix asphalt. This mixing process for asphalt aids in compaction during paving, assists in preventing premature aging and slowing the aging process of asphalt. In Eugene, all asphalt producers have retrofitted their plants to produce warm mix asphalt.

Council set goals in 2011 for waste reduction by requiring that the quantity of materials placed in landfills be reduced. In addition to using WMA, Public Works conducted two pilot projects specifying that reclaimed asphalt shingles (RAS) be used as a binder in the asphalt mix, thereby keeping this material from entering the waste stream. The City continues to use warm mix asphalt and in-place recycling techniques to improve the quality, environmental footprint, and cost efficiency of the street bond projects. Key terms in sustainable construction practices:

In-Place Recycling: A process in which a large piece of equipment called a reclaimer pulverizes and mixes the existing base rock and a portion of subgrade soils with dry cement and water to create a cement-treated base. This process greatly reduces the use of virgin materials and trucking that are needed using conventional remove and replace construction techniques.

Full Depth Reclamation: When applicable, partial or full-depth reclamation (FDR) is used as a cost- and time-saving alternative to traditional reconstruction. Associated costs include replacement of striping and pavement markings, adjustment of manholes, and other work needed to return the street to normal operation.

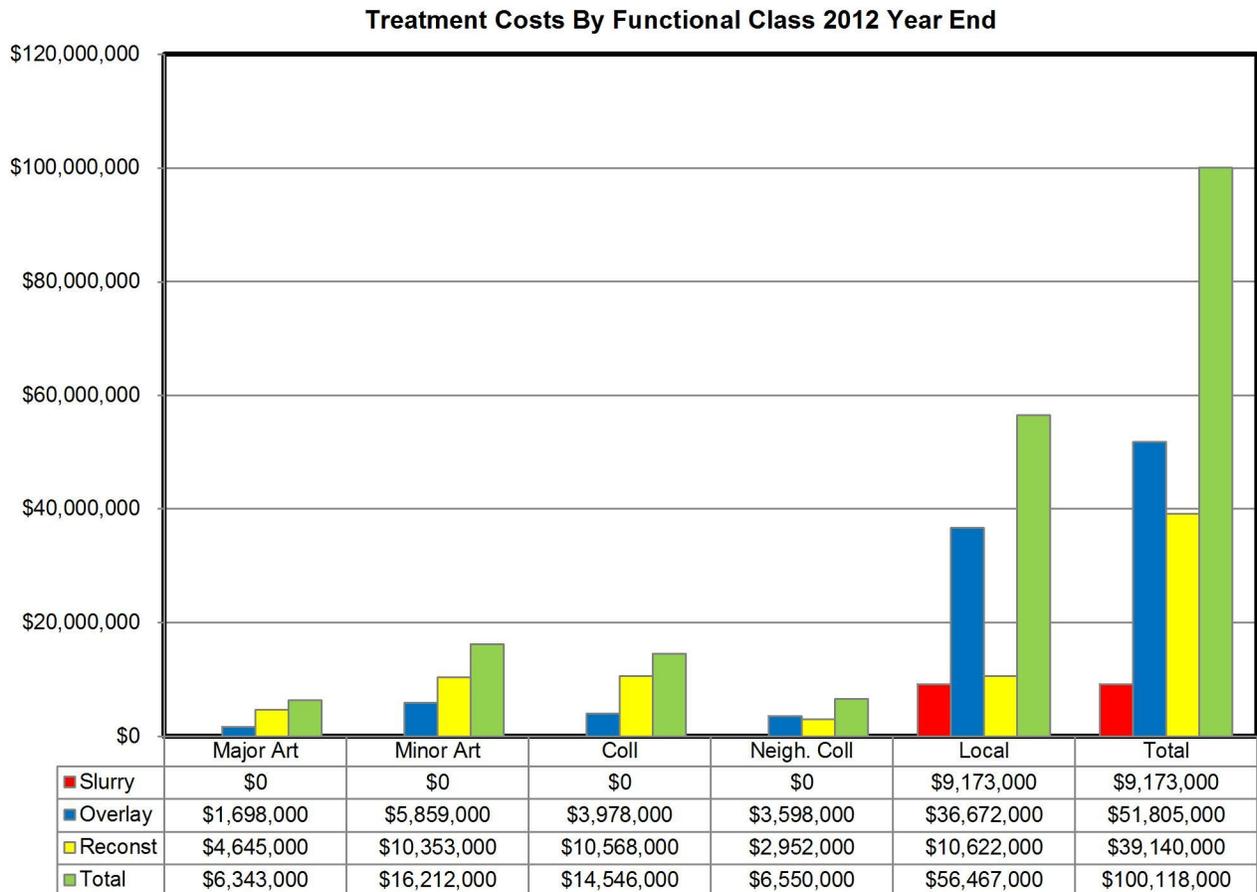
Crack Seal: Placing specialized materials into cracks in unique configurations to keep water and other matter out of the crack and the underlying pavement layers. Crack sealing can be used for two different reasons in pavement maintenance. One is a treatment to seal the cracks in order to prevent moisture intrusion into the pavement. The other is preparatory work to other treatments, such as overlays, and slurry seals.

Reclaimed Asphalt Pavement (RAP): The term given to removed and/or reprocessed pavement materials containing asphalt and aggregates. These materials are generated when asphalt pavements are removed for reconstruction, resurfacing, or to obtain access to buried utilities. When properly crushed and screened, RAP consists of high-quality, well-graded aggregates coated by asphalt cement that can be reused as a substitute for a portion of virgin materials in asphalt and aggregate base.

Recycled Asphalt Shingles (RAS): A primary reason for the high potential value of recycled shingles is that they contain ingredients that hot mix asphalt (HMA) producers purchase to enhance their paving mixtures including asphalt cement (or AC “binder”) and mineral aggregate. Asphalt shingles also contain a fibrous mat made from organic felt (cellulose) or fiberglass that can also be valuable as fiber in some asphalt paving mixes.

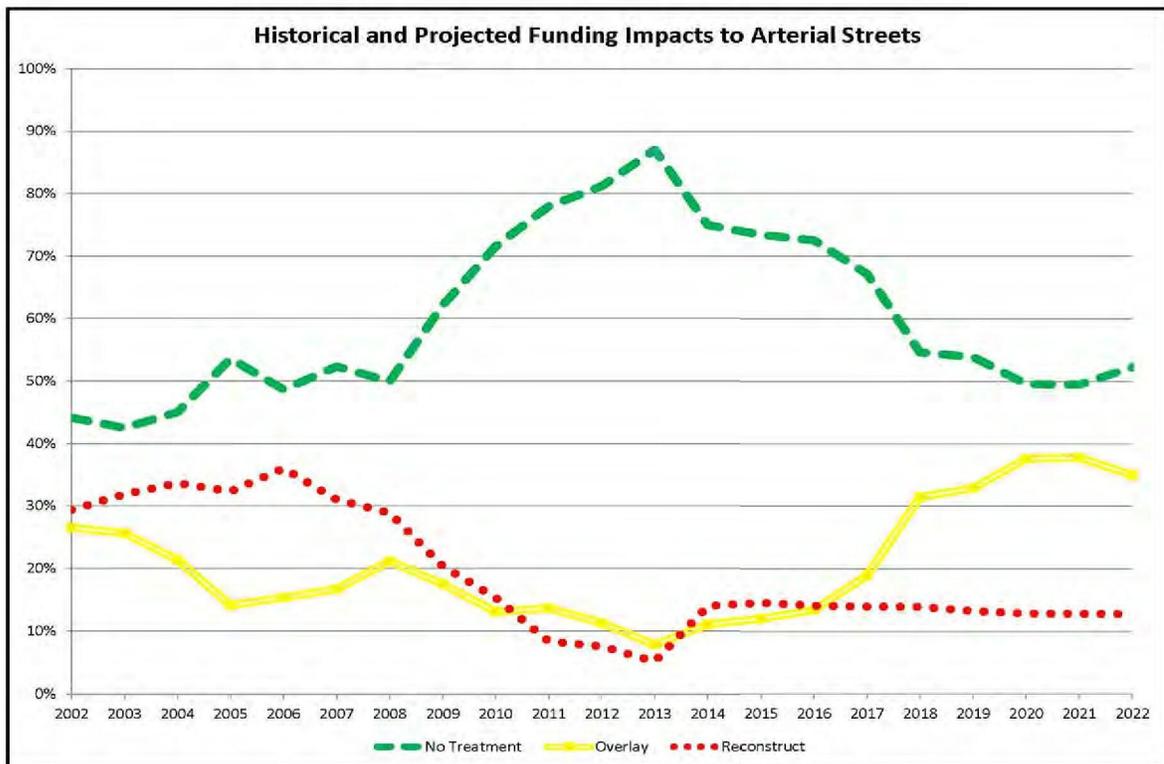
Current Treatment Costs

This chart provides detail of the current cost for treatment of the entire improved system excluding concrete streets at the end of the 2012 rating period. The total estimated treatment cost backlog at the end of 2012 is \$100 million down from \$118 million reported in 2011.

