



CITY PROJECT #CI-14-016

## FIVE YEAR PAVEMENT MAINTENANCE PLAN UPDATE



# CITY OF OREGON CITY

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## FIVE YEAR PAVEMENT MAINTENANCE PLAN UPDATE

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**JULY 2015**



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**For:**

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**Five Year Pavement Maintenance Plan Update**

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## TECHNICAL MEMORANDUM

**DATE:** July 8, 2015

**PROJECT:** PMUF Five Year Pavement Maintenance Plan Update (CI-14-016)

**TO:** Mr. Martin Montalvo  
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**FROM:** Andrew H. Giesy, P.E.  
Murray, Smith & Associates, Inc.

**REVIEW:** Gabriel E. Crop, P.E.  
Murray, Smith & Associates, Inc.

**RE:** PMUF Five Year Pavement Maintenance Plan Update



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### Introduction/Background

The City of Oregon City's (City) transportation system includes about 135 miles of City-owned surface streets of varying size and capacity requiring periodic maintenance to keep them operational. Due to increased growth in the City and reduced funding capacity from traditional sources, the City established a Transportation Utility Fee in 2007 to address street maintenance needs. The fees collected are deposited into the City's Pavement Maintenance Utility Fund (PMUF) which is used to fund future maintenance projects.

Several high priority pavement maintenance projects have already been completed from 2008 through 2014 using the PMUF. After the first projects were completed and revenues increased through the phase-in process, the City collaborated with Murray, Smith & Associates (MSA) to develop an initial 5-year Pavement Maintenance Plan to support continued effective use of the PMUF for maintenance work from 2012 to 2016. The plan was used in three successive years through 2014 to assist the City in developing the final project list of streets for annual pavement maintenance.



## Summary of Past Successes

Maps showing the work completed utilizing the PMUF over the last five years from 2010 to 2014 are provided as Figure 1, PMUF Map, Rehabilitation Projects Completed, 2010 to 2014 and Figure 2, PMUF Map, Preventative Maintenance Projects Completed, 2010 to 2014 in Appendix A. The most recent annual report from 2012 provided in Appendix B provides additional detail regarding the work completed. Rehabilitation work included a combination of overlays, grind/inlays and full depth reconstruction. Preventative maintenance work included crack sealing, slurry sealing, chip sealing and microsurfacing. The following tables summarize the work completed during this timeframe.

**Table 1**  
**PMUF Expenditures for Rehabilitation**

Year	Area Treated (square yards)	Estimated Cost
2010	15,760 <sup>1</sup>	\$463,700 <sup>1</sup>
2011	23,053 <sup>1</sup>	\$819,368 <sup>1</sup>
2012	37,846 <sup>1</sup>	\$1,048,766 <sup>1</sup>
2013	32,119 <sup>2</sup>	\$760,514 <sup>2</sup>
2014	40,664 <sup>2</sup>	\$1,304,890 <sup>2</sup>

<sup>1</sup>Information obtained from annual reports.

<sup>2</sup>Excludes portion of Clairmont Way constructed with waterline replacement project.

**Table 2**  
**PMUF Expenditures for Preventative Maintenance**

Year	Area Treated (square yards)	Estimated Cost
2010	134,636	\$155,368
2011	76,934 <sup>1</sup>	\$155,214
2012	96,366	\$135,222
2013	105,952	\$157,032
2014	84,765	\$122,253

<sup>1</sup>Excludes chip seal area completed by the County.

The following table shows the annual average pavement condition index (PCI) for the entire City street network from 2011 to 2015 after the annual maintenance projects were completed the prior year.

**Table 3**  
**Annual Pavement Condition Index**

Year	PCI
2011	60
2012	61
2013	68
2014	67
2015	66

The significant increase in PCI between 2012 and 2013 corresponds with incorporation of new field inspection information. The increase can mostly be attributed to several preventative maintenance treatments that were applied prior to the inspections. The differences between other years are estimated changes based on computer model projections.

### **Purpose**

In 2014, the City requested an update to the plan effective starting in 2015 for several reasons, including to:

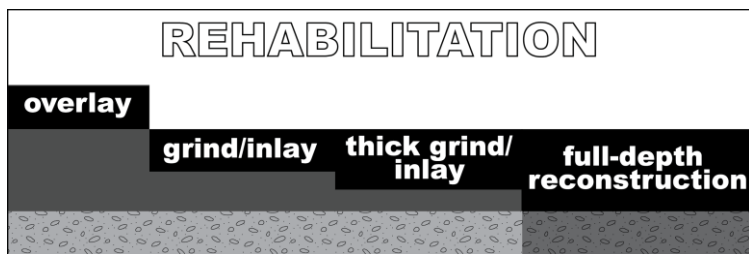
- Incorporate recent 2013 StreetSaver PCI data
- Update the StreetSaver decision tree and unit costs (increase) to more accurately reflect the work being completed and quantity of work that can be accomplished
- Incorporate American with Disabilities Act (ADA) curb ramp retrofit costs
- Incorporate latest City utility system needs (i.e. sewer improvements) as documented in recently published utility master plans
- Provide support for separate study to re-evaluate current PMUF rate

The goal of the planning effort described herein is to update the current pavement maintenance plan for the next five years to help City Operations staff manage the future pavement maintenance needs. The final planning document includes a list of projects organized by year, street segment and anticipated treatment type, which can reasonably be expected to be completed with the available funding over the next five years. The purpose of this memorandum is to summarize how the plan was updated and present the recommended Five Year Pavement Maintenance Plan for implementation.

In addition to the plan update, a parallel effort to enhance Oregon City's construction asphalt specification was made to further protect the City's investment through the PMUF program. The City has typically used the Oregon Standard Specifications for Construction for all paving work in the City. MSA worked with City staff to add special provisions to improve workmanship and subsequent long term performance of the asphalt placed with annual paving projects. The result was a custom Oregon City asphalt specification based on the 2015 Oregon Standard Specifications that could be used for multiple years to come on City projects.

## Planning Process Update

The planning process update focused primarily on the “rehabilitation” list of streets since that is where most of the budget is allocated. A separate “preventative maintenance” list was also generated once the rehabilitation list was defined. Preventative maintenance is surface treatments that are applied early in the life of the roadway to prolong the life of the surface. Examples of preventative maintenance treatments are crack sealing, slurry sealing, microsurfacing and spot repairs. Rehabilitation includes physically changing the existing pavement section. For the purposes of this report, pavement rehabilitation represents the spectrum of work encompassed by a straightforward asphalt overlay to a complete street tear down and reconstruction. Since rehabilitation work is more intensive, requires more variables to plan effectively and represents the majority of the PMUF budget, most of the discussion below centers around this category.



The plan update process generally included a “Phase 1” to collect data and develop a preliminary street rehabilitation list followed by a “Phase 2” to refine the rehabilitation project list. Following the Phase 2 process, the planning team engaged City utility staff and incorporated the utility information into a composite list that also addresses utility needs. The following paragraphs summarize the steps taken in the rehabilitation project planning process.

### *Phase 1 – Data Collection & Development of Preliminary Project List*

The primary tool used to develop the preventative maintenance and rehabilitation project lists was the City's pavement management model/database (StreetSaver). Capitol Asset & Pavement Services Inc. (Capitol Asset), the City’s ongoing pavement evaluation consultant, collects existing street data and manages the StreetSaver software for the City. The StreetSaver software includes a database of existing pavement conditions throughout the City as determined by field inspections. This database is regularly updated at the end of each summer by Capitol Asset when street projects are completed and is comprehensively updated once every three years by Capitol Asset when pavement inspections are completed. The most recent comprehensive update was completed in 2013. Incorporation of this data resulted in an adjustment to the average PCI as shown above in Table 3.

StreetSaver is also capable of assisting with project list development for multiple future years. To accomplish this, StreetSaver utilizes an internal algorithm and a decision tree. This algorithm and decision tree uses several pieces of known information including existing pavement conditions, street classification, a prescribed yearly maintenance budget, time period, treatment types and treatment costs. This input information is used to develop a project list that optimizes return on the City's investment. The overall goal and strategy is to get all streets to a PCI of 70 or better (Very Good condition) and then keep them there utilizing cost effective preventative maintenance treatments. The table below describes the condition categories used for analysis.

**Table 4**  
**Pavement Condition Categories**

PCI	Condition Category	Comments
>70	I – Very Good	
50-70	II – Good, Non-Load Related	Majority of distresses environmental related
50-70	III – Good, Load Related	Majority of distresses load related
25-50	IV – Poor	
<25	V – Very Poor	

The project list output is limited to the general criteria applied on a system level. Therefore, the planning team has utilized the StreetSaver output as a starting point to develop a project list utilizing additional specific criteria.

Prior to utilizing the StreetSaver software to develop initial project maintenance lists, MSA worked with Capitol Asset to confirm the pavement condition data was current and the decision tree reflected the City's current treatments types and costs. The planning team collectively updated the treatment types and unit costs utilized by StreetSaver and adjusted them for the planned work for 2015 and beyond. Treatment costs were generally increased to reflect the actual bid costs over the last three years. Another particularly important cost factor that was included for the first time was to accommodate for curb ramp replacements as required to meet Title II of the Americans with Disabilities Act (ADA). Additional accommodations were made for engineering and construction management. Inflation and interest rate factors were then applied to project costs for construction years beyond 2015. For an assumed budget of \$1.5M annually, \$1.05M was dedicated to rehabilitation, \$250,000 to preventative maintenance and \$200,000 for design engineering and construction administration.

Once the database was updated, two different budget scenarios were run using StreetSaver's algorithm. The first scenario assumed a pavement maintenance budget amount equal to the projected expenditures in the PMUF budget over a seven year period from 2015 to 2021. Although only five years of rehabilitation projects are reported with the final list, two extra years of rehabilitation projects were provided at this preliminary stage for flexibility during the Phase 2 planning process discussed below. The purpose of this scenario was to develop a maintenance project list that represented how the City's street maintenance needs could be

met with available funds. The second scenario assumed an unconstrained (unlimited) budget for the same seven year timeframe. The purpose of this scenario was to capture the total rehabilitation maintenance need within the City to achieve a “Very Good” condition and serve as a reference through the rest of the planning process. The results of the unconstrained analysis showed a \$37.2 Million need for rehabilitation over the next seven years with the majority of that work (\$24.5M) in 2015 to address the backlog of work necessary to get all streets to the Very Good condition.

The StreetSaver output for each budget scenario was provided as a Microsoft Excel spreadsheet and included suggested treatment types and years for work on certain street segments. Using the City's GIS system, MSA converted these spreadsheet files into more user friendly maps of the entire City road system. The maps showed suggested street maintenance work using different colors representing each of the seven study years. These maps were used for discussion purposes, marked up based on City comments, revised and continuously updated throughout the planning process.

## ***Phase 2 - Pavement Maintenance Prioritization Process***

Once the initial StreetSaver budget scenario output files and corresponding rehabilitation maps were developed, MSA met with City staff on several occasions to discuss and review additional criteria and priorities beyond those already incorporated in the StreetSaver algorithm. Documentation of the discussions are included in the meeting minutes available in Appendix C. During the prioritization meetings, criteria such as known future preventative maintenance work, street classification updates, bus routes and other considerations were evaluated and applied. In order to apply these criteria, MSA initially utilized a numerical scoring system to adjust the StreetSaver output year for which the street would be rehabilitated.

Once this additional criteria was applied, the planning team began evaluating individual street segments. The institutional knowledge gained through City staff comments and suggestions during this part of the process was key and served as the foundation for how the project list was further refined. MSA and City staff conducted a field review for the majority of streets to confirm whether the street treatments and year of treatments suggested by StreetSaver were appropriate. City staff also provided context for the maintenance need, identified the likely cause of pavement failures where relevant, and confirmed actual traffic conditions beyond the systematically applied street classification. Staff also identified other streets not currently on the list that they felt needed improvements and provided several other location specific comments which were critical to confirming maintenance needs. As individual street segments were evaluated, adjustments to the project list were made and documented. As the team refined the project list, particular care was taken to group street needs into sensible projects and also to size the project list to generally fit available funding.

A primary emphasis of the Phase 2 process was to focus more time and attention on field review with City Street Division staff to verify real world conditions. Whereas the original

2011 plan verified roughly 10% of the streets recommended for rehabilitation, the plan update process verified roughly 80% of the streets recommended.

### ***Utility Coordination***

To protect the City's pavement rehabilitation investment and minimize trench cuts in new asphalt, the planning team engaged City utility staff to coordinate overlapping utility needs. The purpose of this effort was to identify utility improvement needs/projects (water, waste water and storm water) within the seven year planning period relative to anticipated rehabilitation work and jointly consider how these interests could be coordinated.

### ***City Owned Utilities***

The planning team met with City street and utility staff to gather information regarding known utility issues for those locations where pavement rehabilitation work was tentatively planned. Typical utility issues discussed included old and/or lacking water mains slated for replacement, localized drainage problems and planned sanitary sewer upgrades among other location specific issues. Of particular importance were several planned sanitary sewer projects that are part of the recently adopted six-year sewer moratorium (Ordinance No. 14-1006) on land development. Utility needs were documented for future use and adjustments to the paving project list were made where appropriate. Adjustments generally included 1) delaying paving work to occur after utility work was completed; and 2) planning to combine certain utility and paving projects where it seemed cost effective to do so. For utility needs that did not yet have a schedule for improvements, the needs were documented in the rehabilitation list for future use. It is anticipated this information will be reviewed annually as specific pavement rehabilitation and utility improvements are scoped. The final rehabilitation project list incorporating utility needs and all feedback from City staff is shown in Figure 3: PMUF Map, Rehabilitation Project List, 2015 to 2019 in Appendix D.

### ***Private Non-City Owned Utilities***

The Five Year Pavement Maintenance Plan Update will be made available publicly for use by all utilities for their planning purposes. Given the franchise agreements which utilities have with the City and the current Pavement Cut Standard in effect (see Resolution No. 12-29, effective October 19, 2012), it is not expected that non-City utility work will be a significant long term driver of the pavement maintenance schedule. Private non-City utilities will be given an opportunity to coordinate their improvement programs with the City based on this report and may contact City Public Works staff in this regard.

### ***Preventative Maintenance List Development***

With a refined list of street rehabilitation projects developed through discussions with City street and utility staff, StreetSaver was re-run to develop a draft list of preventative maintenance projects. This was done by inserting the planned rehabilitation projects for 2015 to 2019 back into StreetSaver and re-running a preventative maintenance budget



scenario. Additionally, City street crews had previously developed its preferred preventative maintenance list for the 2015 construction season. This information was also used to update the StreetSaver preventative maintenance project list over a six year period (2015 – 2020). Although only five years of preventative maintenance projects are reported with the final list, one extra year of projects was provided at this preliminary stage for flexibility in adjusting the list. No more than six years was used for analysis (as compared to the seven year analysis for rehabilitation) Since StreetSaver often prescribes preventative maintenance treatments on a seven year cycle. The projected funding scenario was provided to City staff who reviewed the output list and made recommended adjustments. The resulting map, as shown in Figure 4, PMUF Map, Preventative Maintenance Project List, 2015 to 2019 in Appendix D, shows where preventative maintenance projects are planned to be completed over the next five years. This map will be used by City Public Works staff as a starting point to plan preventative maintenance projects on an annual basis.

### ***Public Involvement***

Once the Five Year Pavement Maintenance Plan Update is finalized, the City plans to make it available on the City's website as public information. Citizens, businesses and any other interested entities will be able to access the report to see when and where pavement maintenance is planned to be completed in their neighborhood or area of interest. The City also plans to develop some basic graphic materials, such as flyers, that can be presented and displayed at future neighborhood association meetings and other appropriate venues to further public knowledge of the pavement maintenance plan. Informational presentations may also be made for the City's Citizen Involvement Council (CIC) and Transportation Advisory Committee (TAC).

### **Recommendations**

The recommended locations and years of planned pavement maintenance (rehabilitation and preventative maintenance) work within the 2015 to 2019 (5-year) timeframe are depicted on Figures 3 and 4 in Appendix D. The data supporting these figures are tabulated in a working project list spreadsheet that will be maintained by City Operations staff. The overall pavement maintenance needs within the City regardless of funding constraints are depicted on Figure 5, PMUF Map, Unconstrained Rehabilitation Project List, 2015 to 2021 in Appendix D. The PMUF Rehabilitation and Preventative Maintenance Project Lists are summarized in Appendix E. For the purposes of simplifying the information shown, detailed project specific information used for list development has been hidden from the project list spreadsheet. Specific recommendations and findings regarding the Five Year Pavement Maintenance Plan Update are provided below.

### ***Working Project List***

It is expected that City Operations staff will continue to use the PMUF 5-Year Pavement Maintenance Plan Project Lists shown in Appendix E to manage the pavement maintenance work from year to year. As shown further below, actual budget available and actual

pavement maintenance costs will fluctuate from year to year and the total amount of pavement maintenance completed will vary accordingly. Other factors such as utility projects, areas of accelerated degradation, etc. may also influence location and treatment selection on a year to year basis. As such, MSA recommends the PMUF Rehabilitation Project List and City developed PMUF Preventative Maintenance Project List be used as starting points to coordinate and scope pavement maintenance work each year with the understanding that treatments for some streets may occur sooner or later than shown on Figures 1 and 2. The PMUF 5-Year Pavement Rehabilitation Plan Project List has additional relevant information documented from the street rehabilitation planning process. This information may be used by the City to manage delivery of the annual rehabilitation projects. Such information includes suggested treatment types from StreetSaver, known utility issues for future consideration, and other specific comments received by City staff which may be relevant.

Should yearly budgets allow for additional rehabilitation work beyond that listed in the current 5-year plan, the City can reference a separate list of supplemental projects summarized in Appendix F. This supplemental list was developed based on StreetSaver output results and City street staff input, and represent the next highest priorities.

### ***Treatment Types***

Preliminary suggested treatment types for all streets according to StreetSaver outputs are listed in the PMUF 5-Year Pavement Maintenance Plan Project Lists. Due to the number of variables associated with treatment type selection, MSA recommends City Operations staff confirm all treatment types for each street segment prior to bidding and completing the work. Formal pavement investigations and reporting may be warranted to develop the final street rehabilitation pavement sections. For continuity and constructability, it may make sense to apply a single treatment type for a given street as compared to the multiple treatments which may be shown.

### ***Utility Projects***

As discussed above, there are several location specific utility considerations which could affect pavement maintenance work. Although some of the more significant and defined utility work has already been addressed in the plan, such as the six-year sewer moratorium, most utility issues will need to be addressed and managed concurrently with the annual pavement maintenance work. Known condition of utilities and potential concerns based on City utility staff comments have been documented in the PMUF Rehabilitation Project List for future use. MSA recommends City street staff review the rehabilitation list each year as pavement maintenance projects are confirmed and coordinate with City utility staff to address utility needs as appropriate.

### ***Special Projects***

During the planning process, four key street segments were identified as requiring more extensive upgrades than would typically be included in the scope of PMUF work. These streets include Main Street, a portion of Telford Road/Center Street, Division Street and Molalla Avenue as shown on Figure 3, PMUF Map, Rehabilitation Project List, 2015 to 2019 in Appendix D. In addition to the pavement rehabilitation needs for these streets, the City would like to consider including other potential improvements such as widening, re-grading for sight distance, sidewalks, utility upgrades, etc. which have yet to be defined. Given the breadth of potential work for these streets, priority associated with the pavement condition and anticipated cost which is larger than the PMUF was intended to address, the planning team recommends these street segments be addressed as "Special" projects for which additional planning and funding considerations be made.

### ***Budget Considerations***

The work represented in the Five Year Pavement Maintenance Plan Update is the highest priority work identified by the planning team. The overall pavement rehabilitation need in the City to achieve optimal pavement condition (Condition Category I – Very Good), regardless of budget, is depicted in the Unconstrained Budget Project Map represented by Figure 5: PMUF Map, Unconstrained Budget Rehabilitation Project List, 2015 to 2021 in Appendix D. The total cost to achieve optimal pavement condition (PCI > 70) is estimated at \$37.2M. The following table represents the estimated budget for the PMUF based on projected street utility fee income:

**Table 5**  
**Estimated PMUF Budget for Pavement Maintenance**

<b>Year</b>	<b>Rehabilitation</b>	<b>Preventative Maintenance</b>	<b>Engineering &amp; Construction Management</b>	<b>Total</b>
2015	\$1.05M	\$0.25M	\$0.20M	\$1.50M
2016	\$1.05M	\$0.25M	\$0.20M	\$1.50M
2017	\$1.05M	\$0.25M	\$0.20M	\$1.50M
2018	\$1.05M	\$0.25M	\$0.20M	\$1.50M
2019	\$1.05M	\$0.25M	\$0.20M	\$1.50M
<b>Overall:</b>	<b>\$5.25M</b>	<b>\$1.25M</b>	<b>\$1.0M</b>	<b>\$7.50M</b>

Note: Rounded to the nearest 0.05M

The following table is a summary of the estimated construction costs for the combined planned rehabilitation and preventative maintenance work:

**Table 6**  
**Estimated Pavement Maintenance Costs**

<b>Year</b>	<b>Rehabilitation</b>	<b>Preventative Maintenance</b>	<b>Engineering &amp; Construction Management</b>	<b>Total</b>
2015	\$0.88M	\$0.26M	\$0.20M	\$1.34M
2016	\$1.01M	\$0.20M	\$0.20M	\$1.41M
2017	\$0.61M	\$0.29M	\$0.20M	\$1.10M
2018	\$1.23M	\$0.20M	\$0.20M	\$1.63M
2019	\$1.11M	\$0.25M	\$0.20M	\$1.56M
<b>Overall:</b>	<b>\$4.84M</b>	<b>\$1.20M</b>	<b>\$1.0M</b>	<b>\$7.04M</b>

Note: Rounded to the nearest 0.01M

The estimated costs shown above are project totals including engineering, construction and construction management. Based on the above estimated costs and available budget, there is a surplus of \$0.46M in funding to complete the planned work. As maintenance work is completed from year to year, this difference between budget and estimated costs will continue to be monitored and evaluated by City Operations staff. Appropriate modifications will be made to the final rehabilitation and preventative maintenance project lists each year to match the actual funding with actual bid prices. The result of applying these projects on the City-wide PCI based on available budget is provided in the Conclusions section below.

### ***Future Updates***

The current pavement maintenance plan has been developed for a five-year period to provide long-term guidance to the City in planning maintenance projects. Due to established pavement life cycles and several other variables, a plan beyond this time period would come with a high degree of uncertainty. Over time, a significant discrepancy could develop between plan and budget by the end of the planning horizon. As such, MSA recommends a comprehensive update should begin no later than 2019 for work starting in 2020.

### **Conclusions**

The implementation of the PMUF through rehabilitation and preventative maintenance projects has and will continue to have a positive impact on City streets. Due to the mandatory inclusion of curb ramp retrofits to meet federal ADA requirements and increases in construction prices, the City will likely complete less pavement maintenance with respect to prior years. As a result, the system-wide average PCI is anticipated to decline over the next several years based on the budget described above. The following list summarizes the results of the StreetSaver analysis based on the planning rehabilitation and preventative maintenance plan.

- PCI decreases from 66 to 64
- Deferred maintenance increases from \$17 million to \$25.4 million
- Percentage of street network in Very Good condition (PCI > 70) increases from 64.8% to 67.6%
- Percentage of street network in Very Poor condition (PCI < 25) increases from 13.4% to 16.0%

In anticipation of a potential reduction in pavement condition, the City conducted a separate analysis of the rates for the street utility fee and anticipated revenue. Based on the results of this analysis, it appears revenues may be greater than that assumed with this planning process. The following list summarizes the results assuming an additional \$450,000 in annual funding of which \$250,000 is applied to rehabilitation and \$200,000 is applied to preventative maintenance.

- PCI increases from 66 to 67
- Deferred maintenance increases from \$17 million to \$23.9 million
- Percentage of street network in Very Good condition (PCI > 70) increases from 64.8% to 72.0%
- Percentage of street network in Very Poor condition (PCI < 25) increases from 13.4% to 16.0%



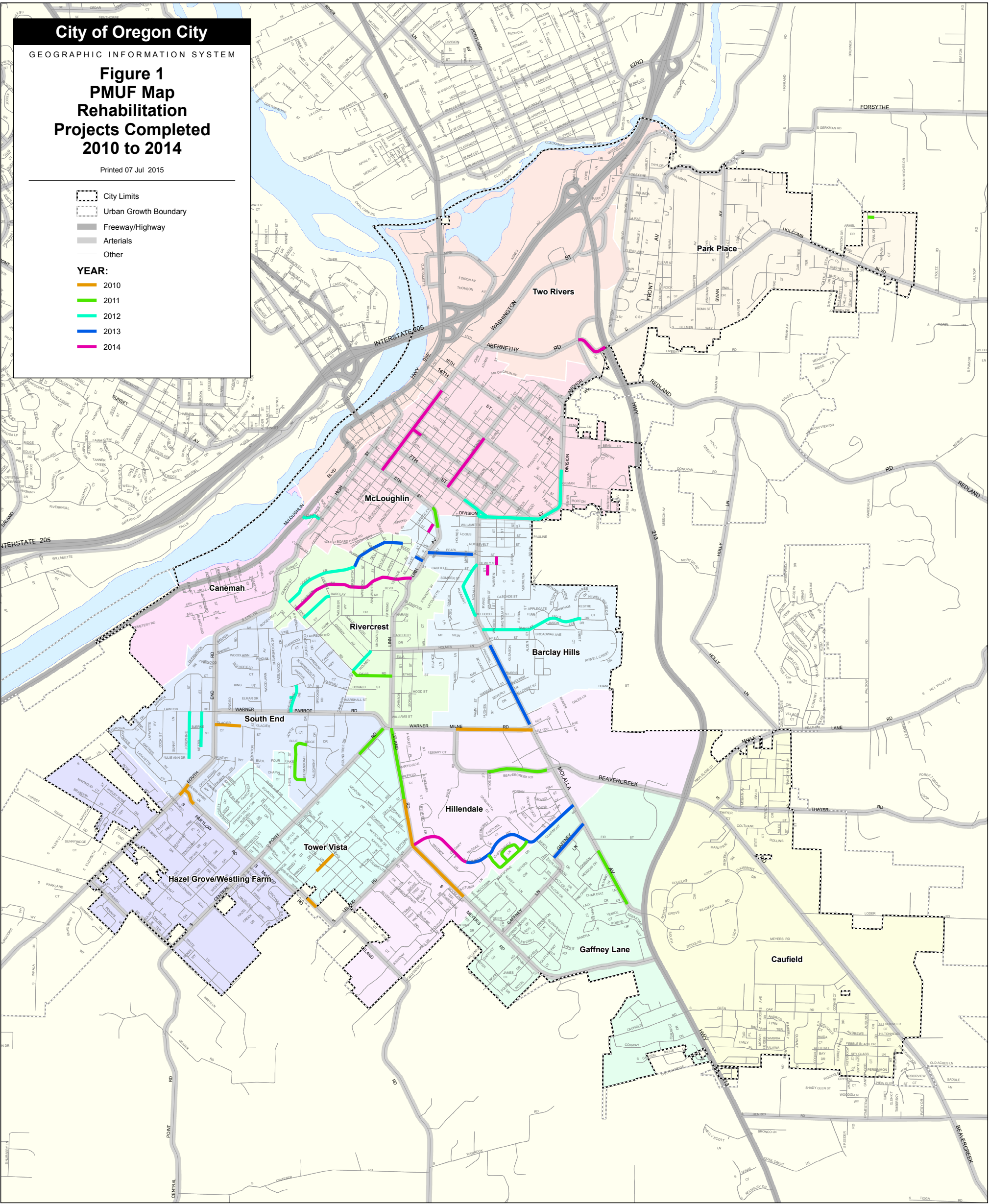




## **APPENDIX A**

### **PMUF Projects Completed Maps**

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**APPENDIX B**  
**2012 Pavement Maintenance**  
**Utility Fee Annual Report**

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# 2012

# Pavement Maintenance Utility Fee Annual Report

*Preserving our past - building our future*

## Prepared by:

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Public Works Director  
&

Kevin Hanks  
Street Supervisor

Oregon City Public Works  
Department

Report Date: October 6, 2014



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# 2012 Pavement Maintenance Utility Fee Annual Report

## Purpose for an Annual Report

In accordance with Ordinance No. 08-1007, this established City Code 13.30, Transportation Utility Fees (TUF):

*"City staff shall prepare an annual report that presents how revenues were spent."*

For consistency and to better align the name of the fee with the purpose, throughout the remainder of this report the TUF will be referred to as a Pavement Maintenance Utility Fee (PMUF).

## Background

Oregon City has almost 135 miles of surface streets with a reconstruction value of approximately \$1 million per mile. Transportation funding is one of the most challenging issues facing public agencies. In the past, Oregon City has used State gas taxes and road transfer revenues to provide limited maintenance of the City's street system. Historically, the City's pavement maintenance liability far exceeded the amount available for use from these revenue sources.

In 2007, the City Commission asked the Public Works Department and a Transportation Funding Study Citizens Committee to identify and establish a sustainable funding source for street maintenance. The Committee concluded that a PMUF is the most equitable and stable source for street funding.

They recommended an annual revenue goal of \$1.5 million to at least maintain the City's average Pavement Condition Index (PCI)<sup>1</sup>. The City Commission decided that this target be gradually phased in over a 5-year period to allow customers time to incrementally



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<sup>1</sup> Pavement Condition Index (PCI), developed by the United States Army Corps of Engineers, is based on a visual survey of the pavement and a numerical value between 0 and 100 to define the condition with 100 representing excellent pavement.



*Paving in progress.*

budget for the fee. With this phased in fee scenario, first year fees could provide \$600,000 and jump-start the City's pavement maintenance program.

On May 21, 2008, the City Commission approved Ordinance No. 08-1007 establishing the PMUF. The purpose of the fee was to provide cost recovery for maintaining and operating Oregon City's transportation system. The fee was based on actual cost projections from the StreetSaver Pavement Management software (model). Like those in many other Oregon communities, the fee is also based on nationally recognized information developed by the Institute of Traffic Engineers that estimates the average number of vehicle trips generated by a property based on how that property is used. This is the fifth and final year of the phased in fee.

### **Grading the Condition of our Roadways**

Documentation of pavement history including inspections, maintenance, and cost scenarios are examples of the kinds of information recorded in the City's StreetSaver software program (database). Each street is split into one or more segments and tracked as an asset along with the maintenance history of the segment. Oregon City has been collecting inspection history since 1983. Since 2008, the maintenance work completed is added to and tracked in the StreetSaver Pavement Management System. A PMUF map showing major pavement maintenance accomplishments since 2008 is attached as ***Exhibit A***.

### **A Billable Unit Rate**

In order to meet the annual revenue goal of \$1.5M, the residential monthly unit rate, applied to single family residential land uses, was originally established at \$1.15 per adjusted average daily trip. The monthly non-residential unit rate, applied to all other land uses, was established at \$0.189 per adjusted average daily trip. For the first five years, this fee was phased in to help ease the impact of this fee. This is the fifth and final year of the phased in rate increases. Table 1 shows the rates assessed to each type of use per year since the inception of the fee.

**Table 1 – PMUF Rates**

Time Period	Residential Monthly Rate	Residential Rate per Trip	Non-Residential Rate per Trip	Annual Total Revenue
July 1, 2008 through June 30, 2009	\$4.50	\$0.470	\$0.077	\$605,650
July 1, 2009 through June 30, 2010	\$6.00	\$0.627	\$0.103	\$972,044
July 1, 2010 through June 30, 2011	\$7.50	\$0.784	\$0.129	\$1,231,835
July 1, 2011 through June 30, 2012	\$9.00	\$0.940	\$0.154	\$1,464,175
July 1, 2012 through July 30, 2013	\$11.22	\$1.172	\$0.192	\$1,775,000
<b>July 1, 2013 through June 30, 2014*</b>	<b>\$11.56</b>	<b>\$1.208</b>	<b>\$0.198</b>	<b>\$1,819,000 (estimated)</b>

\*Ordinance 08-1007 specifies that unit rates may be adjusted annually to account for inflation in an amount of no more than 3 percent. These rates assume an inflationary rate increase of 3 percent.

### **Rates and Rate Types**

Adoption of the PMUF established a rate structure providing for a variety of parcel types. The rates for single family residences are a straight-forward unit rate per each parcel. Multi-family housing rates were a similar calculation. The monthly fee for schools is computed based on the number of students which varies based on enrollment.

All other developed parcels have a monthly fee based on the non-residential unit rate and then considering factors of estimated daily trips and square footages of buildings. Currently, there are 555 non-residential customers.

### **Oregon City's Transportation System**

Within the city limits, the transportation system is comprised of multiple jurisdictional responsibilities. Table 2 below provides a history and summary of the mileage obligation of each jurisdiction:

**Table 2 – Transportation System Inventory**

Year	City	County	Private	ODOT	Grand Total
<b>2006 Miles *</b>	128.15	10	8	11.4	<b>157.55</b>
<b>2007 Miles *</b>	129.08	11.94	9.93	12.48	<b>163.43</b>
<b>2008 Miles *</b>	131.01	11.58	9.34	12.31	<b>164.24</b>
<b>2009 Miles*</b>	134.71	7.6	9.56	12.49	<b>164.36</b>
<b>2010 Miles</b>	135.43	7.75	9.84	12.47	<b>165.49</b>
<b>2011 Miles</b>	134.8	7.77	10.67	12.54	<b>165.78</b>
<b>2012 Miles**</b>	134.46	7.13	10.95	12.74	<b>165.28</b>

\* Mileage shown differs from that shown in the 2008 and 2009 annual reports due to calculation errors and the inclusion of unimproved road miles.

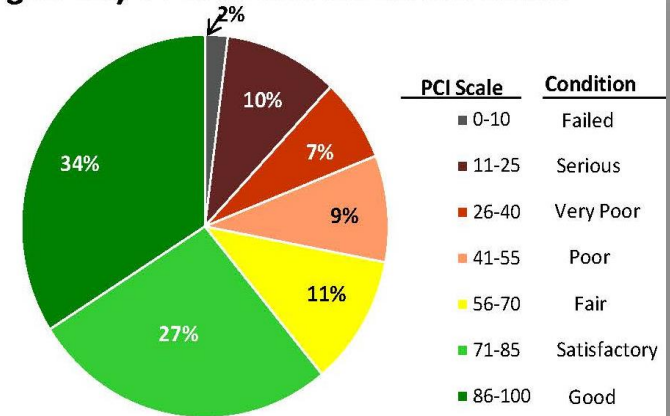
\*\*Totals dropped slightly due to the removal of some alleys from the calculation that don't serve as roadways.

### **Oregon City's Pavement Condition Index**

In June 2007, the City completed a pavement condition survey, reviewing the condition of portions of all Oregon City streets. Historically the City has completed this evaluation every three years and Oregon City has been collecting inspection history since 1983. The pavement condition survey is a detailed field assessment of a minimum 10% representative sample of each street segment. This survey information is compiled within the City's StreetSaver software system where a computation is run to establish a city-wide Pavement Condition Index (PCI - see footnote on page 3 for PCI description).

In 2007, the overall city-wide average PCI was 68. In March, 2010, the City completed a new pavement condition survey and the overall city-wide PCI was 61 and the 2011 PCI was 60.

### **Oregon City's Pavement Condition Index**



*Percentages based on area of road surfaces*

This reduction in PCI is an indication that the deterioration of Oregon City's pavement system continues to exceed the rate of repair. It is also an indication that the City has a backlog of maintenance needs which have progressed into a condition that will require higher cost repair work.

Although Oregon City's PCI has gone down since the inception of the phased in fee, the good news is that 72% of our roadways now have a "fair" condition or greater and only 28% of our roadway surfaces have a "poor" condition rating or lower. A color-coded Pavement Condition Index (PCI) map is attached as **Exhibit B**.

## PMUF Accomplishments

### Preventive Maintenance

Preventive pavement maintenance treatments are surface treatments that are applied early in the life of the roadway to prolong the life of the surface. The objective of preventive maintenance is to add a protective coating on top of the existing surface to keep surface water from seeping through the small cracks into the underlying base rock or native soil. Crack sealing, slurry sealing, and chip sealing are the traditional types of preventive maintenance used in our region.

**2012** - During the fall of 2012, the slurry seal program included 40 individual street segments and a City facility accessway, all of which were scattered throughout Oregon City.

In-house crews prepared the streets in the spring and early summer months by cleaning and sealing all surface cracks prior to the slurry seal application in addition to completing asphaltic concrete patches and repairs. A slurry seal contractor later applied the slurry sealing materials.

Preventive maintenance project locations and segment details for 2012 is included in Table 3 and shown in map form as **Exhibit C**.

**Crack Seal** - Injection of hot tar or asphalt into cracks and paving seams.

**Slurry Seal** - Very thin layer of liquid asphalt and sand used to seal street surfaces. (Cost is typically less than \$2 per square yard.)

**Chip Seal** - A thin layer of hot asphalt is applied to the street surface then small gravel is applied and leveled and compacted into place. (Costs range from \$2.50 to \$3.00 per square yard.)

**Micro Seal** - A surface treatment similar to slurry seal using modified liquid asphalt which cures faster and contains a heavier layer of fractured rock. (Cost is typically \$2.50 to \$3.50 per square yard.)

**Overlay** - A new layer of asphalt or concrete, which adds structural strength and seals the surface. Often grinding or inlays are needed to match pavement grades or remove severely distressed pavement. (Costs range from \$6 to \$26 per square yard, depending on the overlay thickness and preparation.)

**Reconstruction** - The most expensive street treatment, reconstruction entails extensive street repair work that involves excavating the existing street and rebuilding gravel road base and surface layers. (Costs range from \$35 to \$55 per square yard depending on the pavement section and preparation.)

**Table 3 - Preventive Maintenance Treatment**

**Preventive Pavement Maintenance Areas (2012)**  
**Type II Slurry Seal @ \$1.40/sq. yd.**

Street	Beginning	Ending	Length (ft)	Total Area (sf)	Total Area (sy)	Total Cost
8th St	Hwy 99E	Railroad Ave	488	23,424	2,603	\$3,644
9th St	Taylor St	Division St	1,135	37,455	4,162	\$5,826
Allegheny Dr	Shenandoah Dr	End (S)	317	9,193	1,021	\$1,430
Augusta Dr	Entirety		803	23,287	2,587	\$3,622
Captains Ct	Entirety		246	14,372	1,597	\$2,236
D St	Entirety		882	22,050	2,450	\$3,430
Dallas St	Entirety		739	28,570	3,174	\$4,444
Davis Rd	Entirety		1,220	33,320	3,702	\$5,183
Derringer Dr	Entirety		433	11,691	1,299	\$1,819
Duck Ct	Entirety		182	11,660	1,296	\$1,814
Front Ave	Forsythe Rd	La Rae Rd	808	34,672	3,852	\$5,393
Geranium Pl	Entirety		1,002	28,056	3,117	\$4,364
Haley Ct	Entirety		447	19,363	2,151	\$3,012
Hazeltown Dr	Geranium Pl	125' NE of Geranium Pl	122	3,538	393	\$550
Hazelnut Ct	Entirety		182	11,746	1,305	\$1,827
Hiefield Ct	Entirety		559	22,252	2,472	\$3,461
Hunter Ave	Forsythe Rd	Holcomb Blvd	2,998	65,956	7,328	\$10,260
Inishbride Ct	Entirety		442	19,410	2,157	\$3,019
JQ Adams St	6th St	9th St	921	34,077	3,786	\$5,301
Kathaway Ct	Entirety		129	10,278	1,142	\$1,599
Kolar Dr	Entirety		413	11,564	1,285	\$1,799
Landmark St	Entirety		162	5,323	591	\$828
Lot Whitcomb Dr	Cominger Dr	Leland Rd (to south)	816	27,412	3,046	\$4,264
Madrona Ct	Entirety		265	6,890	766	\$1,072
Madrona Dr	Madrona Ct	Lafayette Ave	307	7,675	853	\$1,194
Marjorie Ln	Entirety		869	40,791	4,532	\$6,345



Preventive Pavement Maintenance Areas (2012) Type II Slurry Seal @ \$1.40/sq. yd.						
Street	Beginning	Ending	Length (ft)	Total Area (sf)	Total Area (sy)	Total Cost
McCord Heights Ct	Entirety		230	12,670	1,408	\$1,971
Mt Hood St	Entirety		696	14,616	1,624	\$2,274
Newell Crest Dr	Entirety (including 2 dead ends)		1,130	37,370	4,152	\$5,813
Parrish Rd	Central Point Rd	30' W of Kolar Dr	977	21,494	2,388	\$3,344
Pebble Beach	Entirety		1,533	48,924	5,436	\$7,610
Prospector Ter	Entirety		1,709	47,852	5,317	\$7,444
Railroad Ave	7th St	9th St	635	10,160	1,129	\$1,580
Randall Ct	Entirety		100	6,500	722	\$1,011
Roman Ct	Entirety		32	6,960	773	\$1,083
Salmonberry Dr	Hazलगrove Dr	275' West of Hazलगrove Dr	275	8,250	917	\$1,283
Settler's Point Pump Station accessway	Entirety		150	5,994	666	\$932
Sunset Springs Dr	McCord Rd	Hazलग Park Dr	768	21,504	2,389	\$3,345
Westwood Dr	Geranium Pl	End	112	3,136	348	\$488
White Ln	Central Point Rd	City Limits	1,668	46,704	5,189	\$7,265
Willis Dr	Entirety		469	13,132	1,459	\$2,043
		<b>TOTALS</b>	<b>27,371</b>	<b>869,291</b>	<b>96,588</b>	<b>\$135,222</b>

### **In-House Pavement Maintenance and Street Reconstruction**

In-house pavement maintenance is work that the Oregon City Public Works Department (OCPW) performs using City equipment. In the summer months, staffing is augmented by seasonal workers and Street Division work can be anything from pothole repair or spot repair of small pavement failures to larger scale pavement failure repair using the same in-house resources. In-house pavement maintenance projects focus on patching and inlays as well as crack sealing.

**Summer 2012** - OCPW used in-house staff and equipment to apply a total of 619 tons of asphalt and committed over 800.5 staff hours to apply 33,600 pounds of crack seal material.

### **Contract Street Reconstruction**

Typically, this work includes asphalt overlays, cold plane pavement removal (milling) combined with an asphalt overlay, structural dig-outs and repairs, or a complete reconstruction of the entire street section. Costs for this kind of work vary widely based on the type of repairs, classification of the street, volume of traffic, anticipated vehicle loading, and complexity of temporary traffic control. Generally these kinds of projects include engineering, project administration, detailed plans, and contract specifications.

In 2012, the City advertised the 2012 Pavement Rehabilitation Project and received five bids. The engineer's estimate for the project was \$1,549,834.12 and the low bid came in at \$1,879,030.93. The successful low bidder was awarded the project; however, because it was over budget, change orders were issued resulting in a net decrease in the contract price of \$629,532.88. This reduction in contract price was achieved through the deletion of all work on Molalla Avenue, Hazel Street and Gaffney Lane.



The final project cost ended up being \$1,249,498.05 and of that amount, \$164,236.50 (sewer \$72K, storm \$55,930; water \$8,280) was for utility work paid using sanitary sewer, stormwater and water funds and \$1,048,764.59 (this is amount below but actual was \$1,113,288.05) of the project was for street work and was paid for using the PMUF fee. The work performed is outlined in Table 4. A map showing the 2012 street repair projects is attached as **Exhibit C** and the project plan set cover sheet and the bid tabulation sheet is included as **Exhibits D and E**.

**Table 4 – 2012 Contracted Street Reconstruction**

Street	Beginning	Ending	Area (sf)	Estimated Treatment Unit Cost (\$/sf)*	Estimated Project Allocation**	General Treatment Description
S. 2nd Street	Hwy. 99E	S. High Street	22,500	\$3.46	\$77,807	2" grind & 4" inlay/overlay
7 <sup>th</sup> Street	Harrison Street	Division Street	40,000	\$1.79	\$71,738	2" grind & inlay
Barclay Avenue	Telford Road	Cherry Avenue	32,900	\$1.41	\$46,342	2" overlay
Barclay Hills Drive	Molalla Avenue	Chickaree Drive	102,300	\$2.62	\$268,410	2" grind & inlay or 4" grind & inlay with CTB or reconstruction

Street	Beginning	Ending	Area (sf)	Estimated Treatment Unit Cost (\$/sf)*	Estimated Project Allocation**	General Treatment Description
Birchwood Drive	Warner Parrott Road	Hazelwood Drive	34,900	\$1.88	\$65,576	2" overlay
Division Street	7 <sup>th</sup> Street	15 <sup>th</sup> Street	102,000	\$1.51	\$153,847	2" grind & inlay
Holmes Lane	Telford Road	McCarver Avenue	17,300	\$2.68	\$46,366	2" grind & 3" inlay/overlay
Josephine Street	Lawton Road	End	37,000	\$1.23	\$45,577	2" overlay
Netzel Street	Lawton Road	End	28,600	\$1.74	\$49,858	2" overlay
Ogden Drive	Telford Road	Brighton Avenue	74,100	\$1.25	\$92,782	2" overlay
Pleasant Avenue	Molalla Avenue	Molalla Avenue	43,500	\$3.00	\$130,463	2" overlay or reconstruction
				<b>TOTALS</b>	<b>\$1,048,766</b>	

\* The Estimated Unit Treatment Cost = the Estimated Project Allocation / Area

\*\* The Estimated Project Allocation is not a detailed bid breakout of each unit quantity and unit price but rather it's an allocation based on an estimate of the percent of the overall project cost minus the cost of underground utilities or sidewalk improvements (non PMUF related work).