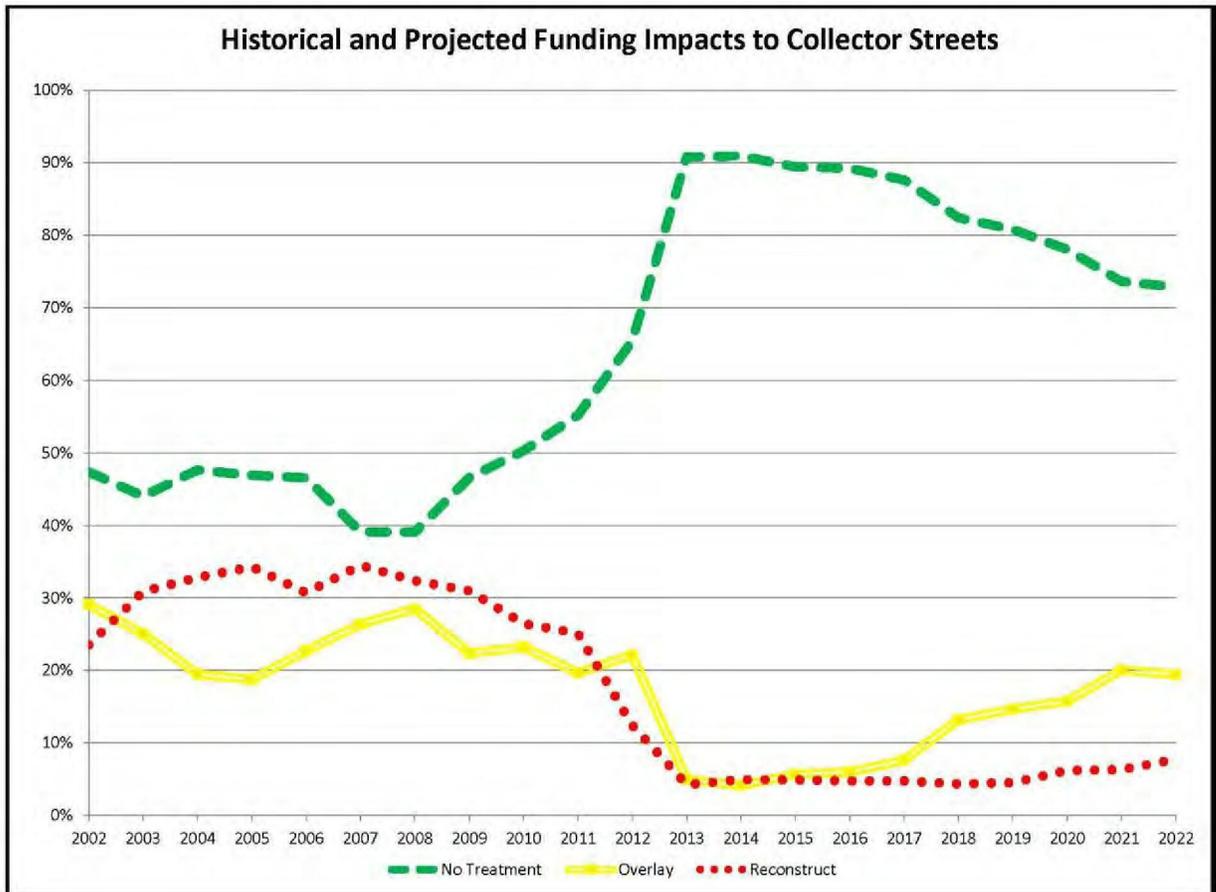


Historical and Projected Funding Outcomes

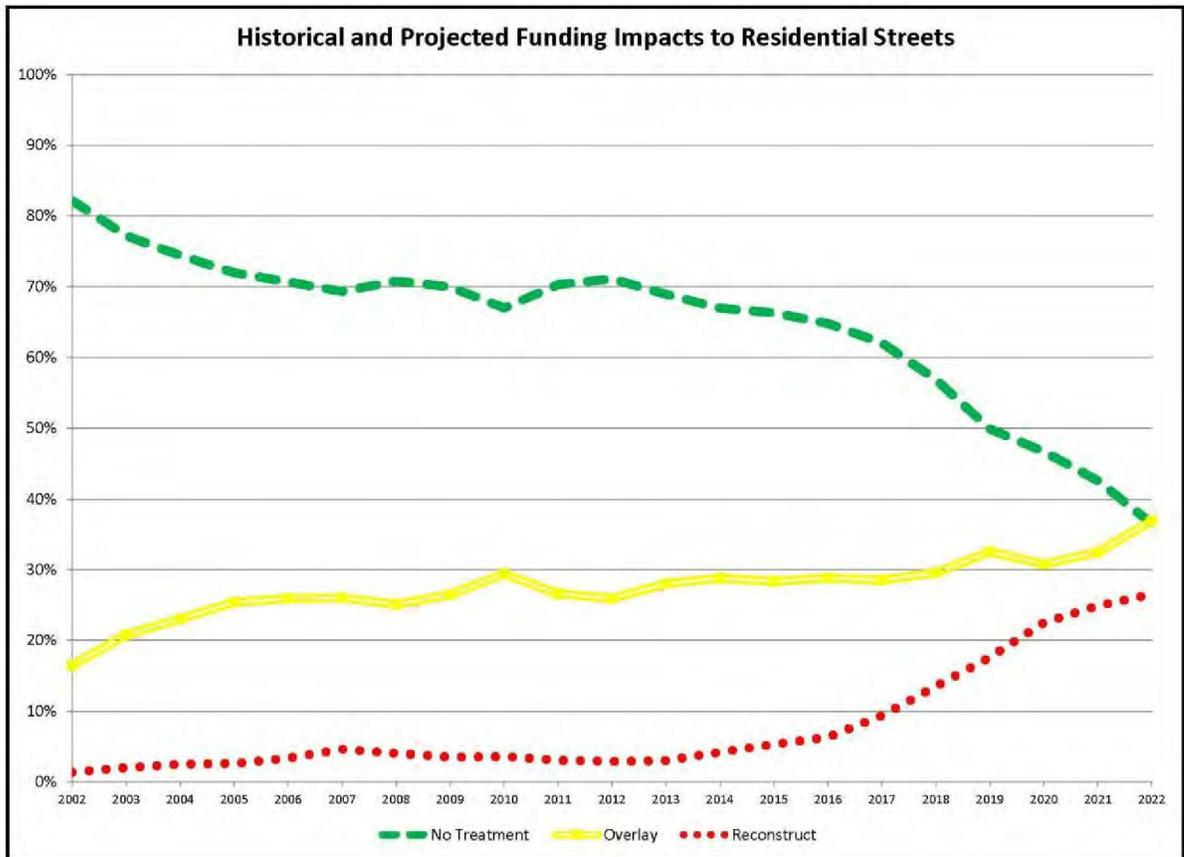
Using the PMS software, an analysis for a 10-year period (2013 through 2022) has been completed based on the current funding, including the 2012 bond measure. The PMS software evaluates the deterioration of each segment based on individual OCI ratings. The software then projects when to apply the necessary treatment at the proper time. When possible, the system applies a less expensive treatment earlier in the degradation curve to prevent the street from falling into an overlay or reconstruct range. In the following four graphs this projected evaluation includes historical data to present a more comprehensive view of the street system. The graphs show the impact of past and current funding over a 20-year period (2002 to 2022). Each graph indicates the **percentage** of streets that fall within a specific treatment range (reconstruct, overlay and no treatment). Plotting the percentages of streets within a treatment range over time visually demonstrates the overall condition of streets within that class. This is useful when deciding how to allocate funds in future years.