## Pavement Maintenance Planning

### Five Year Pavement Maintenance Plan

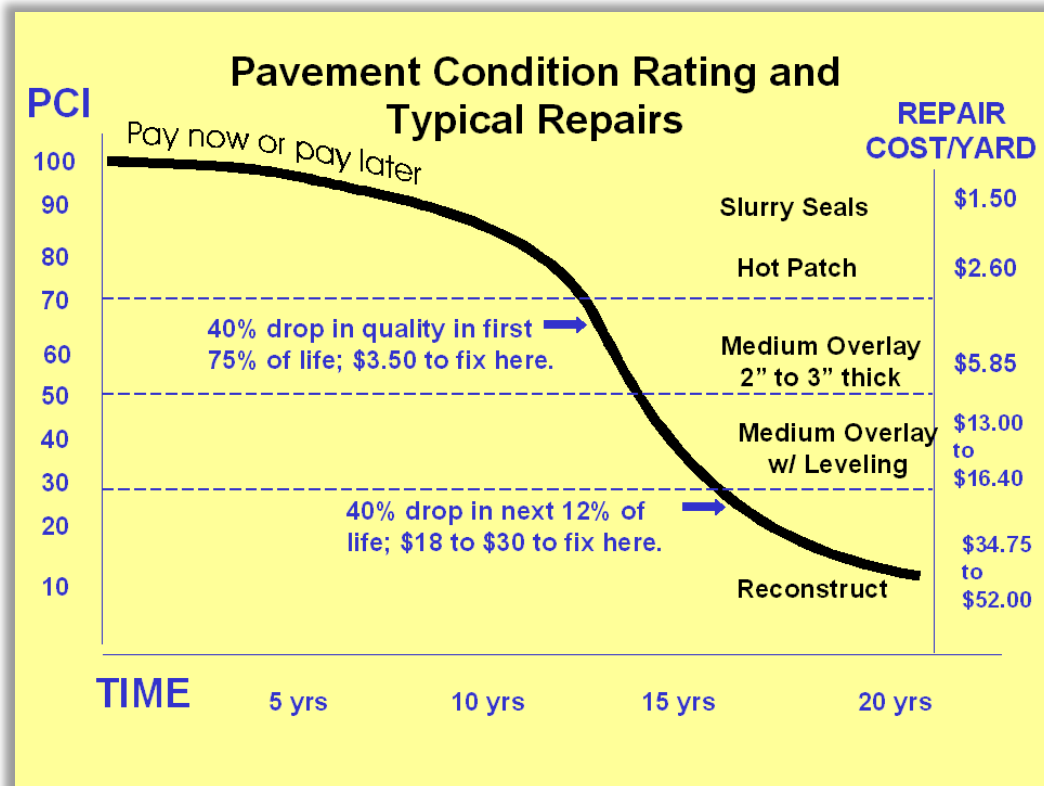
In 2011, the City contracted with Murray, Smith & Associates, Inc. (MSA), to prepare a five year plan ([www.orcity.org/publicworks/five-year-pavement-maintenance-plan-2011](http://www.orcity.org/publicworks/five-year-pavement-maintenance-plan-2011)). The intent of the plan was to develop a long term pavement maintenance plan for 2012 through 2016 to support continued effective use of the PMUF. This plan will help guide City Operations staff with the management of future pavement maintenance needs.

The overall planning team for this effort consisted of MSA and several City Public Works staff who participated in the planning meetings and overall plan review. The planning process included evaluation of both rehabilitation and preventive maintenance techniques with an emphasis on rehabilitation which represents the majority of the PMUF budget. The planning team utilized the City's StreetSaver software which included known existing pavement conditions, field verifications and budget constraints, to develop an initial project list based on system wide criteria such as street classification, traffic volumes, etc.

The planning team scrutinized the draft project list by considering additional location-specific criteria such as known future development projects, street classification updates, bus routes, etc. The planning team prioritized the location specific criteria and made resulting adjustments to the project list. The planning team successively met with City utility staff to coordinate possible overlapping projects to avoid the potential future conflict of cutting recently rehabilitated pavement. During this process, certain paving projects were delayed or combined with known utility projects where it seemed equitable to do so.

The final recommended locations and years of planned pavement maintenance (rehabilitation and preventive maintenance) work within the 2012 to 2016 (5-year) timeframe were incorporated into the plan. The implementation of these projects has and will continue to have a positive impact on Oregon City streets.

The plan found that although funding is less than what is necessary to improve all pavement surfaces in Oregon City, the overall average pavement condition in Oregon City is anticipated to improve based on this plan. According to the StreetSaver projections, the average Pavement Condition Index (PCI) for the City is projected to increase (improve) from 60 to 61 in five years if maintenance work progresses as recommended. In this respect, the PMUF is anticipated to meet the City's goal to maintain and improve where possible the Oregon City's street infrastructure system.



## Future PMUF Work

The City executed a personal services agreement with Murray, Smith & Associates, Inc., an engineering consultant, to develop the plans and specifications necessary to solicit bids for the City's 2012 and 2013 Oregon City Roadway Reconstruction Projects. Engineering consulting services for development of a bid package for the contract overlay work was \$194,308 for the 2012 project and is estimated to be approximately \$212,718 for the 2013 project. Table 5 includes a tentative description of the project limits, a short description of the anticipated work and project cost estimates.

**Table 5 - 2013 Street Work**

Street	Beginning	Ending	Estimated Cost	General Treatment Description
Brighton Avenue	Ogden Drive	Jersey Avenue	\$37,139	2" overlay
Clairmont Way	Molalla Avenue	Autumn Lane	\$957,543	Grind existing pavement and place a 4" inlay on a portion and an overlay and restriping on the remainder.
Gaffney Lane	Molalla Avenue	Berta Drive	\$63,613	Grind existing pavement and place a 2" inlay on east and west end of Gaffney and a 4" inlay in the center
Hazel Street	Linn Avenue	East Avenue	\$21,312	2" overlay
Molalla Avenue	Holmes Lane	Warner Milne Road	\$76,282	Grind existing pavement and place a 2" inlay
Pearl Street	Molalla Avenue	Linn Avenue	\$23,066	2" overlay on east and west ends, grind existing pavement in the center section and place a 4" inlay.
<b>TOTAL</b>			<b>\$1,178,955</b>	

In addition to roadway reconstruction projects, the City has allocated \$200,000 towards slurry seal projects (including crack sealing where needed) during the summer of 2013 as well as funding to contract with Clackamas County to install a chip seal on Holcomb Boulevard. The proposed 2013 Street Repair project map is attached as **Exhibit F**.

## Conclusion

The summer of 2012 continued to be a productive and successful continuation of the City's pavement management program. This is a program which we are committed to working into an already heavy workload. We know this program is important and valuable to the

community. We continue to improve our in-house paving program and balance the demands on the department with the demands of the paving season. Our small paving crew and lightweight equipment continue to provide strong support for the more robust abilities of construction companies in the business of milling and paving.

Preventive maintenance continues to be a top priority for the City's 10 to 15 year-old residential streets, in some cases, even older streets. This is consistent both with the direction we received from the Transportation Funding Study Citizen Committee and with the way other agencies with proven preventive pavement maintenance programs proceed.

Thus far, all pavement maintenance expenses have stayed within the City's PMUF budget allocation. The highly competitive bids have helped to ensure that for the most part, the City has been able to continue with planned projects as scheduled; however, the City has had to complete a few projects in phases for budgetary reasons and a few roadways requiring major reconstruction such as Division Street have also been delayed for funding reasons.

## Exhibits

Exhibit A – Map - PMUF Major Accomplishments 2008-2012

Exhibit B – Map - Pavement Condition Index (PCI)

Exhibit C – Map - 2012 Street Repair Projects

Exhibit D – Project Cover Sheet - 2012 Pavement Rehabilitation Projects

Exhibit E – Bid Tabulation Sheet - 2012 Pavement Rehabilitation Projects

Exhibit F – Map - Proposed 2013 Street Repair Projects

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# City of Oregon City

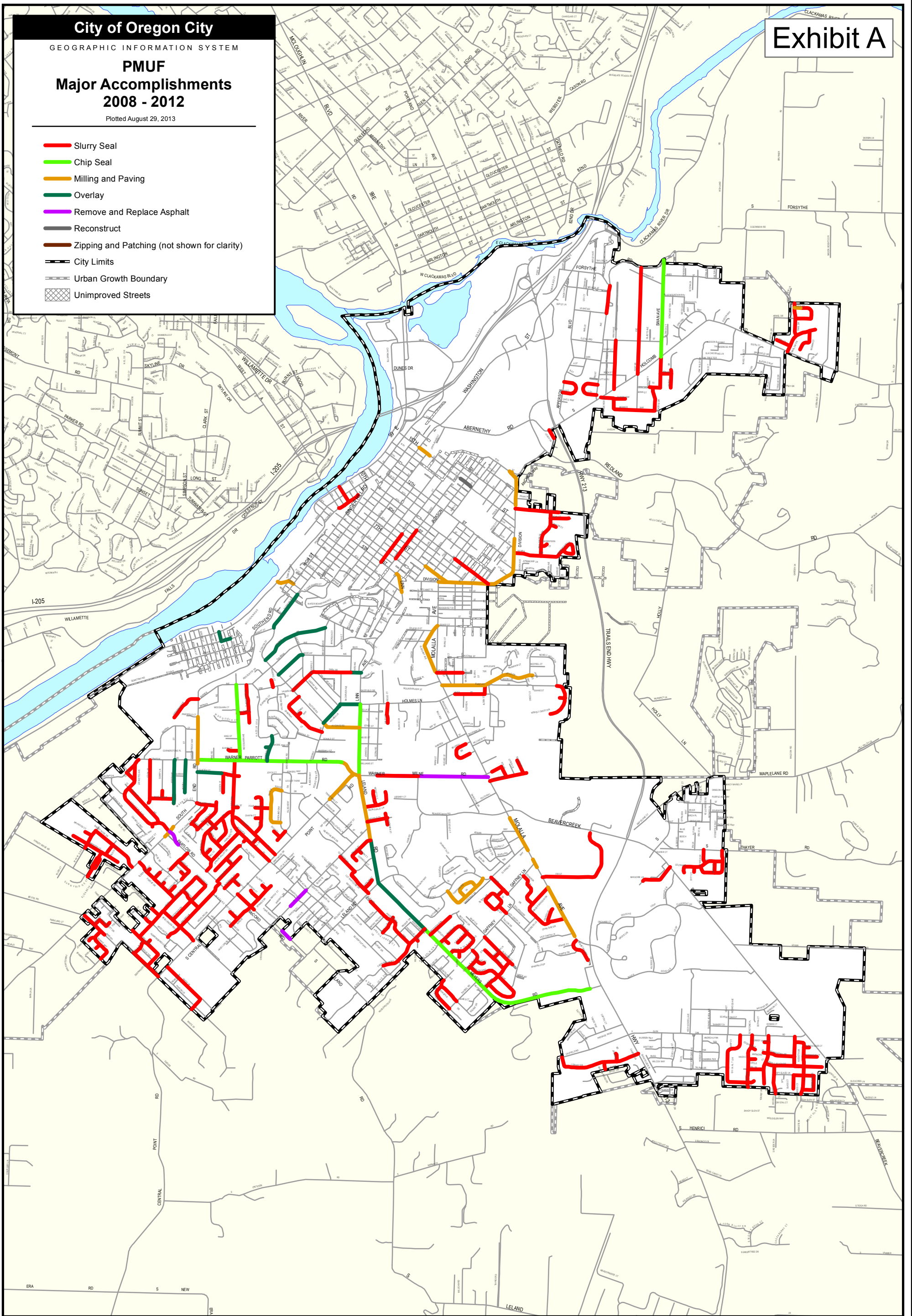
GEOGRAPHIC INFORMATION SYSTEM

## PMUF Major Accomplishments 2008 - 2012

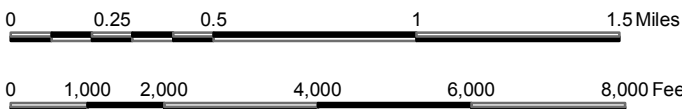
Plotted August 29, 2013

- Slurry Seal
- Chip Seal
- Milling and Paving
- Overlay
- Remove and Replace Asphalt
- Reconstruct
- Zippering and Patching (not shown for clarity)
- City Limits
- Urban Growth Boundary
- Unimproved Streets

### Exhibit A



The City of Oregon City makes no representations, express or implied, as to the accuracy, completeness and timeliness of the information displayed. This map is not suitable for legal, engineering, or surveying purposes. Notification of any errors is appreciated.



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503-657-6629 fax  
[www.ci.oregon-city.or.us](http://www.ci.oregon-city.or.us)



Plot date: 8/29/2013  
Map: 2008 - 2012 Street Repair Projects - 11x17P.mxd  
Plot: 2008 - 2012 Street Repair Projects - 11x17P\_20130829.pdf



City of Oregon City

GEOGRAPHIC INFORMATION SYSTEM

Pavement Condition Index (PCI)

Printed August 28, 2013

Pavement Condition

% of Total\*

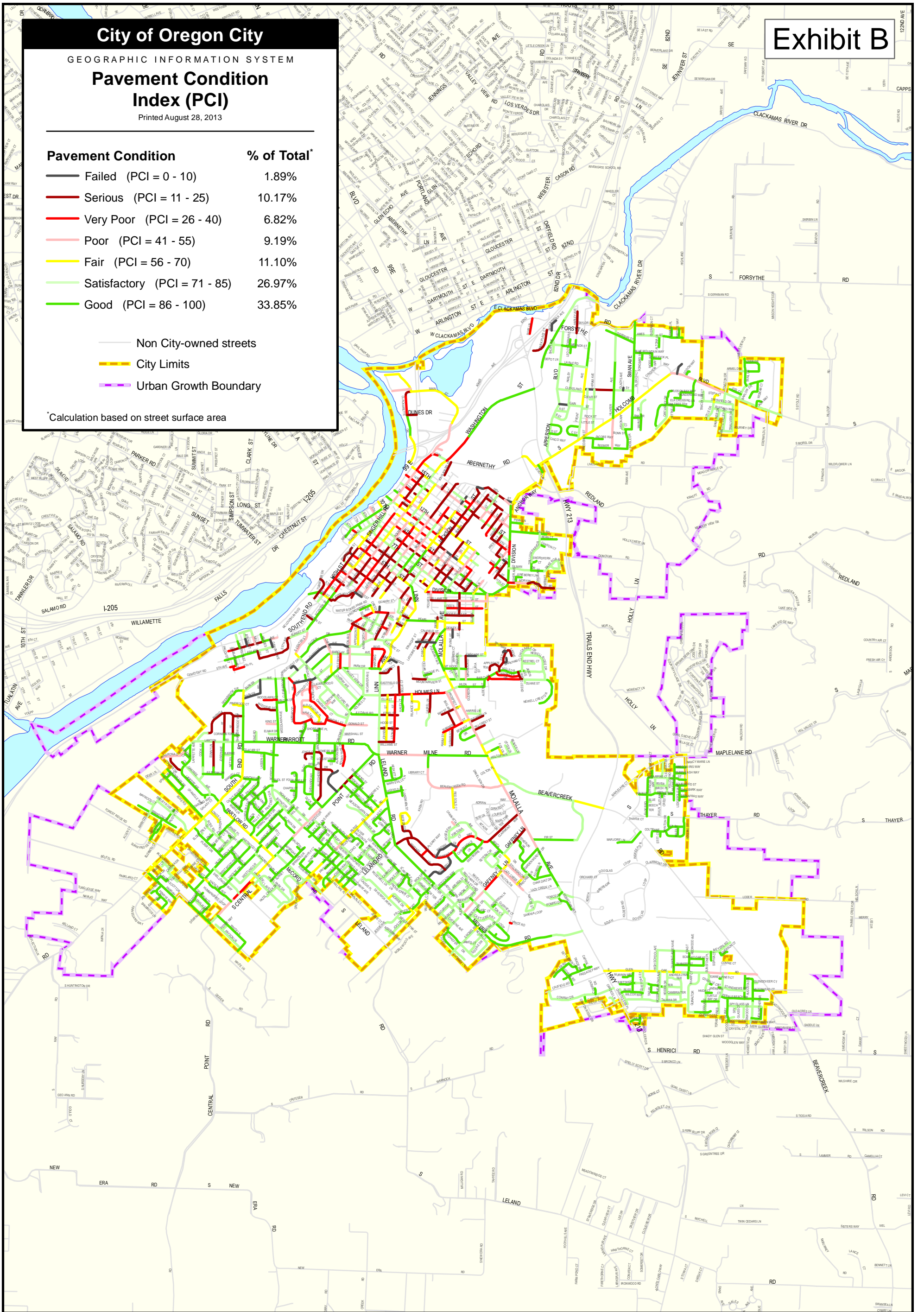
Failed (PCI = 0 - 10)	1.89%
Serious (PCI = 11 - 25)	10.17%
Very Poor (PCI = 26 - 40)	6.82%
Poor (PCI = 41 - 55)	9.19%
Fair (PCI = 56 - 70)	11.10%
Satisfactory (PCI = 71 - 85)	26.97%
Good (PCI = 86 - 100)	33.85%

Non City-owned streets

City Limits

Urban Growth Boundary

\*Calculation based on street surface area



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0 0.5 1 Miles

0 2,000 4,000 6,000 Feet

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Plot date: August 28, 2013  
Plot name: Street Saver Map - PCI Codes - 11x17P - 20130823.pdf  
Map name: Street Saver Map - PCI Codes - 11x17P.mxd

Please recycle with colored office grade paper.






# City of Oregon City

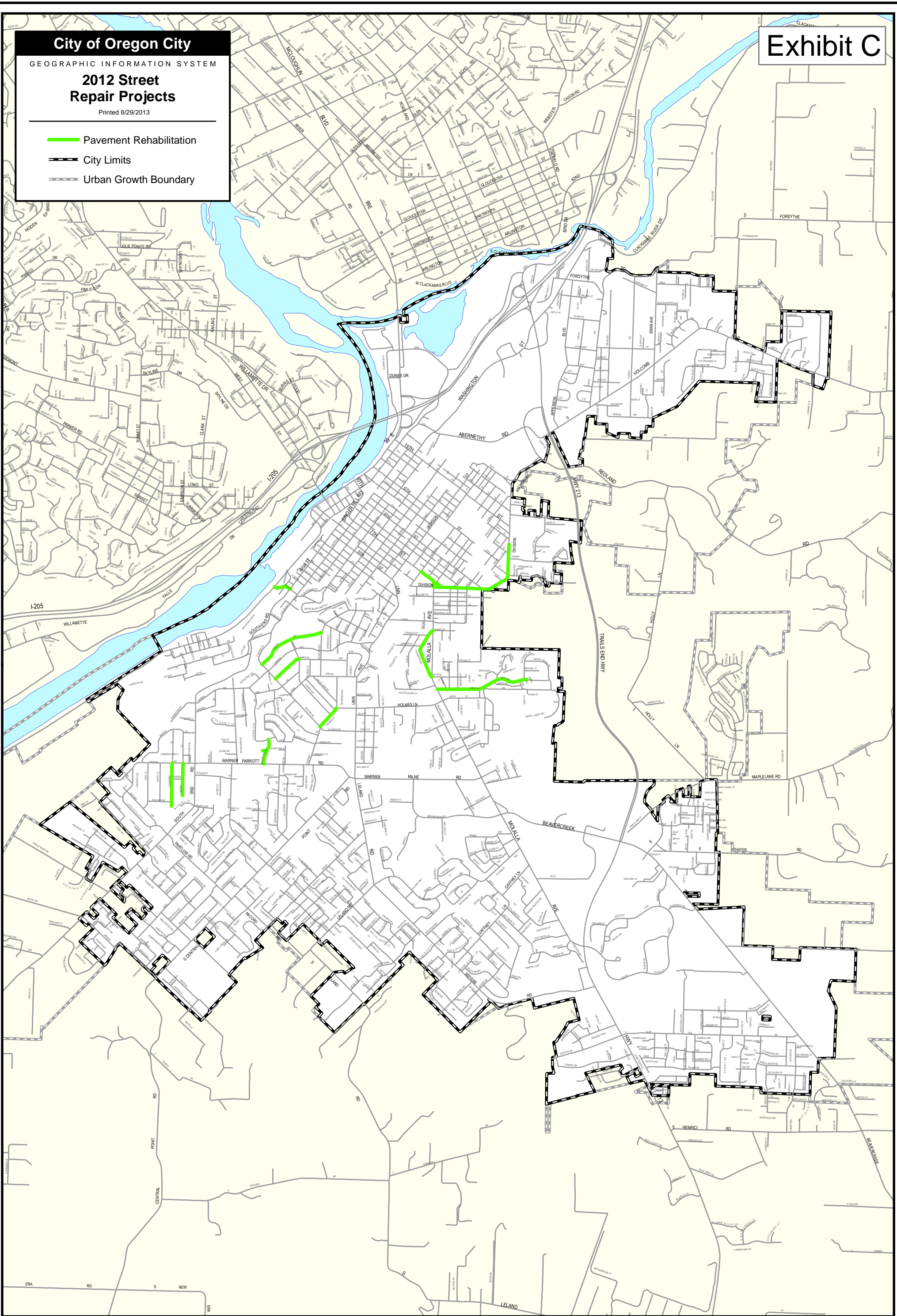
GEOGRAPHIC INFORMATION SYSTEM

## 2012 Street Repair Projects

Printed 8/29/2013

-  Pavement Rehabilitation
-  City Limits
-  Urban Growth Boundary

## Exhibit C



The City of Oregon City makes no representations, express or implied, as to the accuracy, completeness and timeliness of the information displayed. This map is not suitable for legal, engineering, or surveying purposes. Notification of any errors is appreciated.