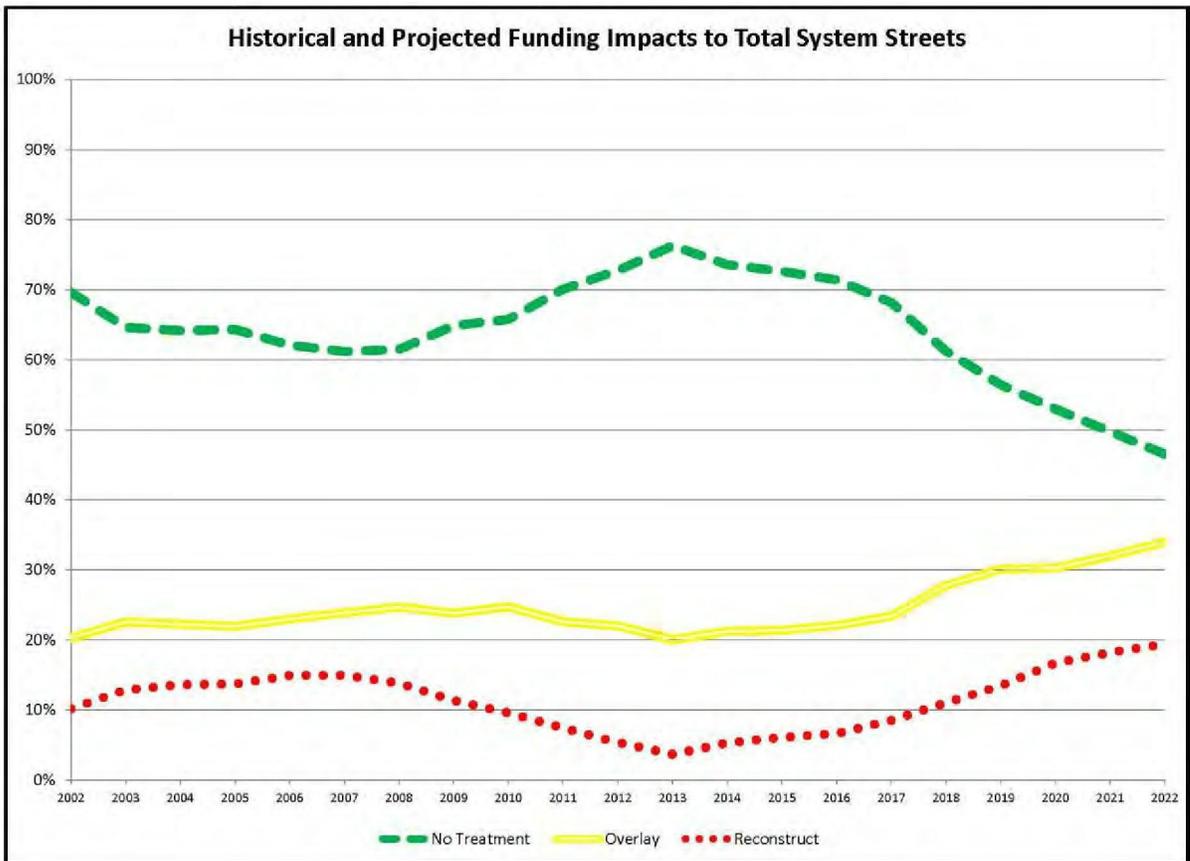
Arterial streets have been a major focus of the Pavement Preservation Program since 2002; as a result the percentage of arterial streets within the reconstruct treatment range steadily declined from 2008 to present and is projected to stabilize after 2014. This stabilization provides an opportunity for funding to be allocated towards preservation (preventative maintenance) of the streets, a primary goal of the pavement management system. Preventative treatments (including overlays) are far less expensive and can extend the life of a street considerably. Additionally, further analysis of the arterial classification shows a period of time where there is an opportunity to direct a large portion of available funds to other street classifications for treatment.



Similar to arterial streets, reconstruction and overlay treatment needs have decreased since 2008 as a result of completed and upcoming projects. As with arterial streets, further analysis has shown that a majority of streets in the overlay treatment category are in the upper end of the OCI scale. Streets in the upper range of the OCI scale have a number of years remaining before they are at risk of falling into the reconstruct category. Once again, with more arterial and collector streets in the upper range of the OCI scale, a portion of available funding can potentially be directed to the residential classification where street repair needs continue to rise. Beginning in 2017, it is projected that streets which have previously been treated will begin to show expected deterioration.



Residential (Local) streets make up 56% of the total street system backlog. To date residential streets have not been adequately funded to keep them from deteriorating, therefore we see very little change from the projections reported in 2012. The 2012 bond measure identifies approximately 15 centerline miles for repair, less than 5% of the functional class. Although the percentage of streets within the reconstruct range has increased gradually to date, it is projected to climb at a much faster rate in the future, which reflects a street’s lifecycle, aggravated by the lack of preventative treatment. The percentage of streets within the overlay treatment range continues to increase as well. Reflectively, the percentage of residential streets within the no-treatment range has been dropping and is projected to continue so that by 2022 less than 40% of residential streets will require no treatment. In that same time period, residential streets requiring reconstruction increases to more than 25% of the system.



This graph of the combined arterial, collector and residential streets reflects the impacts to the overall street system due to insufficient funding for residential street treatments as well as a treatment strategy that includes reconstruction as well as overlay treatment. The percentage of streets needing “no treatment” declines, while streets requiring a “reconstruct” treatment increases.