0 0.25 0.5 1 Miles

0 1,000 2,000 4,000 6,000 Feet

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# CITY OF OREGON CITY, OREGON 2012 PAVEMENT IMPROVEMENTS PROJECT NO. CI 12-001

VOLUME 2 OF 2

JUNE 2012

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- 3 G-3 GENERAL NOTES, SIGNING AND STRIPING NOTES, EROSION CONTROL NOTES, PAVING NOTES AND TRAFFIC CONTROL NOTES
- 4 G-4 SHEET LAYOUT MAP

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- 6 C-2 PLAN MAP AND NOTES - 7TH STREET
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- 16 C-12 PLAN MAP AND NOTES - BARCLAY HILLS DRIVE
- 17 C-13 PLAN MAP AND NOTES - MOLALLA AVENUE
- 18 C-14 PLAN MAP, PROFILE AND NOTES - MOLALLA AVENUE
- 19 C-15 PLAN MAP AND NOTES - MOLALLA AVENUE
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- 24 C-20 PLAN MAP AND NOTES - JOSEPH STREET
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- 32 D-6 7TH AVENUE AND HARRISON STREET PLAN AND PROFILE
- 33 D-7 BARCLAY HILLS DRIVE AT MOLALLA AVENUE SIDEWALK RECONSTRUCTION DETAIL
- 34 D-8 BARCLAY HILLS DRIVE RECONSTRUCTION DETAIL

### STRIPING DETAILS

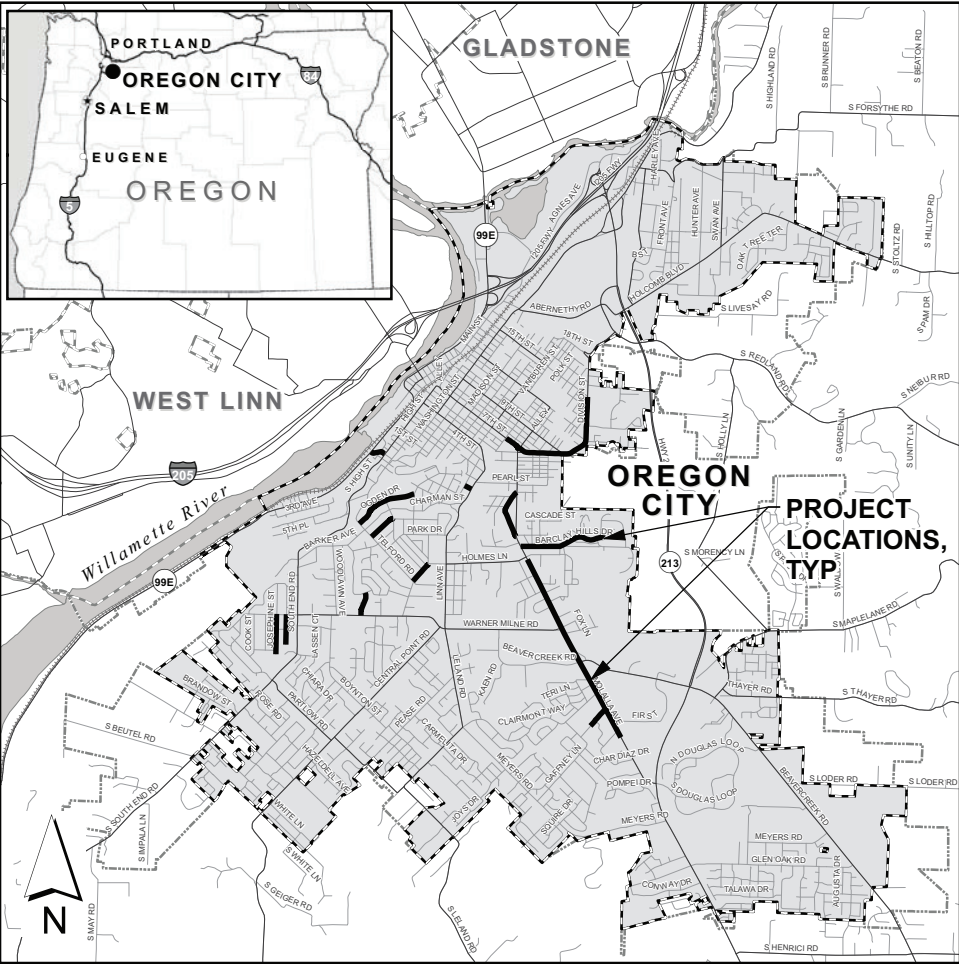
- 35 S-1 PAVEMENT MARKING LEGEND

### STANDARD DRAWINGS LIST (INCLUDED IN SUPPLEMENTARY INFORMATION)

- OREGON CITY STANDARD DRAWINGS:
- 505 STANDARD COMMERCIAL DRIVEWAY
  - 508 SIDEWALK DETAIL
  - 509 SIDEWALK RAMP DETAILS AND REPLACEMENT OPTIONS
  - 510 STANDARD CURB
  - 511 MONOLITHIC CURB AND GUTTER
  - 514 MANHOLE ADJUSTMENT DETAIL
  - 520 CENTERLINE SURVEY MONUMENTS
  - 523 TYPICAL SIGN ASSEMBLY AND MOUNTING HARDWARE
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  - MA06 MOLALLA AVENUE TYPICAL CURB RAMP DETAIL
  - MA07 CONCRETE UNIT PAYER DETAIL
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- ODOT STANDARD DRAWINGS:
- RD300 TRENCH BACKFILL, BEDDING, PIPE ZONE, AND MULTIPLE INSTALLATIONS
  - RD302 STREET CUT
  - RD336 STANDARD STORM SEWER MANHOLE
  - RD342 SHALLOW MANHOLES
  - RD344 STANDARD MANHOLE BASE SECTION
  - RD356 MANHOLE COVERS AND FRAMES
  - RD376 MISCELLANEOUS DRAINAGE STRUCTURES SIPHON BOX, INLET CAP AND INLET ADJUSTMENT
  - RD755 SIDEWALK RAMP DETAILS
  - RD756 SIDEWALK RAMP PLACEMENT OPTIONS CURB RADII  $\leq 15'$
  - RD757 SIDEWALK RAMP PLACEMENT OPTIONS CURB RADII  $\geq 15'$
  - RD759 TRUNCATED DOME DETECTABLE WARNING SURFACE
  - RD1010 INLET PROTECTION (TYPE 1, 2 AND 3)
  - RD1015 INLET PROTECTION (TYPE 4) BIOFILTER BAGS
  - TM475 LOOP DETAILS
  - TM480 LOOP ENTRANCE DETAILS

- TRAFFIC CONTROL:
- TM800, TM810, TM820, TM821,
  - TM841, TM842, TM843, TM844,
  - TM850, TM851, TM852



LOCATION MAP  
SCALE: 1"=3,000'

### RECORD DRAWINGS

THIS DRAWING IS FOR RECORD PURPOSES ONLY, AND HAS BEEN PREPARED BASED IN PART ON INFORMATION PROVIDED BY OTHERS RELATIVE TO REPORTED CONSTRUCTED CONDITIONS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, MURRAY, SMITH & ASSOCIATES, INC. MAKES NO ASSURANCES, STATED OR IMPLIED, AS TO THE ACCURACY OF THIS DRAWING. THOSE RELYING ON THIS RECORD DRAWING FOR ANY PURPOSE ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY. CONTRACT MODIFICATION INFORMATION, FABRICATOR'S SHOP DRAWINGS AND OTHER PROJECT SUBMITTAL INFORMATION PROVIDED BY THE CONTRACTOR WHICH FURTHER CLARIFY DETAILS OF CONSTRUCTION MAY BE ON FILE. SEE ORIGINAL CONTRACT DRAWINGS FOR ENGINEER'S SEAL AND SIGNATURES.

VERSION 4.0 12-9-97

ATTENTION: OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING THE CENTER. (NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS (503) 232-1987).

EXHIBIT D

NO. DATE		REVISION		BY
1/7/13		RECORD DRAWING		BVO
DESIGNED: GNL		DRAWN: DKH		SHEET
CHECKED: GEC		APPROVED: TLB		G-1
12-9-97		1		OF 35

RECORD DRAWING  
SEE DISCLAIMER, SHEET 1.  
VERSION 4.1  
12-9-97

SCALE: VERT: NONE  
HORIZ: AS SHOWN  
NOTICE  
0 1/2 1  
IF THIS BAR DOES NOT FIT THE DRAWING IS NOT TO SCALE

CITY OF OREGON CITY, OREGON  
2012 PAVEMENT IMPROVEMENTS  
PROJECT NO. CI 12-001  
COVER SHEET, INDEX OF DRAWINGS AND LOCATION MAP

Murray, Smith & Associates, Inc.  
Engineers/Planners  
12133 Salina, Suite 200 PHONE 503-235-9010  
Portland, Oregon 97204-2919 FAX 503-235-9022  
DATE: 6/19/12  
MSA PROJECT: 12-1325-601

BID TABULATION  
City of Oregon City  
2012 Pavement Improvements Project  
Project No.: CI 12-001 (MSA Project Number 12-1325)  
Bid Opening: July 10, 2012, 2:00 PM

EXHIBIT E

				Engineer's Estimate		Eagle-Elsner, Inc.		S-2 Contractors, Inc.		Brix Paving Northwest, Inc.		Kerr Contractors Oregon, Inc.		Knife River Corporation - Northwest	
Item	Description	Units	Quantity	Unit Cost	Total Cost	Unit Cost	Total Cost	Unit Cost	Total Cost	Unit Cost	Total Cost	Unit Cost	Total Cost	Unit Cost	Total Cost
1	MOBILIZATION	LS	1	\$136,814.62	\$136,814.62	\$50,000.00	\$50,000.00	\$64,000.00	\$69,000.00	\$145,000.00	\$145,000.00	\$95,677.10	\$95,677.10	\$284,190.00	\$284,190.00
2	TEMPORARY WORK ZONE TRAFFIC CONTROL, COMPLETE FOR MOLALLA AVENUE	LS	1	\$13,000.00	\$13,000.00	\$65,000.00	\$65,000.00	\$8,500.00	\$8,500.00	\$37,600.00	\$37,600.00	\$70,830.00	\$70,830.00	\$100,000.00	\$100,000.00
3	TEMPORARY WORK ZONE TRAFFIC CONTROL, COMPLETE FOR S 2ND STREET	LS	1	\$2,000.00	\$2,000.00	\$8,500.00	\$8,500.00	\$4,000.00	\$4,000.00	\$6,400.00	\$6,400.00	\$10,775.00	\$10,775.00	\$20,000.00	\$20,000.00
4	TEMPORARY WORK ZONE TRAFFIC CONTROL, COMPLETE FOR 7TH STREET	LS	1	\$2,000.00	\$2,000.00	\$2,700.00	\$2,700.00	\$3,000.00	\$3,000.00	\$10,330.00	\$10,330.00	\$13,210.00	\$13,210.00	\$20,000.00	\$20,000.00
5	TEMPORARY WORK ZONE TRAFFIC CONTROL, COMPLETE FOR DIVISION STREET	LS	1	\$4,000.00	\$4,000.00	\$17,500.00	\$17,500.00	\$4,000.00	\$4,000.00	\$9,055.00	\$9,055.00	\$16,685.00	\$16,685.00	\$30,000.00	\$30,000.00
6	TEMPORARY WORK ZONE TRAFFIC CONTROL, COMPLETE FOR ALL OTHER STREETS	LS	1	\$19,000.00	\$19,000.00	\$34,000.00	\$34,000.00	\$25,000.00	\$25,000.00	\$16,685.00	\$16,685.00	\$82,460.00	\$82,460.00	\$100,000.00	\$100,000.00
7	EROSION CONTROL	LS	1	\$5,000.00	\$5,000.00	\$6,800.00	\$6,800.00	\$2,500.00	\$2,500.00	\$2,500.00	\$2,500.00	\$10,780.00	\$10,780.00	\$9,500.00	\$9,500.00
8	POLLUTION CONTROL PLAN	LS	1	\$1,000.00	\$1,000.00	\$400.00	\$400.00	\$2,500.00	\$2,500.00	\$500.00	\$500.00	\$620.00	\$620.00	\$1,000.00	\$1,000.00
9	CONSTRUCTION SURVEY WORK	LS	1	\$3,000.00	\$3,000.00	\$23,000.00	\$23,000.00	\$25,000.00	\$25,000.00	\$25,750.00	\$25,750.00	\$22,330.00	\$22,330.00	\$10,000.00	\$10,000.00
10	ASPHALT PAVEMENT SAW CUTTING	FT	6,884	\$0.80	\$5,507.20	\$1.60	\$11,014.40	\$1.50	\$10,326.00	\$0.10	\$688.40	\$1.35	\$9,293.40	\$1.25	\$8,605.00
11	CLEARING AND GRUBBING	LS	1	\$1,000.00	\$1,000.00	\$400.00	\$400.00	\$4,000.00	\$4,000.00	\$2,500.00	\$2,500.00	\$4,260.00	\$4,260.00	\$11,000.00	\$11,000.00
12	GENERAL EXCAVATION	CY	984	\$15.00	\$14,760.00	\$33.00	\$32,472.00	\$25.00	\$24,600.00	\$26.60	\$26,174.40	\$30.00	\$29,520.00	\$28.00	\$27,552.00
13	12 INCH SUBGRADE STABILIZATION	SQYD	778	\$12.00	\$9,336.00	\$46.00	\$35,788.00	\$45.00	\$35,010.00	\$21.22	\$16,509.16	\$19.00	\$14,782.00	\$25.00	\$19,450.00
14	TREATED SUBGRADE, 12 INCH THICK	SQYD	8,319	\$1.50	\$12,478.50	\$3.40	\$28,284.60	\$5.00	\$41,595.00	\$2.70	\$22,461.30	\$6.75	\$56,153.25	\$2.60	\$21,629.40
15	PORTLAND CEMENT	TON	211	\$105.00	\$22,155.00	\$105.00	\$22,155.00	\$150.00	\$31,650.00	\$117.00	\$24,687.00	\$148.00	\$31,228.00	\$110.00	\$23,210.00
16	SUBGRADE GEOTEXTILE	SQYD	1,817	\$1.00	\$1,817.00	\$1.07	\$1,944.19	\$3.00	\$5,451.00	\$1.72	\$3,125.24	\$1.00	\$1,817.00	\$1.20	\$2,180.40
17	CIPP LINER, 15 INCH	LF	620	\$75.00	\$46,500.00	\$72.00	\$44,640.00	\$75.00	\$46,500.00	\$72.85	\$45,167.00	\$67.85	\$42,067.00	\$70.00	\$43,400.00
18	SAG REPAIRS	FT	15	\$100.00	\$1,500.00	\$550.00	\$8,250.00	\$100.00	\$1,500.00	\$375.00	\$5,625.00	\$370.00	\$5,550.00	\$400.00	\$6,000.00
19	SERVICE LINE RECONNECTION	EA	9	\$100.00	\$900.00	\$2,300.00	\$20,700.00	\$2,000.00	\$18,000.00	\$2,250.00	\$20,250.00	\$1,800.00	\$16,200.00	\$2,000.00	\$18,000.00
20	PIPE LINING VIDEO INSPECTION	LF	1240	\$3.00	\$3,720.00	\$3.00	\$3,720.00	\$2.75	\$3,410.00	\$2.90	\$3,596.00	\$2.50	\$3,100.00	\$2.60	\$3,224.00
21	LATERAL LAUNCH VIDEO INSPECTION	EA	24	\$25.00	\$600.00	\$180.00	\$4,320.00	\$175.00	\$4,200.00	\$180.00	\$4,320.00	\$160.00	\$3,840.00	\$165.00	\$3,960.00
22	CIPP TOP HAT SERVICE LATERAL LINING	EA	9	\$1,500.00	\$13,500.00	\$5,200.00	\$46,800.00	\$5,200.00	\$46,800.00	\$5,627.00	\$50,643.00	\$4,990.00	\$44,910.00	\$5,000.00	\$45,000.00
23	12 INCH STORM SEWER PIPE, 5 FOOT DEPTH	LF	407	\$50.00	\$20,350.00	\$115.00	\$46,805.00	\$50.00	\$20,350.00	\$86.70	\$35,286.90	\$60.00	\$24,420.00	\$95.00	\$38,665.00
24	12 INCH STORM SEWER PIPE, 10 FOOT DEPTH	LF	80	\$65.00	\$5,200.00	\$220.00	\$17,600.00	\$60.00	\$4,800.00	\$133.00	\$10,640.00	\$108.00	\$8,640.00	\$300.00	\$24,000.00
25	VIDEO INSPECTION	LF	487	\$1.00	\$487.00	\$3.00	\$1,461.00	\$4.00	\$1,948.00	\$2.90	\$1,412.30	\$1.25	\$608.75	\$2.15	\$1,047.05
26	CONCRETE STORM SEWER MANHOLES	EA	1	\$3,000.00	\$3,000.00	\$9,000.00	\$9,000.00	\$3,000.00	\$3,000.00	\$5,150.00	\$5,150.00	\$3,735.00	\$3,735.00	\$7,500.00	\$7,500.00
27	CONCRETE INLETS, TYPE G-1	EA	1	\$1,500.00	\$1,500.00	\$2,000.00	\$2,000.00	\$1,500.00	\$1,500.00	\$1,520.00	\$1,520.00	\$1,200.00	\$1,200.00	\$1,400.00	\$1,400.00
28	MINOR ADJUSTMENT OF MANHOLES	EA	3	\$300.00	\$900.00	\$1,500.00	\$4,500.00	\$225.00	\$675.00	\$1,210.00	\$3,630.00	\$920.00	\$2,760.00	\$1,700.00	\$5,100.00
29	ADD OR REPLACE MANHOLE PAVING RINGS	EA	46	\$50.00	\$2,300.00	\$150.00	\$6,900.00	\$275.00	\$12,650.00	\$108.00	\$4,968.00	\$180.00	\$8,280.00	\$120.00	\$5,520.00
30	ADJUSTING INLETS	EA	2	\$500.00	\$1,000.00	\$1,000.00	\$2,000.00	\$225.00	\$450.00	\$2,110.00	\$4,220.00	\$800.00	\$1,600.00	\$1,200.00	\$2,400.00
31	REPLACING DISTURBED MONUMENT BOXES	EA	19	\$100.00	\$1,900.00	\$130.00	\$2,470.00	\$250.00	\$4,750.00	\$686.00	\$13,034.00	\$425.00	\$8,075.00	\$625.00	\$11,875.00
32	ADJUSTING WATER OR GAS VALVE BOXES	EA	39	\$100.00	\$3,900.00	\$80.00	\$3,120.00	\$60.00	\$2,340.00	\$52.00	\$2,028.00	\$160.00	\$6,240.00	\$55.00	\$2,145.00
33	REPLACING WATER OR GAS VALVE BOXES	EA	12	\$200.00	\$2,400.00	\$120.00	\$1,440.00	\$250.00	\$3,000.00	\$462.00	\$5,544.00	\$310.00	\$3,720.00	\$425.00	\$5,100.00
34	TRENCH RESURFACING	SY	282	\$80.00	\$22,560.00	\$50.00	\$14,100.00	\$45.00	\$12,690.00	\$88.00	\$24,816.00	\$62.00	\$17,484.00	\$35.00	\$9,870.00
35	COLD PLANE PAVEMENT REMOVAL, 0 - 1 INCHES DEEP	SY	80	\$3.00	\$240.00	\$17.00	\$1,360.00	\$10.00	\$800.00	\$6.00	\$480.00	\$61.00	\$4,880.00	\$12.00	\$960.00
36	COLD PLANE PAVEMENT REMOVAL, 2 INCHES DEEP	SY	56941	\$0.90	\$51,246.90	\$2.20	\$125,270.20	\$2.50	\$142,352.50	\$2.85	\$162,281.85	\$3.00	\$170,823.00	\$2.60	\$148,046.60
37	COLD PLANE PAVEMENT REMOVAL, 0 - 2 INCHES DEEP	SY	8404	\$3.00	\$25,212.00	\$5.80	\$48,743.20	\$6.50	\$54,626.00	\$8.97	\$75,383.88	\$12.00	\$100,848.00	\$7.50	\$63,030.00
38	COLD PLANE PAVEMENT REMOVAL, 4 INCHES DEEP	SY	8319	\$1.20	\$9,982.80	\$4.00	\$33,276.00	\$3.50	\$29,116.50	\$3.92	\$32,610.48	\$4.50	\$37,435.50	\$4.75	\$39,515.25
39	3/4 INCH - 0 AGGREGATE BASE	CY	419	\$25.00	\$10,475.00	\$56.00	\$23,464.00	\$50.00	\$20,950.00	\$35.47	\$14,861.93	\$67.50	\$28,282.50	\$45.00	\$18,855.00
40	1-1/2 INCH - 0 AGGREGATE BASE	CY	169	\$25.00	\$4,225.00	\$61.00	\$10,309.00	\$50.00	\$8,450.00	\$32.04	\$5,414.76	\$58.50	\$9,886.50	\$55.00	\$9,295.00
41	LEVEL 2, 1/2 INCH DENSE MHMAC, PG 64-22	TON	6773	\$72.00	\$487,656.00	\$71.50	\$484,269.50	\$77.00	\$521,521.00	\$77.29	\$523,485.17	\$76.40	\$517,457.20	\$75.00	\$507,975.00
42	LEVEL 3, 1/2 INCH DENSE MHMAC, PG 70-22	TON	5958	\$72.00	\$428,976.00	\$70.00	\$417,060.00	\$77.00	\$458,766.00	\$82.07	\$488,973.06	\$76.40	\$455,191.20	\$75.00	\$446,850.00
43	EXTRA FOR ASPHALT BERMS	LF	350	\$10.00	\$3,500.00	\$9.00	\$3,150.00	\$4.00	\$1,400.00	\$6.00	\$2,100.00	\$8.00	\$2,800.00	\$8.50	\$2,975.00
44	EXTRA FOR ASPHALT SPEED HUMPS	EA	2	\$2,000.00	\$4,000.00	\$1,000.00	\$2,000.00	\$2,500.00	\$5,000.00	\$1,156.00	\$2,312.00	\$2,630.00	\$5,260.00	\$1,700.00	\$3,400.00
45	CONCRETE CURBS, STANDARD CURB	LF	253	\$12.00	\$3,036.00	\$42.00	\$10,626.00	\$26.00	\$6,578.00	\$30.00	\$7,590.00	\$21.00	\$5,313.00	\$22.00	\$5,566.00
46	CONCRETE CURBS, GUTTER	LF	176	\$14.00	\$2,464.00	\$44.00	\$7,744.00	\$30.00	\$5,280.00	\$32.50	\$5,720.00	\$23.00	\$4,048.00	\$24.00	\$4,224.00
47	CONCRETE CURBS, CURB AND GUTTER	LF	173	\$15.00	\$2,595.00	\$43.00	\$7,439.00	\$30.00	\$5,190.00	\$32.50	\$5,622.50	\$23.00	\$3,979.00	\$24.00	\$4,152.00

BID TABULATION  
City of Oregon City  
2012 Pavement Improvements Project  
Project No.: CI 12-001 (MSA Project Number 12-1325)  
Bid Opening: July 10, 2012, 2:00 PM