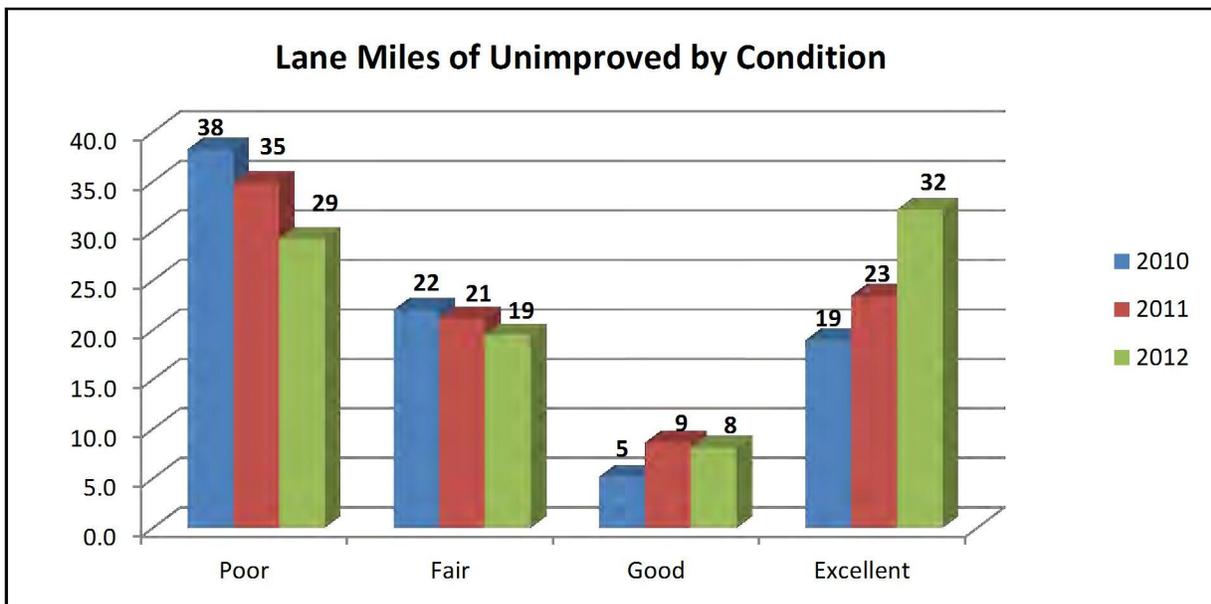
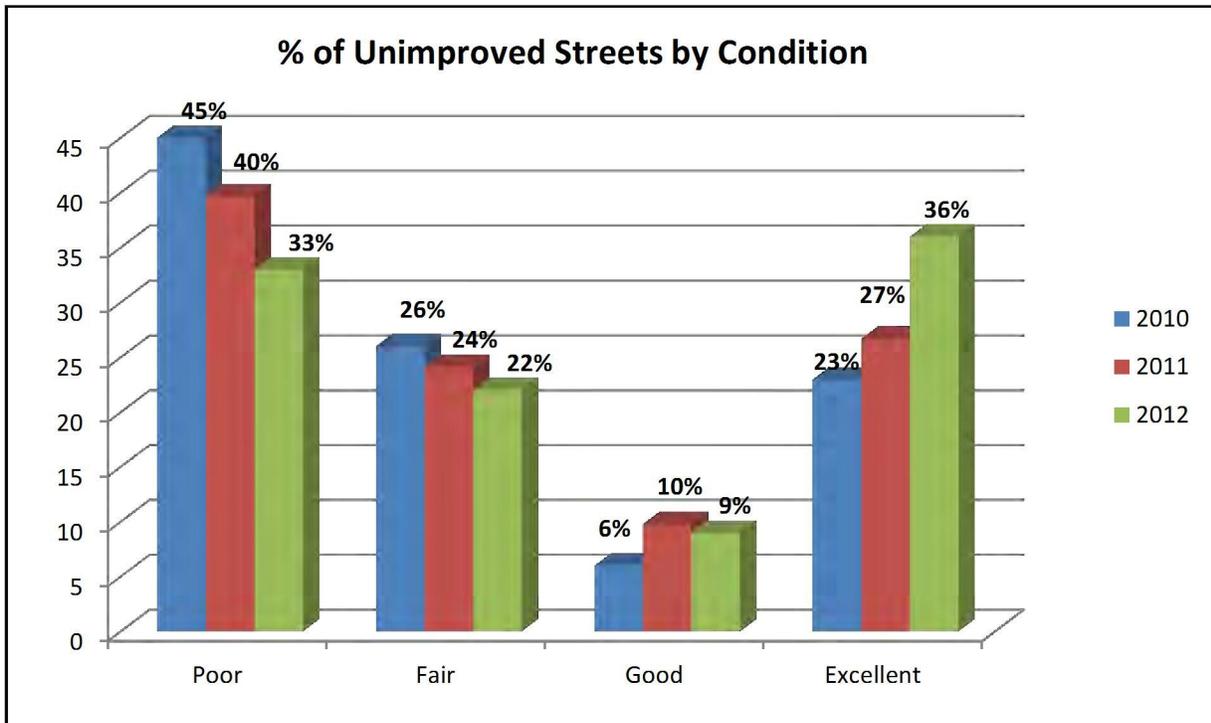
Unimproved Street System

The City's transportation system consists of 533 centerline miles of improved and unimproved streets. The unimproved portion of this total includes 51 centerline miles (87 lane miles) of asphalt and bituminous surface streets. This section of the report is intended to describe the overall condition of unimproved asphalt streets, potential treatment needs, associated rehabilitation costs, along with a projected backlog repair cost for addressing this classification of street. It is important to note that any treatment short of being brought up to full urban street standards should be considered temporary. The estimated cost to improve this classification to meet the urban street standards is approximately \$60 million. In addition, the following backlog figure is separate from the improved street backlog figure.

Based on 2012 rating data of the unimproved streets system there is a backlog of temporary repair projects, typically maintenance overlays, totaling an estimated \$9.8 million, down from \$11.3 million reported in 2011. The following charts and graphs indicate that 45 percent of the system falls into a no treatment category, up from 36 percent reported in 2011, due in large part to recent maintenance overlay and FDR treatments completed over the past five years. More than 75 unimproved streets have benefited from full or partial treatment since 2008. Thirty three percent of the system falls into the "poor" category. Currently, Public Works Maintenance plans on spending \$200,000 annually over the next four years to address a portion of these streets.

2012 Unimproved Asphalt Street Condition and Rehabilitation Report					
(2012 Rating Data)					
<u>OCI</u>	<u>Lane Miles</u>	<u>% of System</u>	<u>Condition</u>	<u>Rehabilitation Cost</u>	<u>Unit Cost/SQFT *</u>
0-10	6.77	7.61%	Poor	\$2,573,683	\$6.00
11-20	11.72	13.18%	Poor	\$2,970,317	\$4.00
21-30	10.68	12.01%	Poor	\$1,522,541	\$2.25
31-40	6.01	6.76%	Fair	\$856,786	\$2.25
41-50	4.18	4.70%	Fair	\$595,901	\$2.25
51-60	7.56	8.50%	Fair	\$1,077,754	\$2.25
61-65	1.72	1.93%	Fair	\$245,203	\$2.25
66-70	1.63	1.83%	Good	\$0	\$0.00
71-80	2.63	2.95%	Good	\$0	\$0.00
81-85	3.89	4.37%	Good	\$0	\$0.00
86-90	4.75	5.33%	Excellent	\$0	\$0.00
91-100	27.42	30.83%	Excellent	\$0	\$0.00
			Total Rehabilitation	\$9,842,185	
	88.96	100.00%			
					* Unit cost based on 2010 estimated costs

The following graphs are a visual representation of the information provided on the preceding page.



Projected Funding for Pavement Preservation Program FY12 through FY18

From the inception of the Pavement Preservation Program (PPP), Eugene has been faced with the challenge of securing adequate, sustainable funding for this program. Currently there are several sources that contribute funding for pavement rehabilitation and reconstruction projects. The primary source of ongoing revenue is the City's local motor vehicle fuel tax ("gas tax"), which is currently levied at 5 cents per gallon. The reimbursement component of Transportation System Development Charges (SDCs) have historically generated close to \$800,000 per year for PPP projects. In the current economic environment, building permit activity continues to be low, reducing the level of this funding stream. The cumulative effect of these factors is that PPP annual revenues, which were once projected at \$4.2 million per year, are now projected to level out at approximately \$3 million per year

In 2008, voters approved a \$35.9 million dollar bond measure dedicated to 32 street preservation projects and shared-use path rehabilitation work. Based on numerous economic factors construction bids were significantly less than anticipated allowing 22 streets to be added to the original 32 streets approved by voters.

In 2012, voters approved a second \$43 million bond measure dedicated to 76 street preservation projects plus \$516,000 annually to support bicycle and pedestrian projects. The measure will generate approximately \$8 million annually for FY14 through FY18.

With the funding identified approximately 112 lane miles of City streets and will be repaired. To date approximately 3 miles of off-street shared-use paths have been repaired.

Projected Funding Sources Pavement Preservation Projects FY12 - FY18

Fiscal Year	Local Gas Tax	SDC	Bond	Other*	Total Funding
FY12 (actual)	\$3,045,192	\$390,645	\$7,140,000	\$41,748	\$10,617,585
FY13 (est.)	\$3,060,000	\$136,600	\$7,480,000	\$20,580	\$10,697,180
FY14 (est.)	\$3,060,000	\$186,746	\$7,840,000	\$37,088	\$11,123,834
FY15 (est.)	\$3,060,000	\$186,746	\$8,000,000	\$35,644	\$11,282,390
FY16 (est.)	\$3,060,000	\$186,746	\$8,290,000	\$36,710	\$11,573,456
FY17 (est)	\$3,060,000	\$186,746	\$8,590,000	\$37,463	\$11,874,209
FY18 (est)	\$3,060,000	\$186,746	\$8,900,000	\$36,845	\$12,183,591

* "Other" revenue includes investment interest, permit fees and other miscellaneous resources.

Project Prioritization

Selecting streets or street segments for treatment is done through a process involving analysis, testing, and staff experience. Using the data produced by CenterLine, and combining this information with estimated revenues allows staff to approximate backlogs and group potential street segments for consideration for treatment under the Pavement Preservation Program.