				Engineer's Estimate		Eagle-Elsner, Inc.		S-2 Contractors, Inc.		Brix Paving Northwest, Inc.		Kerr Contractors Oregon, Inc.		Knife River Corporation - Northwest	
Item	Description	Units	Quantity	Unit Cost	Total Cost	Unit Cost	Total Cost	Unit Cost	Total Cost	Unit Cost	Total Cost	Unit Cost	Total Cost	Unit Cost	Total Cost
48	CONCRETE DRIVEWAYS, REINFORCED	SF	276	\$7.00	\$1,932.00	\$13.00	\$3,588.00	\$10.00	\$2,760.00	\$11.80	\$3,256.80	\$6.25	\$1,725.00	\$6.50	\$1,794.00
49	CONCRETE WALKS	SF	1274	\$4.50	\$5,733.00	\$8.50	\$10,829.00	\$10.00	\$12,740.00	\$11.00	\$14,014.00	\$6.50	\$8,281.00	\$10.50	\$13,377.00
50	TRUNCATED DOMES	EA	4	\$200.00	\$800.00	\$230.00	\$920.00	\$300.00	\$1,200.00	\$256.00	\$1,024.00	\$222.00	\$888.00	\$235.00	\$940.00
51	UNIT PAVERS	SF	144	\$30.00	\$4,320.00	\$13.00	\$1,872.00	\$20.00	\$2,880.00	\$21.00	\$3,024.00	\$12.00	\$1,728.00	\$16.00	\$2,304.00
52	REINSTALL EXISTING UNIT PAVERS	SF	154	\$20.00	\$3,080.00	\$10.00	\$1,540.00	\$15.00	\$2,310.00	\$16.00	\$2,464.00	\$12.00	\$1,848.00	\$9.00	\$1,386.00
53	PAVEMENT BAR REMOVAL	SQFT	116	\$1.80	\$208.80	\$4.00	\$464.00	\$1.50	\$174.00	\$4.35	\$504.60	\$3.75	\$435.00	\$4.00	\$464.00
54	BI-DIRECTIONAL YELLOW TYPE 1AR MARKERS	EA	300	\$4.00	\$1,200.00	\$5.25	\$1,575.00	\$5.00	\$1,500.00	\$5.72	\$1,716.00	\$5.00	\$1,500.00	\$5.10	\$1,530.00
55	BI-DIRECTIONAL BLUE TYPE 1AR MARKERS	EA	43	\$5.00	\$215.00	\$12.60	\$541.80	\$5.00	\$215.00	\$14.00	\$602.00	\$12.00	\$516.00	\$12.20	\$524.60
56	LONGITUDINAL PAVEMENT MARKINGS - PAINT	LF	45119	\$0.20	\$9,023.80	\$0.16	\$7,219.04	\$0.25	\$11,279.75	\$0.17	\$7,670.23	\$0.15	\$6,767.85	\$0.16	\$7,219.04
57	PAVEMENT MARKING TAPE, WET WEATHER PATTERN, HOT-LAID	LF	3900	\$1.10	\$4,290.00	\$3.00	\$11,700.00	\$3.00	\$11,700.00	\$3.20	\$12,480.00	\$2.80	\$10,920.00	\$2.90	\$11,310.00
58	PAVEMENT LEGEND, TYPE B: ARROWS	EA	58	\$250.00	\$14,500.00	\$240.00	\$13,920.00	\$250.00	\$14,500.00	\$268.00	\$15,544.00	\$235.00	\$13,630.00	\$240.00	\$13,920.00
59	PAVEMENT LEGEND, TYPE B: BIKE LANE STENCIL	EA	4	\$250.00	\$1,000.00	\$250.00	\$1,000.00	\$300.00	\$1,200.00	\$275.00	\$1,100.00	\$240.00	\$960.00	\$250.00	\$1,000.00
60	PAVEMENT LEGEND, TYPE B: SPEED HUMP	EA	4	\$500.00	\$2,000.00	\$280.00	\$1,120.00	\$1,000.00	\$4,000.00	\$318.00	\$1,272.00	\$275.00	\$1,100.00	\$280.00	\$1,120.00
61	PAVEMENT BAR, TYPE B	SQFT	3435	\$8.50	\$29,197.50	\$8.20	\$28,167.00	\$12.00	\$41,220.00	\$8.98	\$30,846.30	\$7.85	\$26,964.75	\$8.00	\$27,480.00
62	REMOVE AND REINSTALL EXISTING SIGNS	EA	3	\$500.00	\$1,500.00	\$250.00	\$750.00	\$300.00	\$900.00	\$225.00	\$675.00	\$230.00	\$690.00	\$115.00	\$345.00
63	PIPE SIGN SUPPORTS	LS	1	\$500.00	\$500.00	\$530.00	\$530.00	\$1,000.00	\$1,000.00	\$267.00	\$267.00	\$785.00	\$785.00	\$260.00	\$260.00
64	TYPE "W4" SIGNS IN PLACE	SF	2	\$20.00	\$40.00	\$250.00	\$500.00	\$75.00	\$150.00	\$40.00	\$80.00	\$28.00	\$56.00	\$15.00	\$30.00
65	POLE FOUNDATIONS	LS	1	\$1,000.00	\$1,000.00	\$3,400.00	\$3,400.00	\$3,500.00	\$3,500.00	\$3,745.00	\$3,745.00	\$2,000.00	\$2,000.00	\$2,100.00	\$2,100.00
66	REFURBISHING AND REINSTALLING EXISTING ILLUMINATION SYSTEMS	LS	1	\$2,000.00	\$2,000.00	\$1,950.00	\$1,950.00	\$2,200.00	\$2,200.00	\$2,128.00	\$2,128.00	\$5,975.00	\$5,975.00	\$6,300.00	\$6,300.00
67	TRAFFIC SIGNAL LOOP DETECTOR REPLACEMENTS AT S 2ND AND 99E	LS	1	\$3,500.00	\$3,500.00	\$2,750.00	\$2,750.00	\$3,000.00	\$3,000.00	\$3,035.00	\$3,035.00	\$3,550.00	\$3,550.00	\$3,750.00	\$3,750.00
68	TRAFFIC SIGNAL LOOP DETECTOR REPLACEMENTS AT WARNER MILNE AND MOLALLA	LS	1	\$15,000.00	\$15,000.00	\$9,400.00	\$9,400.00	\$10,000.00	\$10,000.00	\$10,400.00	\$10,400.00	\$13,250.00	\$13,250.00	\$13,500.00	\$13,500.00
69	TRAFFIC SIGNAL LOOP DETECTOR REPLACEMENTS AT COLTON AND MOLALLA	LS	1	\$7,000.00	\$7,000.00	\$5,500.00	\$5,500.00	\$6,500.00	\$6,500.00	\$6,070.00	\$6,070.00	\$7,100.00	\$7,100.00	\$7,250.00	\$7,250.00
70	TRAFFIC SIGNAL LOOP DETECTOR REPLACEMENTS AT BEAVERCREEK AND MOLALLA	LS	1	\$4,500.00	\$4,500.00	\$3,500.00	\$3,500.00	\$4,000.00	\$4,000.00	\$3,900.00	\$3,900.00	\$4,850.00	\$4,850.00	\$5,000.00	\$5,000.00
71	TRAFFIC SIGNAL LOOP DETECTOR REPLACEMENTS AT CLAIRMONT AND MOLALLA	LS	1	\$8,400.00	\$8,400.00	\$5,500.00	\$5,500.00	\$6,000.00	\$6,000.00	\$6,070.00	\$6,070.00	\$8,875.00	\$8,875.00	\$9,500.00	\$9,500.00
72	TRAFFIC SIGNAL LOOP DETECTOR REPLACEMENTS AT GAFFNEY AND MOLALLA	LS	1	\$10,200.00	\$10,200.00	\$6,300.00	\$6,300.00	\$7,000.00	\$7,000.00	\$6,935.00	\$6,935.00	\$10,800.00	\$10,800.00	\$11,500.00	\$11,500.00
	TOTAL														
					\$1,549,834.12		\$1,879,030.93		\$1,896,653.75		\$2,057,474.26		\$2,154,249.00		\$2,321,270.34



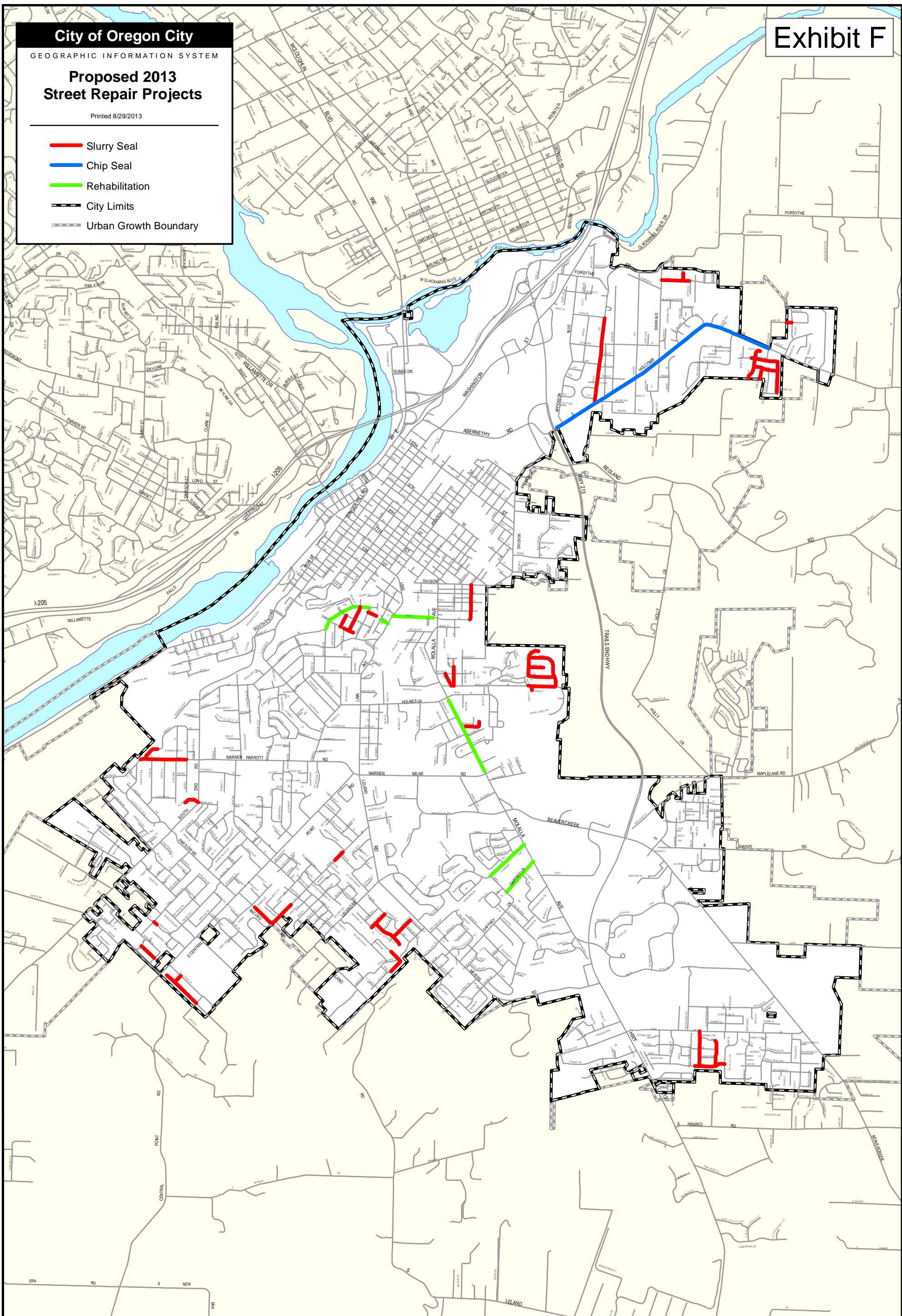
City of Oregon City

GEOGRAPHIC INFORMATION SYSTEM

Proposed 2013  
Street Repair Projects

Printed 8/29/2013

- Slurry Seal
- Chip Seal
- Rehabilitation
- City Limits
- Urban Growth Boundary



The City of Oregon City makes no representations, express or implied, as to the accuracy, completeness and timeliness of the information displayed. This map is not suitable for legal, engineering, or surveying purposes. Notification of any errors is appreciated.



0 0.25 0.5 1 Miles

0 1,000 2,000 4,000 6,000 Feet

Please recycle with colored office grade paper.

City of Oregon City  
P.O. Box 3040  
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503-657-6629 fax  
[www.oregoncity.org](http://www.oregoncity.org)



Plot date: 8/29/2013  
Map: Exhibit F - 2013 Proposed Projects Map - 20130829 - 11x17P.mxd  
Plot: Exhibit F - 2013 Proposed Projects Map - 20130829 - 11x17P\_20130829.pdf



## **APPENDIX C**

### **Planning Process Meeting Minutes**

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Murray, Smith & Associates, Inc.  
Engineers/Planners

121 S.W. Salmon, Suite 900 ■ Portland, OR 97204 ■ PHONE: 503-225-9010 ■ FAX: 503-225-9022

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**PROJECT:** City of Oregon City – Five Year Pavement Maintenance Plan Update

**MEETING:** Pavement Workshop No. 1 - **Minutes**

**DATE:** Friday October 31st, 2014

**LOCATION:** Public Works Department,  
122 S Center Street  
Oregon City, Oregon 97045

**TIME:** 1:30 PM

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## 1. INTRODUCTIONS

## 2. PURPOSE OF MEETING

- a. Review preliminary project list
- b. Seek feedback from City pavement staff

## 3. PLANNING PROCESS & UPDATED SCHEDULE

- a. Pavement Workshop No. 1 (today)
- b. Utility Workshop No. 1 (**November 19<sup>th</sup>**)
- c. Pavement Workshop No. 2 (early December)
- d. Draft Plan (late December)
- e. Final Plan (TBD)

## 4. INITIAL PROJECT SELECTION PROCESS (PHASE 1)

- a. Cost analysis and treatment selection
- b. Pavement condition
- c. Funding
  - i) 7 year projected funding
  - ii) Unconstrained
  - iii) **Confirmed funding assumptions:**
    - (1) **The City confirmed that a \$1.5M annual budget is realistic (with ~\$200k for design, leaving \$1.3M for construction)**

- (2) Initially, MSA asked Capital Asset Management to use \$1.3M annually for use in their StreetSaver program. This number was split \$200k/\$1,100K for preventative maintenance and rehabilitation respectively. MSA to ask Capital Asset Management to not force a split of the funding at a certain dollar amount in order to have StreetSaver determine the correct treatment type for each street. **Action Item: Sinclair Burr**
  - iv) Share results of projected PCI as lead in for FCS work.
    - (1) MSA to provide City with all documents generated by Capital Asset Management for their own use. **Action Item: Sinclair Burr**
- d. Treatment types
  - i) Preventative
    - (1) MSA to update decision tree to include chip sealing and micro surfacing. **Action Item: Sinclair Burr**
    - (2) City to inform MSA of typical use of chip seal and micro surfacing. **Action Item: Matt Powlison**
  - ii) Rehabilitation
- e. Thoughts on initial results:
  - i) Mostly arterials and collectors
  - ii) Almost all grind/inlay and overlays
  - iii) Many streets not yet done from last list don't appear, likely due to lower cost effectiveness:
    - (1) 9<sup>th</sup>
    - (2) 12<sup>th</sup>
    - (3) 6<sup>th</sup>
    - (4) Holmes
    - (5) Lots of residential streets
  - iv) Center Street (5<sup>th</sup>-7<sup>th</sup>) - This Street should be completed next year (2015) to make use of the money already spent on design. **Action Item: Sinclair Burr**

## 5. PROJECT LIST REFINEMENT METHODOLOGY (PHASE 2)

- a. Define additional criteria beyond StreetSaver – See below
- b. Develop a scoring system to apply criteria
- c. Apply system and re-rank projects
- d. Establish annual project lists based on available funding

## 6. ADDITIONAL CRITERIA TO APPLY

- a. Past work not yet accounted for
- b. Future projects
- c. Street classification
- d. Field walkthrough adjustment
  - i) Adjust treatment type
  - ii) Adjust year

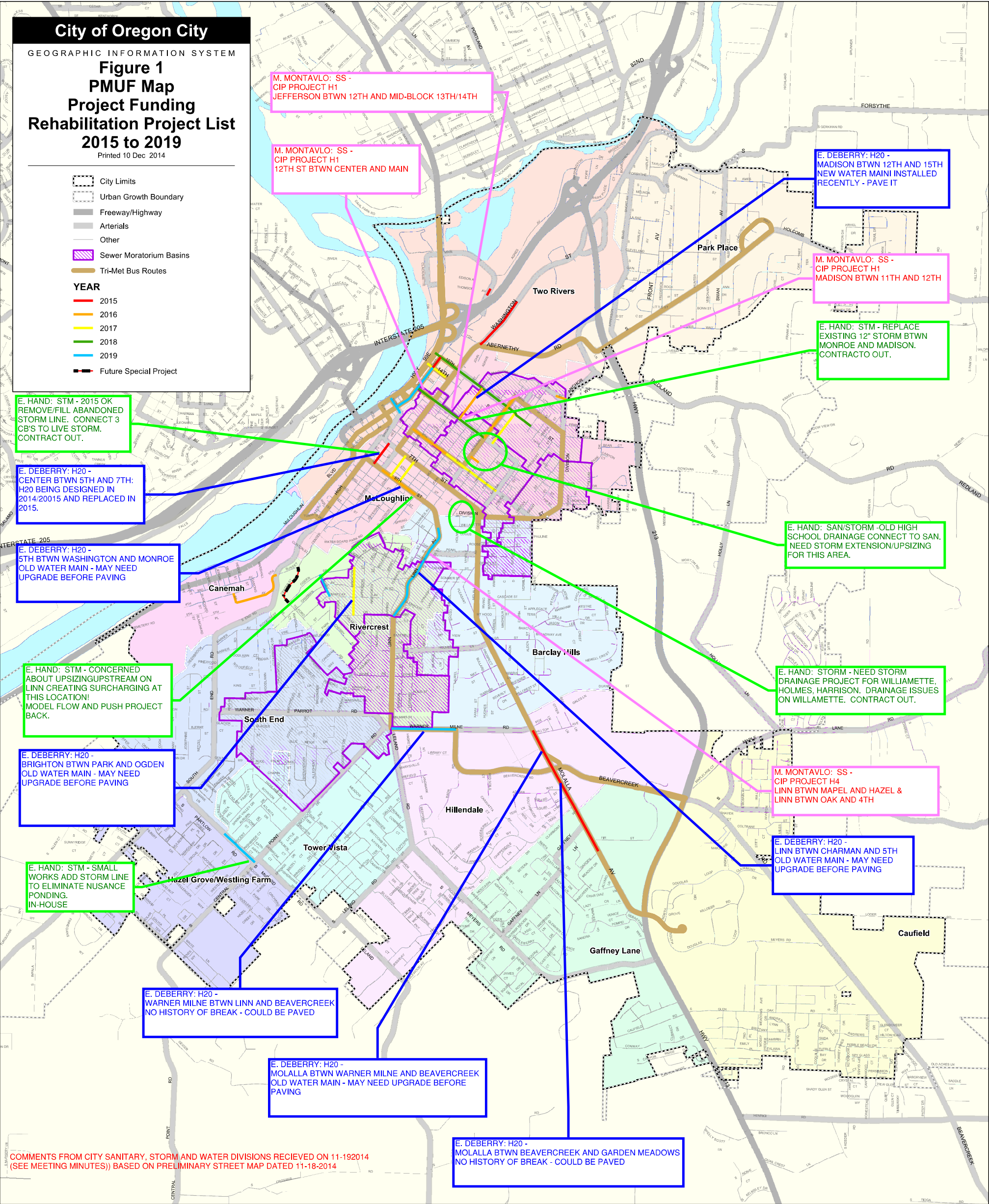


- e. Non-City roads – See below for discussion on streets owned by City Parks
- f. Bus routes
- g. Institutional knowledge
  - i) Per City maintenance personnel, the following streets should not be considered for maintenance:
    - (1) All streets owned by the City Parks division.
    - (2) Streets with recent preventative maintenance work – City to provide Capital Asset Management with a list of the preventative maintenance work completed in the last 3 years to ensure PCIs are correct. The following streets were specifically discussed:
      - (a) Holcomb
      - (b) South End
      - (c) Beaver Creek
      - (d) Pease
      - (e) Timms Way
      - (f) Pine Creek Lane
      - (g) Falcon
      - (h) 10<sup>th</sup> (north of Washington)
      - (i) Glen Oak (Molalla to Beaver Creek)
  - ii) Per City maintenance personnel, the following streets should be included with the 2018 project to coordinate with the Library’s remodeling project.
    - (1) John Adams (5<sup>th</sup> – 7<sup>th</sup>)
    - (2) Jefferson (6<sup>th</sup> – 7<sup>th</sup>)
  - iii) Per City maintenance personnel, the following streets should be included in future maintenance projects, but were not shown on the preliminary list provided by Capital Asset Management:
    - (1) John Q. Adams (5<sup>th</sup> – 7<sup>th</sup>)
    - (2) 9<sup>th</sup> (Washington – Taylor)
  - iv) Other locations where extra work should be considered include:
    - (1) Narain Ct.
    - (2) Madison (12<sup>th</sup> to 15<sup>th</sup>)
    - (3) 12<sup>th</sup>
    - (4) 15<sup>th</sup>
- h. Utility project coordination (Phase 3)
  - i) City maintenance personnel identified Center Street from 7<sup>th</sup> to 10<sup>th</sup> as being a location with utility needs. This street does not show up on the list.
  - ii) MSA to coordinate with the Sanitary Sewer Master Plan moratorium to minimize costs with overlapping projects. **Action Item: MSA**
- i. Other possibilities:
  - i) Unacceptably low street condition
  - ii) Address polarization that occurs with StreetSaver’s algorithm
  - iii) Truck routes (TSP) – The City observes most truck traffic using the already identified bus routes, and therefore this criteria will not be necessary.
  - iv) Delivery routes

- v) Safety – The City did not identify any streets whose condition presents a safety issue.
- vi) Neighborhood equity – Given the other criteria being used to identify where work will be completed, the City does not anticipate needing to further justify selected streets.
- vii) Grouping adjacent projects – The City would like streets to be geographically grouped to reduce construction costs relating to mobilization. **Action Item: Sinclair Burr**
- viii) No cul-de-sacs – City confirmed that all cul-de-sacs should be excluded from the rehabilitation lists due to the extremely low ROI they provide. **Action Item: Sinclair Burr**
- ix) Due to the uncertainty with boulevard projects, the city confirmed that they should not be a criteria for this project

## 7. NEXT STEPS

- a. Field reconnaissance
  - i) To be completed in mid-November
- b. Refine scoring system
- c. Re-rank projects
- d. Schedule utility workshop
  - i) November 19<sup>th</sup>, 2014





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**PROJECT:** City of Oregon City – Five Year Pavement Maintenance Plan Update

**MEETING:** Utility Workshop - **MINUTES**

**DATE:** Wednesday November 19th, 2014

**LOCATION:** Public Works Department,  
122 S Center Street  
Oregon City, Oregon 97045

**TIME:** 1:00 PM

**ATTENDEES:** Martin Montalvo, Kevin Hanks, Matt Powlison, Eric Hand, Eli Deberry (COOC), Gabe Crop, Andrew Giesy (MSA)

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1. INTRODUCTIONS
2. BACKGROUND
3. GOAL OF MEETING - Identify public utility improvement needs/projects (water, waste water and storm water) for the next five years relative to planned rehabilitation pavement maintenance projects and coordinate work where possible.
4. PAVEMENT LIST REVIEW (20 minutes)
  - a. Overview of list development
  - b. Confirm updates from Pavement Workshop No. 1
  - c. Comments from City pavement staff prior to discussing utilities
    - i) Team discussed the ADA requirements for preventative maintenance treatments per the USDOJ-USDOT/FHA Joint Technical Assistance Memo (2013). The team noted that microsurfacing requires ADA curb ramp retrofits, while chip seals do not. MSA will email the DOJ/FHA memo to the City for reference (**ACTION ITEM: GABE**).
    - ii) The City recommended that MSA double-check that the current decision-tree and costs for microsurfacing includes ADA ramps (**ACTION ITEM: ANDREW**).
    - iii) The City noted that Hillsboro has bid tabs from this past year's microsurfacing project. The City will send this information to MSA for its



- use (**ACTION ITEM: MARTIN**). MSA to verify if decision tree cost estimate for microsurfacing is comparable (**ACTION ITEM: GABE**).
- iv) The City noted that there is an article from a recent roadway magazine that has been passed around the City and discusses preventative maintenance triggers for ADA compliance. The City will forward this article to MSA for the file (**ACTION ITEM: JOHN**).
  - v) The City noted that the current 6-year project rehab map/list shows Beaver Creek from Molalla Ave. to the County offices (Library Ct.) as a mill/fill in 2015. The City recommended that the project be moved from the rehab list and onto the preventative maintenance (PM) list, as PM work was recently completed in 2012. (**ACTION ITEM: ANDREW**). Additionally, the east end project limits should be adjusted to match the existing cold joint just south/east of Library Ct. (**ACTION ITEM: ANDREW**).
  - vi) The City noted that the current 6-year project rehab map/list shows 10<sup>th</sup> Street from the bottom of Singer Hill (east SE of railroad tracks to Main Street) in 2015, and from Main Street to Hwy. 99 in 2017, and Main Street between 10<sup>th</sup> and 11<sup>th</sup> in 2018. The City recommends that the 10<sup>th</sup> Street work be combined into one project, and remove the Main Street work as it does not visually appear ready for rehab. Additionally, the City believes it can perform PM work on 10<sup>th</sup> to obtain a few more cycles out of the street. MSA to move the 10<sup>th</sup> and Main work from the rehab list to the PM list (**ACTION ITEM: ANDREW**).
  - vii) The City noted that instead of rehab work on 10<sup>th</sup> and Main Street, rehab Main Street from 14<sup>th</sup> to beyond the I-205 interchange. MSA and City Street staff will perform a visual drive-by tomorrow and confirm existing condition and need for this potential project (**ACTION ITEM: MSA/COOC**).
  - viii) The City noted that Holmes between Prospect and Molalla was on last year's paving project at 50% design, but fell off the final project list due to the City having a potential water project that would impact paving (leaking 12" steel water line and site improvements at the tank site). This project is now on the PM list because of the revisions to the Decision Tree (current PCI = 68 and a chip seal PCI of 78).
  - ix) MSA noted that additional manipulation can occur to the list if current ADT's were known, giving priority to higher volume streets. The City noted that 2011 traffic data is available using its online tool Webmaps. 2014 data was recently collected and is currently being processed. Data is scheduled to be updated in 45 days. The new data will include twelve additional traffic count sites. MSA will supplement the street classification with ADT data (**ACTION ITEM: ANDREW**).
  - x) The City noted that Washington Street between Abernethy north to the Jug Handle paving limits (near driveway to Cascade Landscape Supply) should be added to the rehab list for 2015. MSA noted that this segment is on the Unconstrained rehab list for 2015. MSA will add this segment to the 2015 Project List (**ACTION ITEM: ANDREW**).