Streets are not prioritized on a “worst first” basis. Public Works’ main objective is to keep street segments from slipping into the reconstruction category, which typically costs four to five times more per lane mile than rehabilitation. By rehabilitating (overlaying) a street before it significantly deteriorates, 15 to 20 years of useful life can be added to a street at a substantial cost savings over reconstruction. Once a street has deteriorated to the point that it must be reconstructed, the opportunity for preventive street maintenance (overlay) is lost. For these reasons, streets that are categorized as overlay projects receive the highest priority for corrective treatment. If at some point in the future there are additional funds available, or if the majority of overlay projects have been addressed, reconstruction projects will be scheduled.

A prioritized list of 32 street repair projects to be funded by a local bond measure was approved by Eugene voters in 2008. The list, approved by City Council, was developed by staff based on citizen input, information about needed street rehabilitation and reconstruction from the pavement management system, and equitable geographic distribution of projects throughout the community. Subsequently, a 12-member citizen review panel was formed to document the use of the bond proceeds. In 2011, City Council approved the addition of 22 streets selected in the same manner and recommended by the citizen review panel to be repaired.

In 2012, a second five-year bond measure was approved by Eugene voters with a prioritized list of 76 street repair projects (Exhibit A) and additional funding to support bicycle and pedestrian improvement projects. The list was developed using the same criteria as above and approved by City Council.

Off-Street Shared-Use Paths

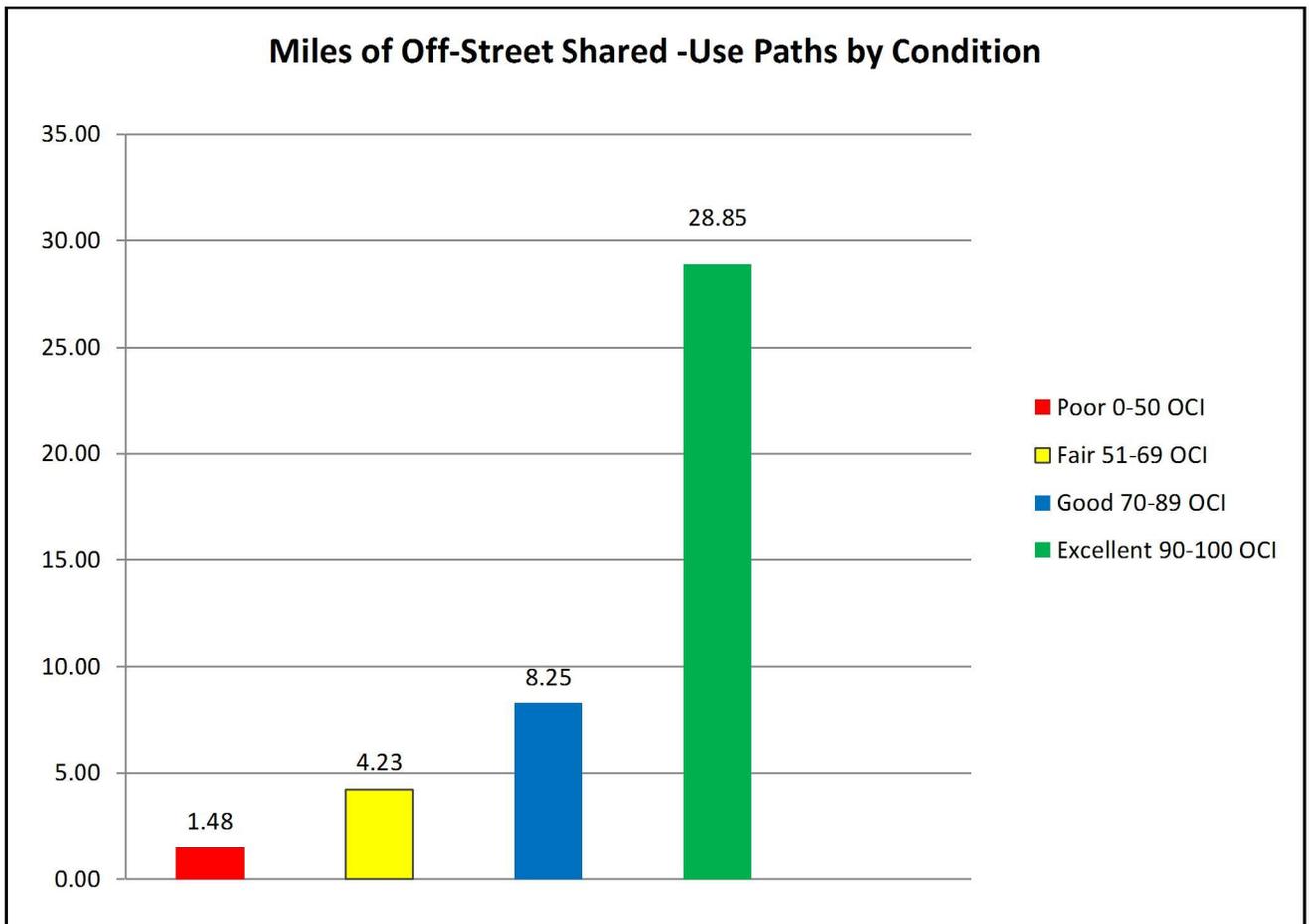
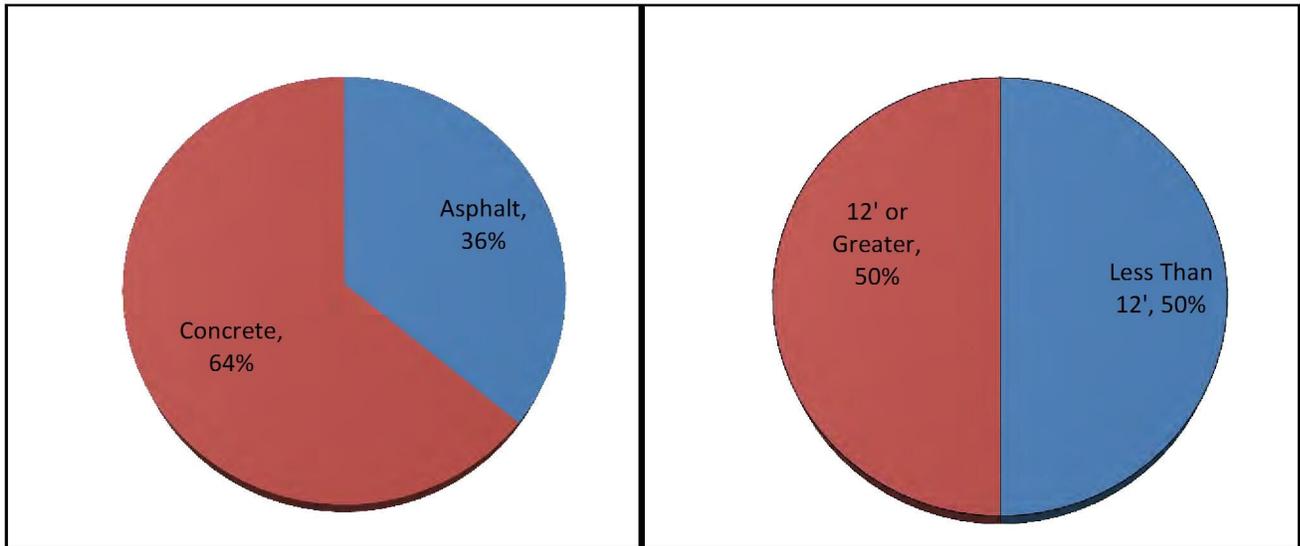
Shared-use paths are used by a variety of non-motorized users, including pedestrians, cyclists, skaters, and runners. Shared-use paths are typically wider than an average sidewalk and paved (asphalt or concrete).

There are approximately 41 miles of shared-use paths identified in the Pavement Management System. The complete system of shared-use paths was surveyed and rated in 2011 using the new rating methodology. With this updated information a future analysis will be performed to project the condition and funding needs of this infrastructure. The City standards for shared-use paths require a concrete structure no less than six inches deep and 12 feet wide. Paths designed, constructed or reconstructed to current standards are expected to have a 50-year life.

The following graphs show the division of current surface types and widths within the system.

Off-Street Shared-Use Path Surface Type:

Off-Street Shared-Use Path Existing Widths:



Shared-use path projects have been historically funded by state and federal grants and more recently by voter-approved bond measures. There is currently no long-term funding identified specifically for shared-use paths. The following is a list of completed and current projects, including shared-use paths funded by the bond measures.

Name	Fiscal Year	Funding
Fern Ridge Chambers - City View	2004	STP-U
Garden Way Bike Path	2005	STP-U
Monroe Bikeway	2006	STP-U
N Bank Path Club Rd 3000'W	2006	STP-U
West Bank Trail	2007	Transportation Enhancement (TE) Funds
Delta Ponds Bridge	2007	Various Federal Funds
Amazon: SEHS - 31st Bike Path	2009	PBM
Fern Ridge Path Rehab/Westmoreland Connector	2010	PBM
South Bank Path Rehab	2011	PBM
West Bank Trail Extension	2011	STP-U/TE
Fern Ridge: Chambers - Arthur	2012	ODOT Rapid Readiness Funds
W Bank: Greenway - Copping	2012	PBM
Amazon/Willamette River Path Connectors	2012	State Urban Trail Funds
North Bank Path: DeFazio Bridge to Leisure Ln.	2012	STP-U
Fern Ridge: Terry - Greenhill	2013	STP-U/TE
South Bank Path: Riverplay to DeFazio Bridge	2013	PBM

Project Funding Abbreviations

PBM – Paving Bond Measure

LGT – Local Gas Tax/SDC/Other

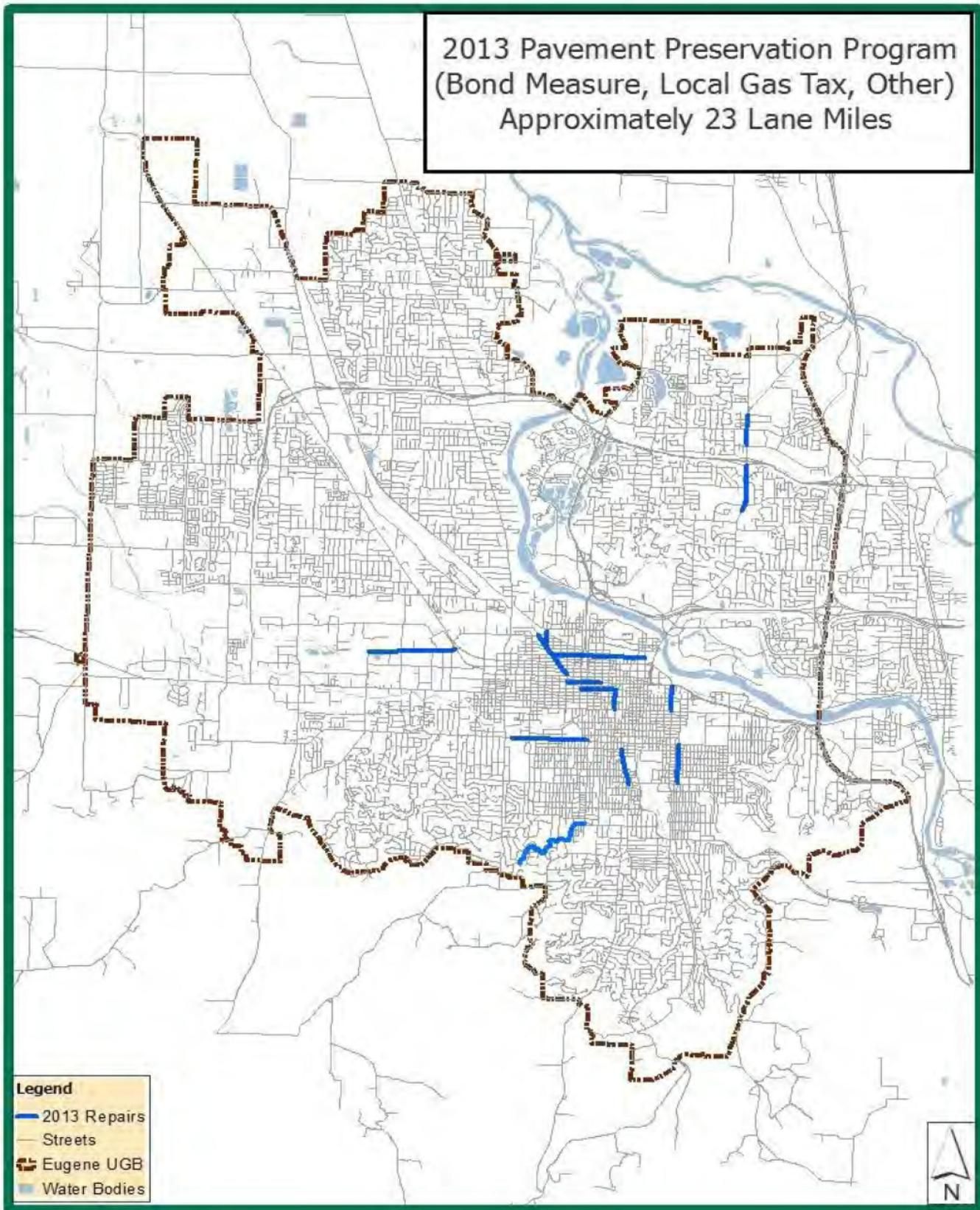
STP-U – Surface Transportation Funds-Urban (Federal)

TE – Transportation Enhancement (Federal)