- xi) MSA noted that the current project yearly budget is split at \$1.1M for rehab and \$200K for PM for a total budget of \$1.3M. The team agreed that the City consider moving a larger portion of funds to PM in order to treat a larger number of streets within the City. The City noted that it can get more “bang-for-the-buck” by investing in PM if possible. To accomplish this, MSA will adjust the list to limit total annual budget for rehab work to \$1.05M and increase PM to \$250k (**ACTION ITEM: ANDREW**).
- xii) The City noted that Gaffney between Meyers and McVay as shown on the map for 2019 was chip sealed this year. This project should be moved off the current list (**ACTION ITEM: ANDREW**).
- xiii) The City noted that the team should visit Lazy Creek Lane and Still Meadow Drive tomorrow and determine needs (**ACTION ITEM: ANDREW**).
- xiv) The City noted that the map should be updated to not stop short of arterial intersections (i.e. complete the entire street rehab) (**ACTION ITEM: ANDREW**).

## 5. UTILITY NEEDS REVIEW PROCESS (10 minutes)

- a. Information resources
  - i) System plans
  - ii) Institutional knowledge
  - iii) Other
- b. Utility project priorities
  - i) Programmed work (specific year known)
  - ii) Planned work (1-3 year time frame known)
  - iii) Future work (unknown time frame)
- c. Special cases
  - i) Sewer moratorium
  - ii) Development
  - iii) Other

## 6. PROJECT COORDINATION (90 minutes)

- a. **Street by street review in order of year**
- b. Options for coordination
  - i) Adjust timeline for paving and/or utility improvements
  - ii) Merge utility and paving work
  - iii) Note coordination needs for future project development

### (1) SANITARY SEWER – MARTIN MATALVO

- (a) The City reviewed the CIP cards in the Master Plan for the sanitary sewer system. City provided MSA with CIP cards for projects discussed below. The projects discussed below do not have specific project years in which they are to be constructed, they are only identified as needs. Design is likely to be 2015 and 2016 and with construction likely 2017 thru 2019 for all projects, with no known project order to be constructed. MSA should include pavement

rehab projects in these anticipated sewer construction years  
**(ACTION ITEM: ANDREW).**

- (b) Future sewer project conflicts between Sewer Replacement Project H-1 (“12<sup>th</sup> Street Sewer Replacement”) and a 2015 street rehab project on Madison between 12<sup>th</sup> and 15<sup>th</sup>, a 2017 street rehab project on 12<sup>th</sup> between Center and Madison and a 2019 street rehab project on 12<sup>th</sup> between Madison and Jackson.
  - (c) Based on the current rehab list, no conflicts are anticipated on Sewer Replacement Project H-2 and H-3 (“13<sup>th</sup> Street Sewer Replacement” near Division).
  - (d) Future sewer project conflicts between Sewer Replacement Project H-4 (“Linn Avenue Sewer Replacement”) and a 2016 street rehab project on Linn between 4<sup>th</sup> and Charman and a 2016 street rehab project on 4<sup>th</sup> between Linn and Terrace Way.
  - (e) Based on the current rehab list, no conflicts are anticipated between Sewer Replacement Project H-5 (No CIP card provided, but markup of map indicates project located on Hazelwood between Vine and Warner Parrot).
  - (f) Future sewer project conflicts between Sewer Replacement Project H-6 (“Holcomb Boulevard Sewer Replacement”) and a 2020 street rehab project on Holcomb Blvd. between Longview Way and Winston Dr.
  - (g) The City noted that the CIP cards are available in Appendix H of the Master Plan, and MSA should review the CIP cards again as the list is refined **(ACTION ITEM: ANDREW).**
  - (h) Gravity sewer line extension planned for 2020 at a minimum in the Brendon Estates area, on Gaffney Ln. between Berta and McVey. No conflict anticipated, and no conflict with any other gravity sewer improvements currently planned within the City (most are occurring on the outskirts of the City).
  - (i) Library remodel may need new service lateral but no mainline work is anticipated.
- (2) STORM DRAIN – ERIC HAND
- (a) The City cross-referenced the previous 5-year plan and the current 5-year plan and provided comments below
  - (b) Next step for the City is to review current storm video inspection reports to check for any possible point repairs that would be either performed in-house prior to construction or incorporated into the project **(ACTION ITEM: ERIC).** No work to identify right now.
  - (c) 2015 pavement rehab on 5<sup>th</sup> Street between John Adams and Monroe:
    - (i) City is concerned about the previous upsized pipes upstream on Linn are creating surcharging at Monroe. City to complete modeling and may need to push 2015 paving work out **(ACTION ITEM: ERIC).**

- (ii) This storm work, however, may be far enough down the timeline that if 5<sup>th</sup> is rehabbed next year then the storm project may not occur until 2020 and would be outside of the paving moratorium.
- (iii) City Streets indicated that we should not leave the gap on 5<sup>th</sup> between newly paved intersection of Washington and the 2015 limits on 5<sup>th</sup> at John Adams (**ACTION ITEM: ANDREW**).
- (d) 2015 pavement rehab on Center between 5<sup>th</sup> and 7<sup>th</sup>:
  - (i) As discovered last year during the pavement rehab design process, there is an existing previously abandoned storm line in Center that actually has 3-CB's connected to it upstream of where it was abandoned at 7<sup>th</sup>. Future project will need to incorporate abandonment of SD and connecting the existing CB's to the newer live SD line. Priority of street is already in the 2015 season and design is at 90% for this work by MSA (**ACTION ITEM: ANDREW**).
- (e) 2016 pavement rehab on Holmes between Division and Willamette and 2017 pavement rehab on Harrison between Molalla and 6<sup>th</sup>:
  - (i) The City noted that there is no storm system in these streets and there is a need due to drainage issues on Willamette. Project would likely incorporate this work. (**ACTION ITEM: ANDREW**).
- (f) 2019 and 2020 pavement rehab around old high school:
  - (i) The City noted that the old high school has combined sewer/storm tied into the sanitary sewer line and it should be separated to the adjacent SD and SS mains. A new storm line would need to be extended up 12<sup>th</sup> and/or 10<sup>th</sup>, and or upsizing of existing mains in the area. The City to determine appropriate action to move forward, and MSA will move project back for next 5-year plan (**ACTION ITEM: ANDREW**).
- (g) 2019 pavement rehab on 12<sup>th</sup> between Madison and Monroe:
  - (i) City noted that a failed/cracked concrete SD main will be replaced prior to or during construction (**ACTION ITEM: ANDREW**).
- (h) The project team concurred that the pavement plan should plan for sanitary sewer projects as the rehab list is finalized and should add storm drain projects at the project level (do not plan for in rehab list) (**ACTION ITEM: ANDREW**).
- (i) The City noted that it may be possible to use SS funds for SD improvements if it can show the intent of the SD project is to reduce I&I. The City will confirm and determine if some of the projects like the item (f)(i) above at the old high school could be completed sooner or within the current time frame of the pavement project (**ACTION ITEM: MARTIN/ERIC**).

### (3) WATER – ELI DEBERRY



- (a) The City noted it has limited funds to perform any reconstruction work. Most work completed occurs when leaks are found or breaks occur.
- (b) The City noted that there are no current water priorities overlapping with pavement work shown except on Center Street below. Current CIP work planned is related to PRV's and overland piping for fire flow needs all located outside of City streets.
- (c) The City will check its GIS map and look for pipe upsizing and/or replacements (**ACTION ITEM: ELI**).
- (d) 2015 pavement rehab on Center between 5<sup>th</sup> and 7<sup>th</sup>:
  - (i) As discovered last year during the pavement rehab design process, the existing water main is planned for replacement in 2015. Priority of street is already in the 2015 season and design is at 90% for this work by MSA (**ACTION ITEM: ANDREW**).
- (e) The City provided a list of water main concerns for each street in the current plan, similar to what it provided last year. MSA will use this information to revise the rehab list (**ACTION ITEM: ANDREW**).
- (4) PRIVATE DEVELOPMENT:
  - (a) The City noted that Planning Department has a master file of all PD's that have been submitted to date. The problem is that construction of these lots is never known until the developer knows.
  - (b) Imminent development will occur in the Hillendale area south of Leland. Leland is a County, so no anticipated impacts.

## 7. NEXT STEPS

- a. Field walkthrough – Scheduled for 8am tomorrow morning (11-20-2014)
- b. Update draft list and map based on utility comments and walkthrough
- c. Follow-up pavement workshop to confirm list
- d. Coordinate with rate review study
- e. Begin developing draft five year plan document
  - i) Add a GIS map to the appendix with all of the City utility projects noted above so that the info is documented (**ACTION ITEM: ANDREW**).
- f. City to provide franchisee utilities with final 5-year plan when complete for their use in planning.
- g. Send City assumptions made to determine unit costs shown in the Decision Tree (% Engineering, % Construction Engineering, ADA Ramps, etc.) (**ACTION ITEM: ANDREW**).



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**PROJECT:** City of Oregon City – Five Year Pavement Maintenance Plan Update

**MEETING:** Field Walk/Drive-through - NOTES

**DATE:** November 20, 2014

**LOCATION:** Various Streets

**TIME:** 8:00 AM

**ATTENDEES:** Kevin Hanks, Matt Powlison (COOC), Gabe Crop, Andrew Giesy (MSA)

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Additional comments/clarification from the City were included in the Notes below based on email/phone correspondence on 12-2-2014.

## 1. PURPOSE OF MEETING

- a. Conduct a field review of the streets listed in the current 6-year rehab list
- b. Visually verify pavement condition
- c. Discuss preliminary rehab treatments as recommended by StreetSaver

## 2. FIELD REVIEW OF STREETS

- a. Most streets were reviewed, although a few miscellaneous segments showing up from StreetSaver in the south/central part of town were bypassed in favor of looking at other priority streets. It was discussed that short segment residential streets should generally be omitted from the project list. MSA will check these streets on Google Streetview to confirm prior to striking from the project list.

b. The City noted that it does not like using chip seals downtown due to traffic volumes, buses and potential backlash from the Downtown Group for the finished product look (apparently can't go curb tight with a chip seal). County is experimenting with a different chip mix design for urban areas that the City may use later down the road. PM in the downtown area is either crack sealing/slurry sealing. Otherwise, its minor pavement rehab (mill/fill or overlay).

- c. 10<sup>TH</sup> Street from the bottom of Singer Hill to Hwy. 99.
  - Team determined that this street should be moved off the 2015/2017 rehab list and onto the 2015 preventative maintenance (PM) list (crack seal).

- No potholes visible.
  - Loops for signal and loops for “Do Not Stop On Tracks” warning system.
  - Curb and sidewalk would need to be constructed on the south side of 10<sup>th</sup> between Main and the railroad tracks, in front of the City owned lot.
  - Move to rehab this entire segment in 2019 (**concur**).
- d. Main Street from 10<sup>th</sup> Street to 11<sup>th</sup> Street
- Team determined that this street should be moved off the 2018 rehab list and onto the 2015 PM list (**crack seal**).
  - **City performed minor mill/fill work in house on the NB lane in 2010, and would like to get +/- 10-years out of that work.**
  - Move to rehab in 2019 with 10<sup>th</sup> Street above.
- e. Main Street from 11<sup>th</sup> Street to 14<sup>th</sup> Street
- Team determined that this street has a mix of existing conditions (rut patching, cracking, potholes, etc.) and this section should be added to 2019 as a 2” mill/fill rehab.
  - Also add to PM list for 2015 (**crack seal**) to be consistent with segment noted above.
- f. Main Street from 14<sup>th</sup> Street to 15<sup>th</sup> Street
- Team determined that instead of performing work on Main between 10<sup>th</sup> and 13<sup>th</sup>, consider reconstructing Main Street at 14<sup>th</sup> and 15<sup>th</sup> in 2015 ~~or 2016 (City noted it could chip seal 10<sup>th</sup> to 14<sup>th</sup> to get a few more cycles out of the pavement).~~
  - The City noted that there is subgrade failure occurring at both of these intersections (constantly sinking) and are likely constructed on old fill.
  - **Reconstruct in 2015, including intersections at 14<sup>th</sup> and 15<sup>th</sup> (also reconstruct north of I-205 overpass, see below)**
- g. Main Street 15<sup>th</sup> Street to Clackamette Drive at Dunnes Drive (McDonalds)
- Team determined that the pavement condition between 15<sup>th</sup> and just north of the I-205 overpass (near Agnes Avenue) should be **included in the 2015 rehab list as a 2” mill/fill. However, this segment can be pulled out of the rehab effort if budget is constrained for 2015 and instead be included in the 2015 PM list (move rehab out to next 5 year cycle). City confirmed that it has installed chip seal on newly constructed asphalt in the past without any issues and would chip from 15<sup>th</sup> to Dunnes for consistency if this is how the rehab budget works out for 2015.**
  - There is a sinkhole just north of the overpass that will require reconstruction/stabilization. **Reconstruct this failing area in 2015 with the reconstruct work occurring between 14<sup>th</sup> and 15<sup>th</sup>.**
  - Team determined that from the I-205 overpass near Agnes Avenue north to Dunnes Drive should be added to the PM list as a chip seal (**yes, along with chip seal from 15<sup>th</sup> to Agnes if budget doesn’t support a mill/fill in this segment**)
- h. 15<sup>th</sup> Street from Hwy. 99 to Polk
- Numerous potholes

- Team determined to combine paving projects in the list on 15<sup>th</sup> into one project in 2019
  - Also combine with future waterline project in 2019
  - Omit recent work at Washington and Jackson intersections
  - End work at Polk as Polk to Division is in good condition
- i. 14<sup>th</sup> Street from Hwy. 99 to Washington
- Team agreed with StreetSaver for this 2017 project, noting the extensive cracking and the failure occurring at Main Street discussed above.
  - Current map shows rehab work in 2017, but could move this up to coincide with Main Street work at the intersection in 2015 or 2016
- j. 12<sup>th</sup> Street from Railroad Tracks to Madison and Madison to Jackson
- Team agreed with StreetSaver for these 2017 and 2019 projects
  - The City noted that the west limits could extend further from the railroad tracks west to Main Street
  - The Team agreed to combine these projects for construction in 2019
  - Longitudinal cracking could indicate that there is an existing concrete panel underneath the existing AC surfacing
- k. Washington Street from Abernethy to Clackamas Landscape Supply (south end of Jug Handle project limits)
- City noted that this section should be on the rehab list between 2015 and 2017
  - Looks okay to make it another year or two
  - A 2" mill/fill or overlay would be appropriate
- l. Anchor Way from the south end of the Abernethy Creek Bridge near Redland Road to 18<sup>th</sup> Street
- Currently not shown in the rehab list
  - Is shown for 2016 rehab in the Unconstrained list
  - Include this segment in 2015 PM list
- m. 18<sup>th</sup> Street from Anchor Way to Harrison
- Team agreed with StreetSaver for this 2019 rehab project
  - Should move up project year to 2016 due to severe cracking
  - Likely full depth reconstruct
- n. Pierce between 16<sup>th</sup> and 17<sup>th</sup> Street
- Team agreed to remove project from 2017 rehab list and revisit project conditions during the next 5-year cycle.
- o. 16<sup>th</sup> Street from Jackson to Division
- Team agreed to remove project from 2016 rehab list and add project to PM list.
  - Revisit project conditions during the next 5-year cycle.
  - If project budget allows, consider adding to rehab list in 2019
- p. 16<sup>th</sup> Street from Jackson to Division
- Team agreed to move project from the 2016 rehab list to 2019
- q. Jackson from 12<sup>th</sup> to 16<sup>th</sup> Street
- Team agreed to add this street to the project rehab list for 2016

- Bus route
- r. Madison from 12<sup>th</sup> to 15<sup>th</sup> Street
  - Team agreed to keep this project as shown in the 2015 rehab list
- s. Van Buren from 12<sup>th</sup> to 15<sup>th</sup> Street
  - Add this segment to 2015 rehab list
  - Traffic during football season
  - 2" mill/fill or prelevel with overlay
- t. 10<sup>th</sup> Street from Polk to Taylor
  - Strike from 2017 rehab list
  - If project budget allows, consider adding to rehab list in 2019
- u. 11<sup>th</sup> Street from Harrison to Polk
  - Strike from 2016 project list
  - If project budget allows, consider adding to rehab list in 2019
- v. 10<sup>th</sup> Street from John Quincy Adams to Jackson
  - Strike from project list
- w. 10<sup>th</sup> Street from Jackson to Van Buren
  - Add to 2016 project list
- x. Harrison from 9<sup>th</sup> to 10<sup>th</sup>
  - Strike from project list
- y. Monroe from 8<sup>th</sup> to 10<sup>th</sup>
  - Strike from project list
- z. 9<sup>th</sup> from Monroe to Taylor
  - Add 9<sup>th</sup> between John Adams and Monroe
  - As discovered last year during construction between Washington and John Adams, an 8" thick PC pavement runs along the EB lane
  - Due to cost of likely reconstruction, may need to split up 9<sup>th</sup> into multiple phased years
- aa. Lincoln from 9<sup>th</sup> to dead end
  - ADT very low
  - Strike from project list
- bb. Van Buren from 7<sup>th</sup> to 9<sup>th</sup>
  - Strike from project list
- cc. John Adams from 8<sup>th</sup> to 9<sup>th</sup>
  - Strike from project list
- dd. Center from 1<sup>st</sup> to 5<sup>th</sup> Street
  - Strike from project list
- ee. 1<sup>st</sup> Street from High to Center
  - Strike from project list
- ff. Jefferson from 1<sup>st</sup> to 3<sup>rd</sup>
  - Strike from project list
- gg. 3<sup>rd</sup> Street from Jefferson to Madison
  - Strike from project list
- hh. Madison from 3<sup>rd</sup> to 4<sup>th</sup> Street
  - Strike from project list

- ii. Linn from 4<sup>th</sup> to Park Drive
  - Push project out to 2019
  - Add to 2015 PM list
- jj. 3rd Street from Terrace Avenue to Linn Avenue
  - Strike from project list
- kk. East Street from Summit to 3<sup>rd</sup> Street
  - Strike from project list
  - Previous H2O project completed half-street improvement
- ll. Creed from Brighton to dead end
  - Strike from project list
- mm. Ainsworth from Charman to McKinley
  - Strike from project list
- nn. Apperson from Charman to McKinley
  - Strike from project list
- oo. Brighton from Park to Ogden
  - Move from 2016 project list to 2018 project list
- pp. Cherry from Barclay to Ogden
  - Move from 2017 project list to 2019 project list
- qq. Center (Telford) from Ogden to Sunset
  - Geotech issue occurring on the downhill side of the road prism which may require a special reconstruct/stabilization design
  - Project limits should extend NE through curve and down the hill to the existing cold joint east of Sunset
  - Due to the geotech issues, strike from project list
- rr. 5<sup>th</sup> Avenue from South End Road to Miller Street and Miller Street from 5<sup>th</sup> to 4<sup>th</sup> Avenue
  - Add this to the current 5-year plan, say 2016
  - Full depth reconstruction or cement treatment is likely or leveling with overlay w/ fibers
- ss. Remove all streets in the Canemah area shown on the current map and add the street above
  - 3<sup>rd</sup> Avenue from Blanchard to dead end
  - 3<sup>rd</sup> Avenue from Ganong to Marshall
  - 5<sup>th</sup> Avenue from Paquet to Blanchard
  - Miller from OR99 to 3<sup>rd</sup>
- tt. Holcomb from Longview to Winston
  - Strike from project list
  - Street was recently chip sealed
- uu. Johnson from Williams to Holmes
  - Strike from project list
- vv. Warner Milne from Linn to Beavercreek
  - Recently micro sealed and past crack seal
  - City could chip seal to get another life cycle
  - Move from 2016 to 2019 project list



- ww. Pease from Crisp to Lealand
  - No rehab needed
  - Currently shown in 2020, OK; verify at that time
- xx. Partlow from Towercrest to Central Point
  - 2018 storm work per Eric Hand at Central Point intersection
  - Existing water trench and some other patch work
  - Good condition
  - Move from 2018 to 2019
- yy. Central Point from Parish Road to McCord
  - Development in this area
  - Christmas tree farm is in development now
  - Add potential rehab a few years out; say 2019
- zz. Gaffney from Meyers to McVey
  - Street was recently chip sealed
  - Remove from rehab list
- aaa. Still Meadow from Gaffney to Pinecreek
  - Street was recently slurry sealed
  - Remove from rehab list
- bbb. Lazy Creek from Gafney to dead end
  - Low ADT
  - Remove from rehab list
- ccc. Glen Oak from OR213 to Beaver creek
  - Verify on PM list
  - If not, add to chip seal list
- ddd. Maple Lane Rd from Beaver creek to Maple Lane Court
  - Recent ODOT transfer to City
  - Add to crack seal list
- eee. Beaver creek from Trails End Highway (OR213) to Fir
  - Was on previous draft rehab map for 2016 prior to modifications to the decision tree
  - Eastbound direction is worse than the westbound direction
  - Confirm project is on PM list for 2015
  - Revisit project conditions during the next 5-year cycle.
- fff. Beaver creek from the South Ridge Center driveway west to Molalla
  - Confirm on 2015 PM list
- ggg. Beaver creek from the Library Ct. (County offices) to Molalla
  - Adjust west end limits to match cold joint from previous project
  - 2015 PM surface treatment would extend pavement life a few more cycles prior to rehab
- hhh. Molalla from Warner Milne to Garden
  - Mill/fill in 2015



Murray, Smith & Associates, Inc.  
Engineers/Planners

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**PROJECT:** Oregon City – 5 Year Pavement Maintenance Plan Update

**MEETING:** Pavement Workshop #2 - **Minutes**

**DATE:** December 29, 2014

**LOCATION:** Public Works Department  
122 S Center Street  
Oregon City, Oregon 97045

**TIME:** 10:00 AM – 12:00 PM

**ATTENDEES:** Martin Montalvo, Kevin Hanks, Matt Powlison, ~~John Burrell~~,  
(COOC), Gabe Crop, Andrew Giesy (MSA)

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## 1. INTRODUCTIONS

- a. The City noted that John Burrell is no longer part of the Project Team and should not be included on any further project correspondence.
- b. No City utilities attended meeting. MSA will follow-up with a separate Email to Martin for distribution to City water and storm/wastewater staff. The email will include the current map and list, along with a list showing the additional streets added from their last review in order to minimize their review time (**ACTION ITEM: ANDREW**).

## 2. GOAL OF MEETING – Confirm rehabilitation project list to enable development of preventative maintenance list and draft report.

## 3. DISCUSSION

- a. Recap changes from field drive through
- b. Review list
  - i) With the exception of the utility work and the associated comments noted in the section below, the City concurred with the rehab list and map.
  - ii) The City noted that it is currently looking at radar to replace the existing loop detection system at the signalized intersection of Abernathy and Washington Street. The detection system is currently out, and is running on recall (timed phases). The City may consider upgrading other signals from loops to radar in the future on a project level basis. MSA noted that it has noted if there are loops on a given street in the project rehab list for future reference.

- iii) City Streets noted that the existing curb ramps on Molalla at Gaffney Lane in the SE (Burgerville) and SW (Get-N-Go Market) quadrants may not meet ADA requirements and may require right-of-way to construct new compliant ramps. MSA will add a brief comment to the rehab list for future reference (**ACTION ITEM: ANDREW**).

c. Review utility needs

- i) The City noted that there is a current storm/sanitary sewer project in design on Main Street between 12<sup>th</sup> and 13<sup>th</sup> Street that will be constructed in 2015. The City would like to pave this segment currently scheduled for 2019 in 2016. The City requested the plan move Main Street rehab from 12<sup>th</sup> to 15<sup>th</sup> Street to 2016, keeping Main Street rehab from 10<sup>th</sup> to 12<sup>th</sup> Street along with 10<sup>th</sup> Street from the RR tracks to McLoughlin Blvd to 2019 (**ACTION ITEM: ANDREW**).
- ii) The City noted that the Canemah project shown for rehab 2016 can either be moved to 2019 or pushed out to the next 5-year plan if budget doesn't allow (**ACTION ITEM: ANDREW**).
- iii)

d. Review “gray zone” streets

- i) The “gray zone” streets are noted in the project rehab list as “Special Projects”.
- ii) Center Street from Ogden to Sunset:
  - (1) This project is shown on the current map/list as a future special project.
  - (2) The City noted that it has an existing survey on file from 2009 in this area and in 2015 it plans to survey existing benchmarks to determine what kind of settlement is occurring. The team noted that list indicated that there are signs of settlement occurring and a geotechnical issue may be cause, which is why this project is noted as being beyond the scope of PMUF paving.

e. Projects to Consider Should Budget Allow

- i) MSA noted that 6<sup>th</sup> Street between High and Jackson Street is shown on this list based on recent comments received from the Public Works Director regarding the future work around the Library between John Adams and Jefferson. The City noted that the Library project may be doing some street work, and could be combined/coordinated with the PMUF projects. The team noted that leaving 6<sup>th</sup> Street on the “Projects to Consider” list with the ability for the project to be easily added during project year development. The team noted that it will be important for the Library City project manager to be aware of the PMUF work in the area such that any street work can be coordinated.
- ii) The City noted that Mt. Pleasant Elementary School located in the NW quadrant of Linn Ave and Warner Parrott Rd/Warner Milne Rd has planned geometric design modifications underway. The City recently purchased this lot and a new police station and city hall is anticipated to occupy the lot in the future. The police station is anticipated to be constructed in 2019 and city hall within 10-years. Warner Milne Rd

between Linn Ave and Beaver Creek Rd is shown as being rehabilitated in 2019.

f. Budget review

- i) The City noted that the rehab budget should remain at \$1.05M, with \$0.25M allocated to preventative maintenance and a total annual budget of \$1.3M. Should the City determine that a rate increase is necessary, it would like to maintain the current level of rehab as is, and allocate the majority of the funds collected from the rate increase towards preventative maintenance.
- ii) City Street crews indicated that its preference is to increase funding for preventative maintenance over the next 5-year cycle in order to reduce the cycle length of managing the 300 lane miles of road the City owns. A summary was prepared by City Streets and distributed for discussion purposes.

g. Rate adjustment update

- i) The City noted that MSA and the City has a scheduled meeting with FCS on January 7, 2015 to discuss variables associated with any potential PMUF rate adjustment.
- ii) Discuss FCS's needs
- iii) Previous CAPS street system summaries used a dollar amount to cap out the PCI
- iv) The City will review the decision tree (sent to the City this morning for review by MSA) prior to talking with FCS (**ACTION ITEM: MARTIN**).

4. NEXT STEPS

a. Coordinate utility needs updates for added streets

b. Finalize rehab project list

- i) The City noted that the additional "Special Projects List" and the "Projects to Consider Should Budget Allow List" should be included in the report in the Appendix with the main rehab and PM lists (**ACTION ITEM: ANDREW**).

c. Run preventative maintenance scenario based on final rehab project list

- i) City Streets noted that it has a PM list already developed for 2015
- ii) City Streets will send the list to the City's GIS department for segmentation and area calculations, and will then send the list and associated ShapeFiles to MSA for inclusion in the final PM list (**ACTION ITEM: MATT**).
- iii) MSA will then send the final project rehab list and the City's 2015 PM list to CAPS so they can run a new PM scenario with the streets noted in these two lists deducted from the final PM list.

d. Coordinate with OC Street staff regarding preventative maintenance plan

- i) The City noted that in general, its 2015 PM list includes Type II Slurry on residential streets and a chip seal on Glen Oak Road between OR213 and Beaver Creek Road.
- ii) PM treatment types (Crack Seal, Microsurfacing or Chip Seal):

- (1) MSA noted that the decision tree treats microsurfacing and chip sealing as the same type of maintenance, and uses an average unit price between the two treatments. That said, the average unit price is weighted more toward the lower cost chip seal since this has been the typical treatment type in the City in years past.
- (2) The City questioned if CAPS could run the new scenario with microsurfacing and chip sealing separately.
- (3) MSA noted that even if CAPS could run them separately, since microsurfacing triggers ADA, Street Saver likely would run microsurfacing out of being a viable treatment.
- (4) The project team agreed to keep the two treatment types together in the PM list, and the City will need to look at streets that they want to pursue microsurfacing on by a case-by-case basis (streets without sidewalks or streets with compliant curb ramps are likely candidates).
- iii) The City will use the PM list after CAPS runs the final scenario, and will update the list based on its own info
- iv) The City needs a week to review the final PM list from CAPS
- v) Once MSA receives the 2015 list from City Streets, it will send to CAPS for the final PM scenario, which will also include the final rehab list of streets. Tentative schedule to send this to CAPS is on January 5<sup>th</sup> or 6<sup>th</sup>, 2015 (**ACTION ITEM: ANDREW**).
- vi) Receive comments back from COOC on the PM list by January 12, 2015 for inclusion in the draft report on the 15<sup>th</sup>.
- e. Develop and submit draft 5-year PMUF plan document
  - i) The project team agreed to begin preparing the draft plan with the minor modifications to the rehab list noted above (**ACTION ITEM: ANDREW**).
  - ii) FCS needs to complete their PMUF review prior to MSA finalizing the plan
  - iii) The City may need to keep the Work Order Open to get FCS to complete their work (**ACTION ITEM: MARTIN**).

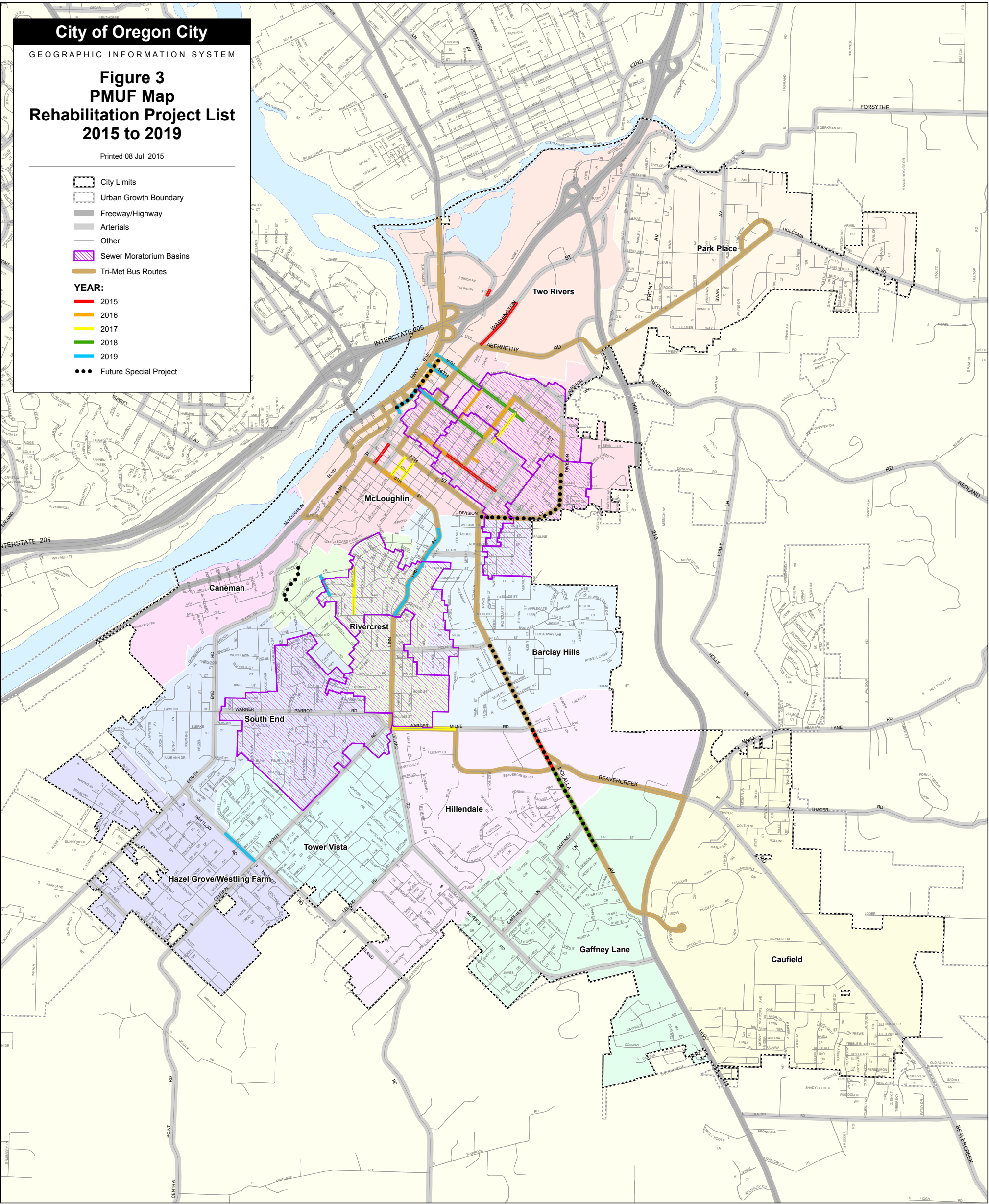




## **APPENDIX D**













### **PMUF Future Projects Maps**

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## GEOGRAPHIC INFORMATION SYSTEM

-  City Limits  
 Urban Growth Boundary  
 Freeway/Highway  
 Arterials  
 Other  
 Sewer Moratorium Basins  
 Tri-Met Bus Routes
- YEAR:**
-  2015  
 2016  
 2017  
 2018  
 2019
- Future Special Project



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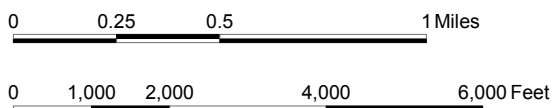
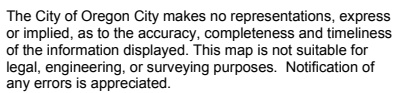
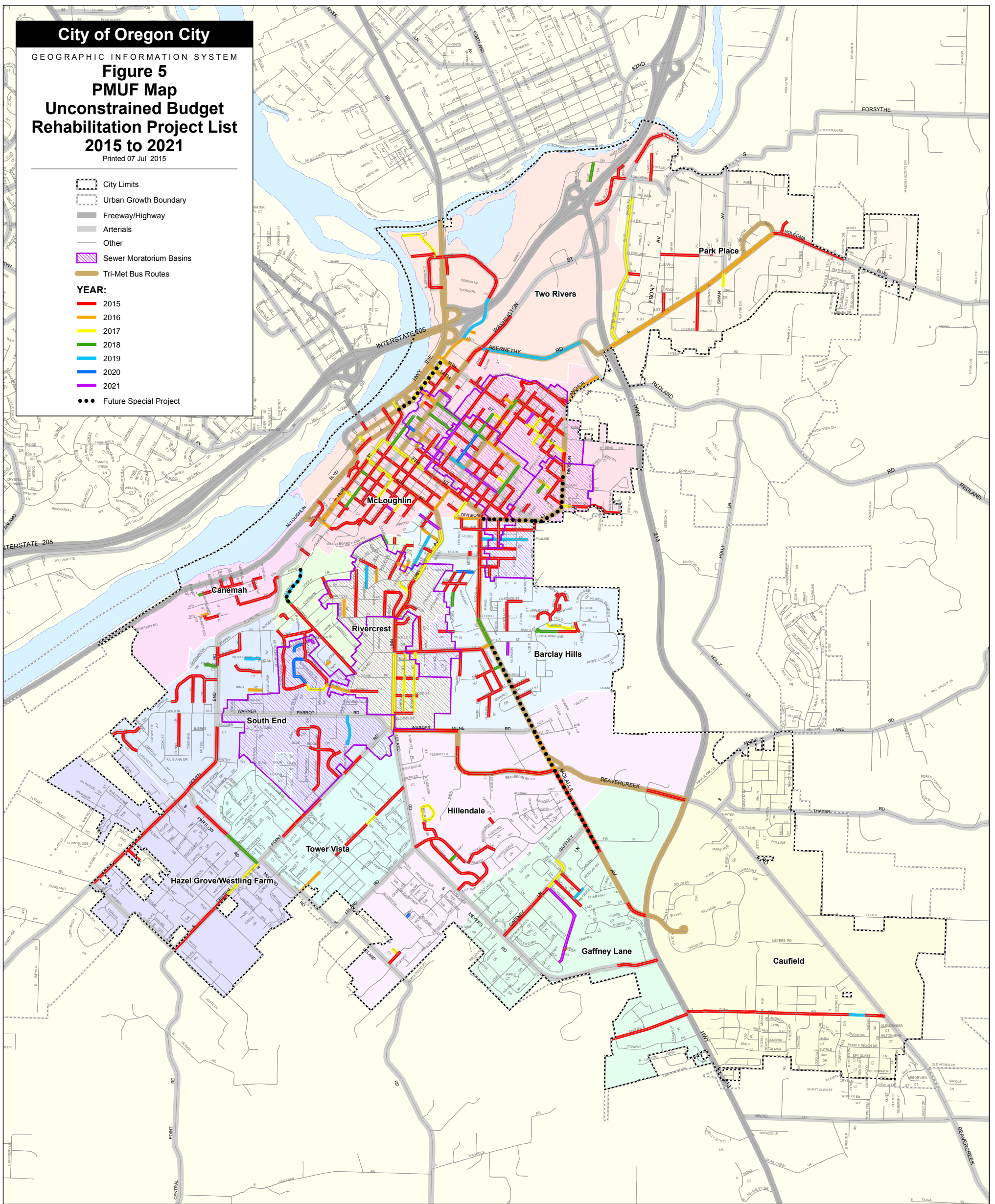




GEOGRAPHIC INFORMATION SYSTEM

**Figure 5**  
**PMUF Map**  
**Unconstrained Budget**  
**Rehabilitation Project List**  
**2015 to 2021**  
Printed 07 Jul 2015

- YEAR:**



Date Saved: 7/7/2015 5:26:28 PM  
Plot date: 7/7/2015  
Date Exported: 7/7/2015  
Map name: FIGURE 5 UNCONSTRAINED.MXD





**APPENDIX E**  
**Rehabilitation and Preventative Maintenance**  
**Project List Spreadsheets,**  
**2015 to 2019**

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City of Oregon City  
Five Year Pavement Maintenance Plan Update  
PMUF Rehabilitation Project List  
2015 to 2019  
July 8, 2015

Street Name	Beginning Location	End Location	Pavement Classification Index (PCI) Untreated	Pavement Classification Index (PCI) Treated	Street Functional Classification (R=Residential, C=Collector, A=Arterial)	Existing Surface Type	Suggested Treatment Type	Treatment Cost (\$/yd2)	Area Treated (yd <sup>2</sup> )	Estimated Construction Cost	Rehabilitation Year	Yearly Cumulative Estimated Cost	Roadway Scoping Considerations	Approximate No. of Street Corners Requiring ADA Curb Ramps	Utility Scoping Considerations
CENTER ST	5TH ST	7TH ST	23.17	100	C	AC	2" Mill & Inlay	\$22.61	2,978	\$67,328	2015	\$67,328	-	12	H2O and SD dsn. in 2015 & const. prior to PMUF work.
9TH ST	MONROE ST	JACKSON ST	22.80	100	R	AC	Reconstruct A/C	\$79.28	2,609	\$206,833	2015	\$274,160	Conc. panel under AC likely to be encountered.	4	-
9TH ST	JACKSON ST	TAYLOR ST	22.81	100	R	AC	Reconstruct A/C	\$79.28	1,654	\$131,164	2015	\$405,325	Con. panel under AC likely to be encountered. Reconst. 100' N. of intersection to capture dip in road.	16	-
MOLALLA AVE	WARNER-MILNE RD	BEAVERCREEK RD	46.29	100	A	AC	2" Mill & Inlay	\$22.61	9,882	\$223,424	2015	\$628,749	Beg @ pvmt. chg. 230' W/O W-M Rd. Loop detectors.	12	H2O may need replacement prior to proj.
MAIN ST	END/O C&G N/O 205 UNDERPASS	200' N/O 205 UNDERPASS	49.85	100	C	AC	Reconstruct A/C	\$79.28	889	\$70,471	2015	\$699,220	Chip over reconst. area to match adjacent PM in 2015. Subgrade issues. Private develop. to make improvements.	6	-
WASHINGTON ST	ABERNETHY RD	PVMNT CHG 1,492' N/O ABERNETHY RD	22.97	100	A	AC	2" Mill & Inlay	\$22.61	7,957	\$179,915	2015	\$879,136	End @ pvmt. chg. 1,492' N/O Abernethy (Jug Handle limits).	10	-
MAIN ST	12TH ST	14TH ST	20.11	100	C	AC	2" Mill & Inlay	\$22.61	2,911	\$68,453	2016	\$68,453	Potential "Special Project".	1	-
MAIN ST	14TH ST	15TH ST	20.11	100	C	AC	Reconstruct A/C	\$79.28	1,800	\$148,412	2016	\$216,865	Subgrade issues. Potential "Special Project".	5	-
5TH ST	WASHINGTON ST	MONROE ST	45.17	100	A	AC	2" Mill & Inlay	\$22.61	4,871	\$114,541	2016	\$331,406	-	16	SD surcharge at Monroe; model 2015 & const. 2020. OK to pave.
MADISON ST	12TH ST	15TH ST	0.00	100	R	AC	2" Mill & Inlay	\$22.61	3,319	\$78,055	2016	\$409,461	Exclude rehab @ 12th to allow for SS CIP and SD repair in 2018.	12	SS CIP Project H-1, SD repair in 12th and SD replacement in Madison.
9TH ST	JOHN ADAMS ST	MONROE ST	24.33	100	R	AC	Reconstruct A/C	\$79.28	2,283	\$188,218	2016	\$597,679	Concrete panel under AC likely to be encountered.	14	-
JACKSON ST	12TH ST	15TH ST	13.10	100	C	AC	CTB & AC	\$51.53	4,493	\$240,803	2016	\$838,482	Poor subgrade along curb line likely.	14	Check utility depths prior to CTB. Rowdie CIP project const. in 2015.
JACKSON ST	15TH ST	16TH ST	16.50	100	R	AC	CTB & AC	\$51.53	1,467	\$78,600	2016	\$917,082	Poor subgrade along curb line likely.	5	Check utility depths prior to CTB.
10TH ST	JACKSON ST	VANBUREN ST	9.84	100	R	AC	Reconstruct A/C	\$79.28	1,083	\$89,267	2016	\$1,006,350	-	1	Separate school combined SS/SD flows.
VAN BUREN ST	12TH ST	15TH ST	11.16	100	R	AC	2" Mill & Inlay	\$22.61	2,759	\$67,469	2017	\$67,469	Complete prior to football season.	7	-
WARNER MILNE RD	LINN AV	HOUSE #150 (PAVE CHG)	45.71	100	A	AC	2" Mill & 4" Inlay	\$31.71	2,843	\$97,500	2017	\$164,969	Loop detectors.	2	-
WARNER MILNE RD	HOUSE #150 (PAVE CHG)	BEAVERCREEK RD	45.46	100	A	AC	2" Mill & 4" Inlay	\$31.71	5,189	\$177,958	2017	\$342,927	Loop detectors.	17	-
6TH STREET	JOHN ADAMS ST	JEFFERSON ST	-	-	R	AC	2" Mill & Inlay	\$22.61	889	\$21,738	2017	\$364,665	Complete after library project.	0	-
JEFFERSON ST	5TH ST	7TH ST	13.30	100	R	AC	2" Mill & Inlay	\$22.61	2,283	\$55,825	2017	\$420,490	Complete after library project.. Consider paving pk lot at 7th.	10	Library SS lat. repair. 2" galv. H2O replacement at alley btwn 6th/7th.
JOHN ADAMS ST	5TH ST	7TH ST	12.23	100	R	AC	2" Mill & Inlay	\$22.61	2,609	\$63,800	2017	\$484,291	Complete after library project.	5	-
BRIGHTON AVE	PARK DR	OGDEN DR	40.23	100	R	AC	2" Mill & Inlay	\$22.61	5,077	\$124,163	2017	\$608,454	-	0	-
15TH ST	WASHINGTON ST	MADISON ST	17.96	100	C	AC	CTB & AC	\$51.53	2,823	\$163,652	2018	\$163,652	Access to hospital. Restrict work on 12th and 15th to only allow work on one route at a time.	3	Check utility depths prior to CTB.
15TH ST	MADISON ST	150' SE OF JACKSON ST	15.11	100	C	AC	CTB & AC	\$51.53	4,222	\$244,738	2018	\$408,390	Access to hospital. Restrict work on 12th and 15th to only allow work on one route at a time.	1	Check utility depths prior to CTB. Replace PRV at 15th prior to const.
15TH ST	150' SE OF JACKSON ST	HARRISON ST	0.00	100	C	AC	CTB & AC	\$51.53	1,422	\$82,438	2018	\$490,828	Access to hospital. Restrict work on 12th and 15th to only allow work on one route at a time.	4	Check utility depths prior to CTB. Possible SD project to eliminate ponding.
15TH ST	HARRISON ST	POLK ST	44.05	100	R	AC	2" Mill & Inlay	\$22.61	441	\$11,213	2018	\$502,042	Access to hospital. Restrict work on 12th and 15th to only allow work on one route at a time.	4	-
MOLALLA AVE	BEAVERCREEK RD	CLAIRMONT WY	41.25	100	A	AC/AC	2" Mill & Inlay	\$22.61	6,478	\$164,750	2018	\$666,792	Loop detectors. Potential future "Special Project".	8	-
MOLALLA AVE	CLAIRMONT WY	GARDEN MEADOWS DR	44.94	100	A	AC	2" Mill & Inlay	\$22.61	7,442	\$189,268	2018	\$856,060	Loop detectors. ADA ramps @ Gaffney Ln. may req ROW. Potential future "Special Project".	5	-
12TH ST	WASHINGTON ST	MADISON ST	15.04	100	C	AC	CTB & AC	\$51.53	3,132	\$181,544	2018	\$1,037,604	Access to hospital. Restrict work on 12th and 15th to only allow work on one route at a time.	10	SS CIP Project H-1 and SD spot repair. Check utility depths prior to CTB.
12TH ST	MADISON ST	JACKSON ST	10.25	100	C	AC	CTB & AC	\$51.53	3,248	\$188,268	2018	\$1,225,872	Access to hospital. Restrict work on 12th and 15th to only allow work on one route at a time.	7	SS CIP Project H-1 and SD replacement. Check utility depths prior to CTB.
LINN AVE	PARK DR	CHARMAN ST	60.26	100	A	AC	2" Mill & Inlay	\$22.61	4,243	\$112,224	2019	\$112,224	-	2	-
LINN AVE	CHARMAN ST	4TH ST	49.65	100	A	AC	2" Mill & 4" Inlay	\$31.71	5,533	\$205,266	2019	\$317,489	-	0	-
PARTLOW RD	S. CENTRAL POINT RD	SPRING VALLEY DR	43.63	100	C	AC	2" Mill & 4" Inlay	\$31.71	4,522	\$167,757	2019	\$485,247	-	10	In-house SD project to eliminate ponding near Central Point.
CHERRY AVE	BARCLAY AV	OGDEN DR	42.01	100	R	AC	2" Mill & Inlay	\$22.61	1,995	\$52,760	2019	\$538,007	-	0	-
10TH ST	MAIN ST	RR TRACKS/SINGER HILL RD	44.12	100	A	AC	2" Mill & 4" Inlay	\$31.71	711	\$26,380	2019	\$564,386	Install CLTLM for improved access into coffee shop drive-thru. Consider S/W improvemetns to the south.	0	Loops for train track warning.
MAIN ST	10TH ST	12TH ST	69.95	100	C	AC/AC	2" Mill & Inlay	\$22.61	3,467	\$91,695	2019	\$656,081	Restrict work on 12th and 15th for access to hospital. Potential "Special Project".	2	-
12TH ST	MAIN ST	WASHINGTON ST	0.46	100	C	AC	CTB & AC	\$51.53	2,084	\$125,629	2019	\$781,711	Restrict work on 12th and 15th for access to hospital. Potential "Special Project".	6	SS CIP Project H-1. Check utility depths prior to CTB.
14TH ST	MCLOUGHLIN BLVD	95 FT W/O WASHINGTON ST	1.93	100	C	AC	CTB & AC	\$51.53	2,542	\$153,226	2019	\$934,936	Loop detectors. Potential "Special Project".	4	Check utility depths prior to CTB.
15TH ST	MCLOUGHLIN BLVD	MAIN ST	23.26	100	C	AC	CTB & AC	\$51.53	573	\$34,562	2019	\$969,498	Loop detectors. Restrict work on 12th and 15th for access to hospital. Potential "Special Project".	2	Check utility depths prior to CTB.
15TH ST	MAIN ST	WASHINGTON ST	6.32	100	C	AC/AC	CTB & AC	\$51.53	2,322	\$139,990	2019	\$1,109,488	Restrict work on 12th and 15th for access to hospital. Potential "Special Project".	1	Check utility depths prior to CTB.