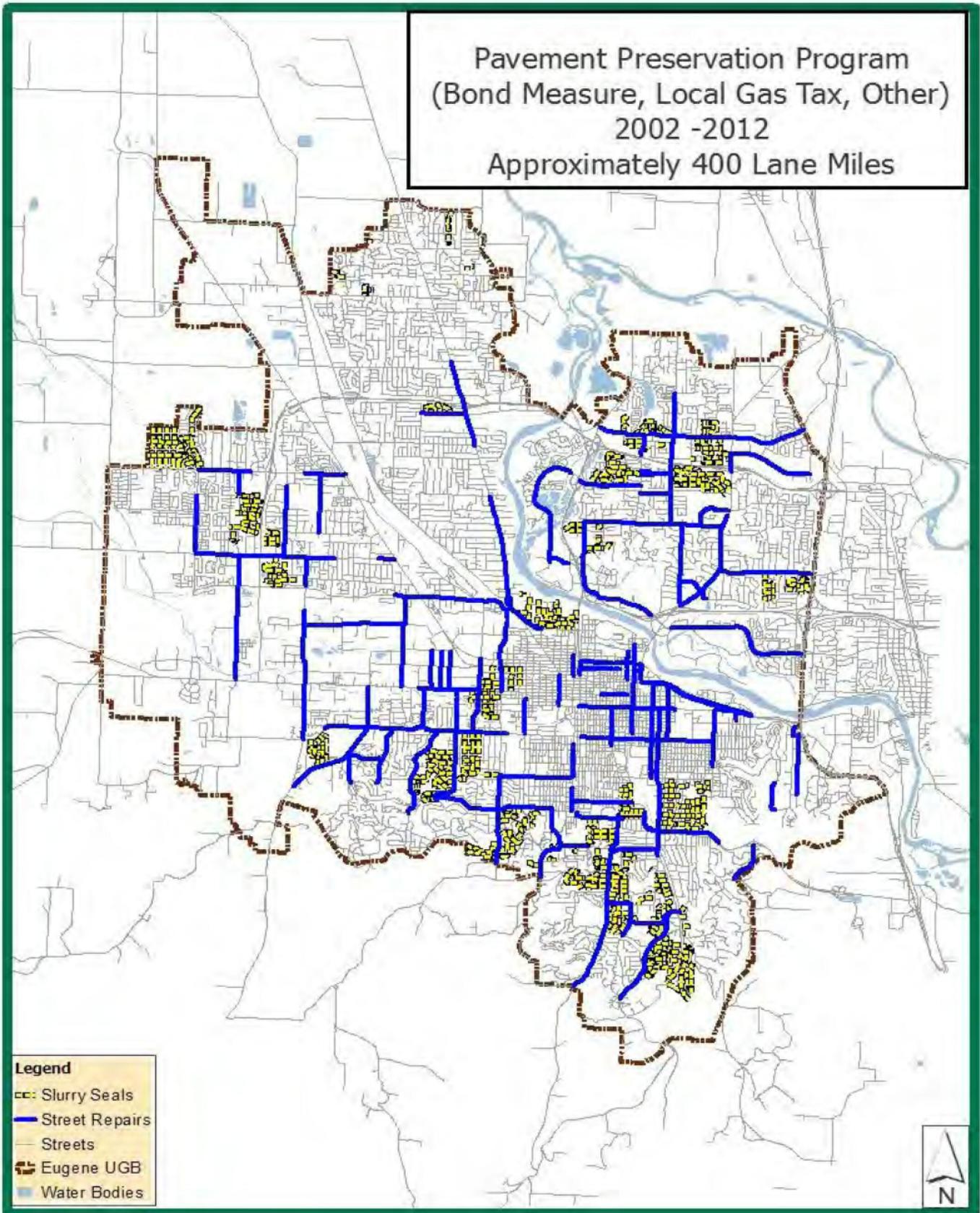
Scheduled Street Projects for 2013

Project Name	Limits	Lane Miles	Funding
5TH AVE	High to Blair	3.35	PBM
5TH AVE	Hwy 99 to Bailey Hill	2.88	PBM
10TH AVE	Olive to Jefferson	1.04	PBM
18TH AVE	Washington to 330' East Of Chambers	2.67	PBM
ALDER ST	18th to 24th	0.93	PBM
BLAIR BLVD	2nd Ave to Monroe	1.74	PBM
BROADWAY W	Lincoln to Monroe	1.02	PBM
COBURG RD	County Farm Rd to Chad	1.99	PBM
COBURG RD	Beltline to Willakenzie Rd	2.54	LGT/FHWA
HILYARD ST	Broadway to E 13th Ave	1.00	LGT/PBM
LORANE HWY	Washington to Paige	1.78	LGT
OLIVE ST	W 10th Ave to W 13th Ave	0.61	PBM
VAN BUREN ST	Railroad Crossing to Blair Blvd	0.43	PBM
WILLAMETTE ST	W 19th Ave to South Of 24th Ave	1.18	PBM

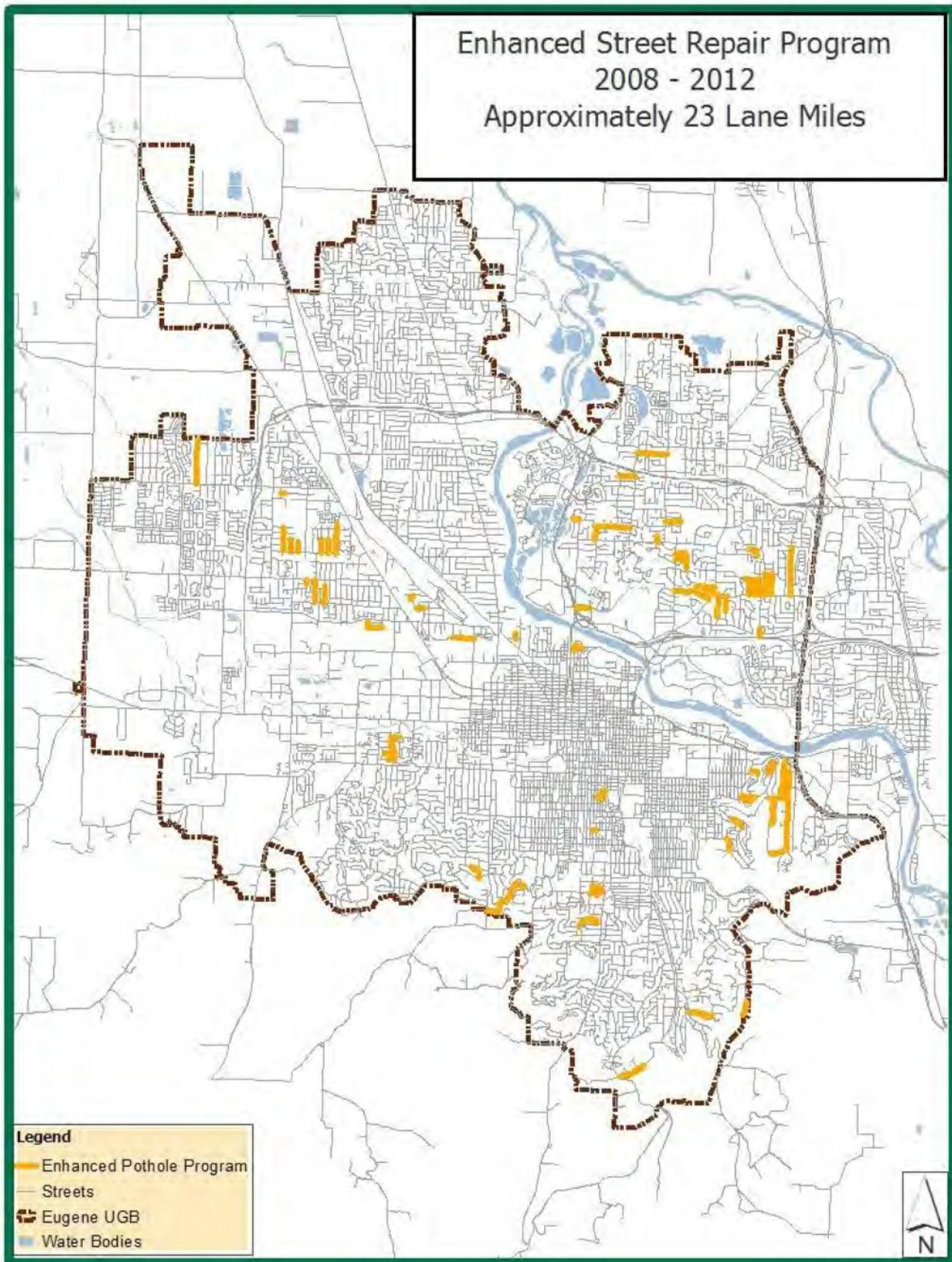
The following map illustrates the Pavement Projects scheduled for 2013.



The following map illustrates Pavement Preservation Projects since inception of the program.

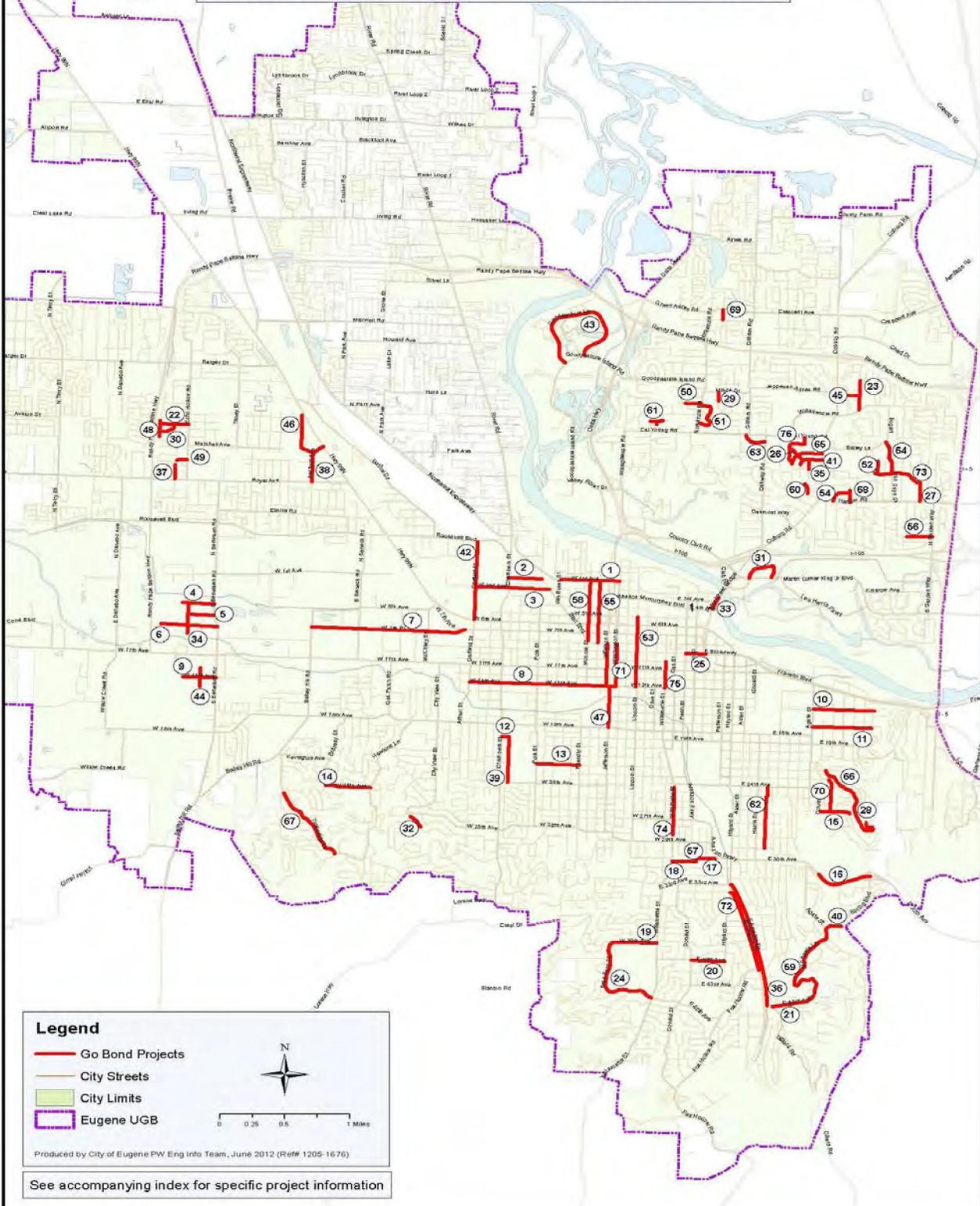


The following map illustrates the Enhanced Street Repair Program 2008-2012.



Eugene Street Preservation Projects

Project Map for 2012 Bond Measure to Fix Streets



Legend

- Go Bond Projects
- City Streets
- City Limits
- Eugene UGB

Produced by City of Eugene PW Eng Intg Team, June 2012 (Reff# 1205-1676)

See accompanying index for specific project information

Project List for 2012 Bond Measure to Fix Streets

Map #	Street Name	Limits
1	01ST AVE	WASHINGTON ST - VAN BUREN ST
2	01ST AVE	BLAIR BLVD - WEST END
3	02ND AVE	BLAIR BLVD - GARFIELD ST
4	05TH AVE	BERTELSEN RD - WEST END
5	06TH AVE	BERTELSEN RD - COMMERCIAL ST
6	07TH AVE	BERTELSEN RD - OSCAR ST
7	07TH PL	7TH AVE/HWY 99 - BAILEY HILL RD
8	13TH AVE	WASHINGTON ST - GARFIELD ST
9	13TH AVE	BERTELSEN RD - COMMERCE ST
10	15TH AVE	FAIRMOUNT BLVD - AGATE ST
11	17TH AVE	FAIRMOUNT BLVD - AGATE ST
12	19TH AVE	FILLMORE ST - CHAMBERS ST
13	22ND AVE	FRIENDLY ST - POLK ST
14	25TH AVE	HAWKINS LN - BRITTANY ST
15	27TH AVE	COLUMBIA ST - SPRING BLVD
16	30TH AVE	SPRING OVERPASS - AGATE ST
17	30TH AVE	MILL ST (WEST) - FERRY ST (EAST)
18	30TH AVE	MILL ST - WILLAMETTE ST
19	39TH AVE	WILLAMETTE ST - 100' EAST OF DENSMORE RD
20	40TH AVE	HILYARD ST - DONALD ST
21	43RD AVE	N SHASTA - DILLARD RD
22	AVALON ST	ECHO HOLLOW RD - JUHL ST
23	BEST LN	WILLAKENZIE RD - KENTWOOD DR
24	BRAE BURN DR	39TH AVE - WILLAMETTE ST
25	BROADWAY	MILL ST - PEARL ST
26	BUFF WAY	WOODSIDE DR - FORRESTER WAY
27	CALVIN ST	WESTERN DR - HARLOW RD
28	CAPITAL DR	SPRING BLVD - 50' N OF CRESTA DE RUTA ST
29	CARMEL AVE	MINDA DR - 400' SOUTH OF MINDA DR
30	CASCADE DR	AVALON ST - JUHL ST
31	CENTENNIAL LP	MLK, JR BLVD (EAST) - MLK, JR BLVD/CLUB RD
32	CITY VIEW ST	28TH AVE - 29TH AVE
33	COBURG RD	SS FERRY ST BRIDGE - 50' S OF EWEB ON/OFF RAMP
34	COMMERCIAL ST	5TH AVE - SOUTH END
35	CORYDON ST	FORRESTER WAY - TANDY TURN
36	EAST AMAZON DR	HILYARD ST - DILLARD RD
37	ELIZABETH ST	KNOOP AVE - ROYAL AVE
38	FAIRFIELD AVE	WS HWY 99 - ROYAL AVE
39	FILLMORE ST	19TH AVE - 24TH AVE
40	FIRLAND BLVD	SPRING BLVD - AGATE ST
41	FORRESTER WAY	COBURG RD - WS DRWY 1033
42	GARFIELD ST	ROOSEVELT - 6TH AVE
43	GOODPASTURE LOOP	GOODPASTURE IS RD (EAST INTERSECTION) - GOODPASTURE IS RD (WEST INTERSECTION)
44	INTERIOR ST	NORTH END OF CUL DE SAC - SOUTH END OF IMPROVED SECTION

Exhibit A

Map #	Street Name	Limits
45	IONE AVE	BEST LN - ADKINS ST
46	JACOBS DR	HWY 99N - FAIRFIELD AVE
47	JEFFERSON ST	8TH AVE - 18TH AVE
48	JUHL ST	NS ADDR 1424 - SOUTH END
49	KNOOP AVE	ECHO HOLLOW RD - ELIZABETH ST
50	LARKSPUR AVE	NORKENZIE RD - 640 FEET WEST OF NORKENZIE RD
51	LARKSPUR LOOP	NORKENZIE RD (N) - NORKENZIE RD (S)
52	LEIGH ST	NORTH END - WESTERN DR
53	LINCOLN ST	5TH AVE - 13TH AVE
54	LYDICK WAY	TOMAHAWK LN - HARLOW RD
55	MADISON ST	1ST AVE - 8TH AVE
56	MAHLON AVE	GARDEN WAY - HONEYSUCKLE LN
57	MILL ST	30TH AVE (NORTH) - 30TH AVE (SOUTH)
58	MONROE ST	1ST AVE - BLAIR BLVD
59	NORTH SHASTA LOOP	FIRLAND - 43RD AVE
60	PIONEER CT	PIONEER PIKE - NORTH END
61	PIPER LN	CHASA ST - FIR ACRES DR (INCL CUL-DE-SAC)
62	POTTER ST	24TH AVE - 29TH AVE
63	ROLAND WAY	OAKWAY RD - CAL YOUNG RD
64	SATRE ST	BAILEY LN - WESTERN DR
65	SHARON WAY	COBURG RD - ES DRWY 1023
66	SPRING BLVD	FAIRMOUNT BLVD - CAPITAL DR
67	TIMBERLINE DR	WARREN ST - WINTERCREEK DR
68	TOMAHAWK LN	HARLOW RD - 580' NORTH OF HARLOW RD
69	TULIP ST	CRESCENT AVE - HOLLY AVE
70	VAN NESS ST	23RD AVE - 27TH AVE
71	WASHINGTON ST	8TH AVE - 13TH AVE
72	WEST AMAZON DR	ES HILYARD - SS FOX HOLLOW
73	WESTERN DR	CALVIN ST - WEST END/MONROE MIDDLE SCHOOL
74	WILLAMETTE ST	24TH AVE - 29TH AVE
75	WILLAMETTE ST	10TH AVE - 13TH AVE
76	WOODSIDE DR	CAL YOUNG RD - SHARON WAY