SPECIAL PROJECTS:															
MAIN ST	10TH ST	12TH ST	-	-	C	AC/AC	SPECIAL PROJECT	-	3,467	-	-	-	-	-	-
MAIN ST	12TH ST	14TH ST	-	-	C	AC	SPECIAL PROJECT	-	2,911	-	-	-	-	-	-
MAIN ST	14TH ST	15TH ST	-	-	C	AC	SPECIAL PROJECT	-	1,800	-	-	-	-	-	-
TELFORD RD	PVMNT CHG 124' NW/O OGDEN DR	OGDEN DR	-	-	C	AC	SPECIAL PROJECT	-	372	-	-	-	Geotech issues on slope may require special design	-	-
S CENTER ST	TELFORD AVE	SUNSET ST	-	-	C	AC	SPECIAL PROJECT	-	2,682	-	-	-	Geotech issues on slope may require special design	-	-
DIVISION ST	EMERGENCY ENTRANCE	MORTON RD	-	-	C	AC/AC	SPECIAL PROJECT	-	4,293	-	-	-	-	-	-
DIVISION ST	MORTON RD	SELMA ST	-	-	C	AC/AC	SPECIAL PROJECT	-	2,945	-	-	-	-	-	-
DIVISION ST	SELMA ST	7TH ST	-	-	C	AC/AC	SPECIAL PROJECT	-	4,080	-	-	-	-	-	-
DIVISION ST	7TH ST	MOLALLA AV	-	-	C	AC/AC	SPECIAL PROJECT	-	549	-	-	-	-	-	-
MOLALLA AVE	HOLMES LN	WARNER ST	-	-	A	AC/AC	SPECIAL PROJECT	-	5,495	-	-	-	-	-	-
MOLALLA AVE	WARNER ST	GALES LN	-	-	A	AC/AC	SPECIAL PROJECT	-	4,693	-	-	-	-	-	-
MOLALLA AVE	GALES LN	WARNER-MILNE RD	-	-	A	AC/AC	SPECIAL PROJECT	-	2,642	-	-	-	-	-	-
MOLALLA AVE	WARNER-MILNE RD	BEAVERCREEK RD	-	-	A	AC	SPECIAL PROJECT	-	9,882	-	-	-	-	-	-
MOLALLA AVE	BEAVERCREEK RD	CLAIRMONT WY	-	-	A	AC/AC	SPECIAL PROJECT	-	6,478	-	-	-	-	-	-
MOLALLA AVE	CLAIRMONT WY	GARDEN MEADOWS DR	-	-	A	AC	SPECIAL PROJECT	-	7,442	-	-	-	-	-	-

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2015	GLEN OAK RD	ST HWY 213	100 FT. W. OF HEIDER DR	C	AC	CHIP SEAL	67.05	76.54	\$4.00	6,837	\$27,349	\$27,349
2015	GLEN OAK RD	100' W OF HEIDER DR	200' W. OF QUINALT DR	C	AC	CHIP SEAL	67.38	76.82	\$4.00	1,908	\$7,632	\$34,981
2015	GLEN OAK RD	200' W. OF QUINALT DR	COQUILLE DR	C	AC	CHIP SEAL	71.45	80.33	\$4.00	1,940	\$7,760	\$42,741
2015	GLEN OAK RD	COQUILLE DR	END OF SIDEWALK/LT#15035	C	AC	CHIP SEAL	48.95	62.87	\$4.00	2,025	\$8,100	\$50,841
2015	GLEN OAK RD	END OF SIDEWALK/LT#15035	100' W OF AUGUSTA DR	C	AC/AC	CHIP SEAL	60.99	71.52	\$4.00	936	\$3,742	\$54,584
2015	GLEN OAK RD	100' W OF AUGUSTA DR	S. BEAVER CREEK RD	C	AC	CHIP SEAL	52.34	65.09	\$4.00	1,677	\$6,709	\$61,293
2015	BEAVERCREEK RD	1000 FT W. OF MOLALLA AV	KAEN RD	A	AC	MICROSURFACING	40.56	58.13	\$4.00	7,530	\$30,122	\$91,415
2015	BEAVERCREEK RD	KAEN RD	HEALTH DEPT ENTRANCE	A	AC	MICROSURFACING	47.09	61.73	\$4.00	3,142	\$12,569	\$103,984
2015	BEAVERCREEK RD	MOLALLA AV	200 FT W. OF MOLALLA AV	A	AC	MICROSURFACING	43.86	59.87	\$4.00	1,133	\$4,533	\$108,517
2015	BEAVERCREEK RD	200 FT W. OF MOLALLA AV	1000 FT W. OF MOLALLA AV	A	AC	MICROSURFACING	48.19	62.39	\$4.00	4,533	\$18,133	\$126,650
2015	RED SOILS CT	BEAVER CREEK RD	CUL DE SAC	R	AC	MICROSURFACING	65.46	75.20	\$4.00	3,213	\$12,852	\$139,503
2015	13TH ST	JACKSON ST	VANBUREN ST	R	AC	SLURRY SEAL	67.13	76.60	\$1.40	639	\$894	\$140,397
2015	BELLAMY WAY	CARMELITA DR	KAYENTA PL	R	AC	SLURRY SEAL	77.92	85.91	\$1.40	702	\$983	\$141,381
2015	BOYNTON ST	CENTRAL POINT RD	WINDMILL DR	R	AC	SLURRY SEAL	85.45	92.00	\$1.40	3,644	\$5,102	\$146,483
2015	CARMELITA DR	COHO WAY	LELAND DR	R	AC	SLURRY SEAL	79.90	87.58	\$1.40	2,626	\$3,677	\$150,159
2015	CARMELITA DR	LELAND DR	CARMELITA PL	R	AC	SLURRY SEAL	83.90	90.81	\$1.40	1,634	\$2,287	\$152,446
2015	CARMELITA PL	PROSPECTOR TER	MCDOWELL LN	R	AC	SLURRY SEAL	79.98	87.64	\$1.40	1,682	\$2,355	\$154,801
2015	CENTURY DR	MEYERS RD	100 FT. W. OF DATELINE AVE	R	AC	SLURRY SEAL	77.92	85.91	\$1.40	2,352	\$3,293	\$158,094
2015	CRISP DR	PEASE RD	WINDMILL DR	R	AC	SLURRY SEAL	80.95	88.45	\$1.40	1,192	\$1,669	\$159,763
2015	DATELINE AVE	GAFFNEY LN	CENTURY DR	R	AC	SLURRY SEAL	80.89	88.40	\$1.40	1,582	\$2,215	\$161,978
2015	DRIFTWOOD DR	BOYNTON ST	SUN HAVEN TER	R	AC	SLURRY SEAL	87.06	93.18	\$1.40	1,228	\$1,719	\$163,697
2015	FISHERMANS WAY	S. PEASE RD	MAYFLY CT	R	AC	SLURRY SEAL	87.82	93.72	\$1.40	1,659	\$2,323	\$166,020
2015	FRONTIER PKWY	100 FT W OF WESLEY LYNN ST	50 FT W OF JESSIE CT	R	AC	SLURRY SEAL	79.44	87.19	\$1.40	2,444	\$3,422	\$169,442
2015	GAFFNEY LN	CUL DE SAC	S. NOBLE RD	R	AC	SLURRY SEAL	80.30	87.91	\$1.40	1,556	\$2,179	\$171,621
2015	GAFFNEY LN	100 FT. SW. OF DATELINE AVE	DEAD END NE. OF DATELINE AVE	R	AC	SLURRY SEAL	76.95	85.08	\$1.40	1,032	\$1,444	\$173,065
2015	HAMPTON DR	DEAD END NW OF WINDMILL	PEASE RD	R	AC	SLURRY SEAL	86.27	92.61	\$1.40	1,563	\$2,188	\$175,253
2015	HAZEL CREEK DR	HAZEL PARK DR	DEAD END SW. OF HAZEL DELL	R	AC	SLURRY SEAL	78.86	86.70	\$1.40	1,311	\$1,836	\$177,089
2015	HAZELDELL AVE	CENTRAL POINT RD	ORCHARD GROVE DR	R	AC	SLURRY SEAL	81.08	88.56	\$1.40	4,083	\$5,716	\$182,804
2015	JAMES CT	SQUIRE DR	CUL DE SAC	R	AC	SLURRY SEAL	76.10	84.35	\$1.40	773	\$1,082	\$183,886
2015	JEFFERSON ST	12TH ST	END	R	AC	SLURRY SEAL	82.33	89.57	\$1.40	1,680	\$2,352	\$186,238
2015	JOHN ADAMS ST	12TH ST	15TH ST	R	AC/AC	SLURRY SEAL	63.44	73.51	\$1.40	4,298	\$6,017	\$192,255
2015	KAFTON TER	KAYENTA PL	HOUSE #12678	R	AC	SLURRY SEAL	77.92	85.91	\$1.40	1,315	\$1,841	\$194,096
2015	KAFTON TER	HOUSE #12678	GENTRY HIGHLANDS LN	R	AC	SLURRY SEAL	88.26	94.03	\$1.40	541	\$758	\$194,854
2015	KAYENTA PL	BELLAMY WAY	KAFTON TERR	R	AC	SLURRY SEAL	77.92	85.91	\$1.40	1,076	\$1,507	\$196,360
2015	LITTLE PLAINS PKWY	DEAD END SW OF BOYNTON	DEAD END NE OF SUN HAVEN	R	AC	SLURRY SEAL	87.06	93.18	\$1.40	2,049	\$2,869	\$199,229
2015	MADISON ST	6TH ST	7TH ST	R	AC/AC	SLURRY SEAL	70.71	79.68	\$1.40	819	\$1,147	\$200,377
2015	MAYFLY CT	FISHERMANS WY	CUL DE SAC	R	AC	SLURRY SEAL	87.82	93.72	\$1.40	854	\$1,195	\$201,572
2015	MEADOWLAWN DR	PEASE RD	CUL DE SAC	R	AC	SLURRY SEAL	77.01	85.13	\$1.40	2,951	\$4,132	\$205,704
2015	MILLENNIUM WAY	CENTURY DR	DATELINE AVE	R	AC	SLURRY SEAL	78.92	86.75	\$1.40	1,450	\$2,030	\$207,734
2015	MONROE ST	10TH ST	12TH ST	R	AC/AC	SLURRY SEAL	74.00	82.53	\$1.40	2,311	\$3,236	\$210,969
2015	NEVIN CT	CUL DE SAC (NW)	ROYAL AVE	R	AC	SLURRY SEAL	81.03	88.51	\$1.40	1,537	\$2,152	\$213,121
2015	NOBEL RD	MEYERS RD	LOT #13385	R	AC	SLURRY SEAL	69.09	78.29	\$1.40	522	\$731	\$213,852
2015	NOBEL RD	LOT #13385	LOT #13336	R	AC	SLURRY SEAL	83.90	90.81	\$1.40	1,069	\$1,496	\$215,348
2015	NOBEL RD	LOT #13336	END OF PAVEMENT	R	AC	SLURRY SEAL	83.90	90.81	\$1.40	1,539	\$2,154	\$217,503
2015	ORCHARD GROVE DR	MCCORD RD	DEAD END SW. OF HAZELDELL AV	R	AC	SLURRY SEAL	80.80	88.32	\$1.40	6,992	\$9,789	\$227,292
2015	PEARL ST	MOLALLA AV	ELURIA ST	C	AC/AC	SLURRY SEAL	60.40	71.06	\$1.40	2,443	\$3,420	\$230,711
2015	PRAIRIEVIEW TER	WICKIUP DR	FRONTIER PKWY	R	AC	SLURRY SEAL	80.04	87.70	\$1.40	1,308	\$1,832	\$232,543
2015	ROYAL AVE	SCHAEFER DR	NEVIN CT	R	AC	SLURRY SEAL	81.03	88.51	\$1.40	1,982	\$2,774	\$235,317
2015	SCHAEFER DR	NOBEL DR	ROYAL AVE	R	AC	SLURRY SEAL	79.21	87.00	\$1.40	1,985	\$2,779	\$238,096



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2015	SQUIRE DR	SCHAFFER DR	MEYERS RD	R	AC	SLURRY SEAL	82.00	89.30	\$1.40	2,607	\$3,649	\$241,746
2015	SUN HAVEN TER	DRIFTWOOD DR	SUNRISE WAY	R	AC	SLURRY SEAL	83.94	90.84	\$1.40	1,569	\$2,197	\$243,943
2015	SUNRISE WAY	BOYNTON ST	SUN HAVEN TER	R	AC	SLURRY SEAL	86.27	92.61	\$1.40	712	\$997	\$244,939
2015	WAYNE DR	DEAD END N	100 FT. N. OF ANN DR	R	AC	SLURRY SEAL	76.49	84.68	\$1.40	1,804	\$2,526	\$247,466
2015	WINDMILL DR	FISHERMANS WAY	DEAD END NE	R	AC	SLURRY SEAL	87.82	93.72	\$1.40	1,183	\$1,656	\$249,121
2015	WINDMILL DR	DEAD END SW OF HAMPTON	ROGUE RIVER WAY	R	AC	SLURRY SEAL	85.45	92.00	\$1.40	3,925	\$5,495	\$254,616
2015	WINSTON DR	SMITHFIELD DR	HOLCOMB BLVD	R	AC	SLURRY SEAL	84.12	90.98	\$1.40	1,021	\$1,430	\$256,046
2015	WOODLANDS TER	WICKIUP DR	FRONTIER PKWY	R	AC	SLURRY SEAL	79.21	86.99	\$1.40	1,331	\$1,863	\$257,909
2015	PUMP STATION DW	13181 GAFFNEY LANE	-	-	AC	SLURRY SEAL	-	-	\$1.40	105	\$147	<b>\$258,056</b>
2016	5TH ST	MONROE ST	JACKSON ST	A	AC	MICROSURFACING OR CHIP SEAL	61.18	71.68	\$4.00	2,267	\$9,429	\$9,429
2016	7TH ST	MADISON ST	JOHN Q. ADAMS ST	A	AC	MICROSURFACING OR CHIP SEAL	68.27	77.58	\$4.00	2,467	\$10,261	\$19,691
2016	7TH ST	JOHN Q. ADAMS ST	HARRISON ST	A	AC	MICROSURFACING OR CHIP SEAL	65.72	75.42	\$4.00	5,013	\$20,855	\$40,546
2016	BEAVERCREEK RD	ST HWY 213	FIR ST	A	AC	MICROSURFACING OR CHIP SEAL	67.08	76.56	\$4.00	6,580	\$27,373	\$67,919
2016	MEYERS RD	HWY 213	LUTHERAN CHURCH ENTRANCE	A	AC	MICROSURFACING OR CHIP SEAL	68.21	77.52	\$4.00	4,611	\$19,180	\$87,099
2016	MOLALLA AVE	DIVISION ST	PEARL ST	A	AC	MICROSURFACING OR CHIP SEAL	65.99	75.64	\$4.00	5,547	\$23,074	\$110,173
2016	MOLALLA AVE	PEARL ST	MT HOOD ST	A	AC	MICROSURFACING OR CHIP SEAL	63.39	73.47	\$4.00	8,357	\$34,767	\$144,940
2016	SINGER HILL RD	7TH ST	10TH ST	A	AC/AC	MICROSURFACING OR CHIP SEAL	69.68	78.79	\$4.00	2,430	\$10,108	\$155,048
2016	3RD ST	MCLOUGHLIN PROMENADE	HIGH ST	R	AC	SLURRY SEAL	69.58	78.70	\$1.40	516	\$751	\$155,798
2016	3RD ST	HIGH ST	CENTER ST	R	AC	SLURRY SEAL	65.05	74.85	\$1.40	1,022	\$1,488	\$157,287
2016	6TH ST	MCLOUGHLIN BLVD	MAIN ST	R	AC	SLURRY SEAL	69.19	78.37	\$1.40	995	\$1,449	\$158,735
2016	6TH ST	MCLOUGHLIN PROMENADE	HIGH ST	R	AC	SLURRY SEAL	61.06	71.58	\$1.40	486	\$708	\$159,443
2016	8TH ST	CENTER ST	WASHINGTON ST	R	AC	SLURRY SEAL	68.16	77.49	\$1.40	716	\$1,042	\$160,485
2016	10TH ST	WASHINGTON ST	MADISON ST	R	AC	SLURRY SEAL	66.09	75.72	\$1.40	3,351	\$4,879	\$165,364
2016	11TH ST	MAIN ST	RR TRACKS	R	AC	SLURRY SEAL	69.19	78.37	\$1.40	510	\$743	\$166,107
2016	11TH ST	RR TRACKS	WASHINGTON ST	R	AC	SLURRY SEAL	60.88	71.44	\$1.40	1,583	\$2,305	\$168,412
2016	11TH ST	TAYLOR ST	100 FT SE. OF TAYLOR ST	R	ST	SLURRY SEAL	63.68	100.00	\$1.40	183	\$267	\$168,679
2016	16TH ST	MAIN ST	RR TRACKS	R	AC	SLURRY SEAL	67.12	76.60	\$1.40	922	\$1,342	\$170,021
2016	ALDEN ST	DEAD END S. (OFF CASCADE)	DEAD END (N)	R	AC	SLURRY SEAL	64.18	74.13	\$1.40	222	\$323	\$170,344
2016	ALDERWOOD PL	HARTKE LOOP	HARTKE LOOP	R	AC	SLURRY SEAL	62.98	73.13	\$1.40	3,292	\$4,794	\$175,138
2016	BARCLAY AVE	CHERRY AV	BRIGHTON AV	R	AC	SLURRY SEAL	68.54	77.81	\$1.40	1,970	\$2,868	\$178,006
2016	FREDERICK ST	BEG OF PAVE (N OF CLEAR)	CLEVELAND ST	R	AC	SLURRY SEAL	68.84	78.07	\$1.40	453	\$660	\$178,666
2016	GAIN ST	HARLEY AVE	S. FRONT ST	R	AC	SLURRY SEAL	69.58	78.71	\$1.40	843	\$1,227	\$179,893
2016	GALES LN	MOLALLA AV	END	R	AC	SLURRY SEAL	69.88	78.96	\$1.40	1,325	\$1,929	\$181,822
2016	HILDA ST	MOLALLA AV	200 FT E. OF MOLALLA AV	R	AC	SLURRY SEAL	69.61	78.73	\$1.40	622	\$906	\$182,728
2016	UMBER VIEW LN	TRAIL DR	SUMMER VIEW LN	R	AC	SLURRY SEAL	61.67	72.07	\$1.40	247	\$360	\$183,088
2016	LINCOLN ST	DIVISION ST	9TH ST	R	AC	SLURRY SEAL	60.37	71.04	\$1.40	687	\$1,000	\$184,088
2016	LONGSTANDING CT	SOUTH END RD	CUL DE SAC	R	AC	SLURRY SEAL	62.98	73.14	\$1.40	1,870	\$2,723	\$186,811
2016	MONROE ST	DEAD END S	HOUSE #309	R	AC	SLURRY SEAL	62.63	72.85	\$1.40	1,378	\$2,006	\$188,817
2016	MYRTLE ST	PEARL ST	STH END	R	AC/AC	SLURRY SEAL	67.51	76.93	\$1.40	467	\$679	\$189,496
2016	POLK ST	12TH ST	10TH ST	R	AC	SLURRY SEAL	65.67	75.37	\$1.40	1,561	\$2,273	\$191,769
2016	PROMONTORY AVE	BRIGHTON AV	END	R	AC	SLURRY SEAL	69.26	78.43	\$1.40	268	\$391	\$192,160
2016	ROSEBERY AVE	100 FT E OF CARAVATTA CT	WASSAIL LN	R	AC/AC	SLURRY SEAL	68.71	77.96	\$1.40	2,841	\$4,136	\$196,296
2016	SUMMIT ST	BRIGHTON AV	JERSEY AV	R	AC	SLURRY SEAL	69.20	78.38	\$1.40	2,640	\$3,844	\$200,140
2016	VAN BUREN ST	6TH ST	DEAD END (N)	R	AC	SLURRY SEAL	60.67	71.27	\$1.40	316	\$459	\$200,600
2016	VAN BUREN ST	54' E/O 8TH ST	9TH ST	R	AC	SLURRY SEAL	67.67	77.06	\$1.40	689	\$1,003	\$201,603
2016	WARNER ST	MOLALLA AV	PROSPECT ST	R	AC/AC	SLURRY SEAL	62.51	72.75	\$1.40	720	\$1,048	\$202,651
2016	WARNER MILNE RD	MOLALLA AV	PIZZA HUT DRIVEWAY	R	AC	SLURRY SEAL	62.38	72.65	\$1.40	620	\$903	\$203,554
2016	WASHINGTON ST	DEAD END S. OF 2ND	2ND ST	R	AC	SLURRY SEAL	69.57	78.70	\$1.40	836	\$1,217	<b>\$204,770</b>
2017	CANEMAH RD	WARNER-PARROTT RD	A.V. DAVIS RD	C	AC/AC	MICROSURFACING OR CHIP SEAL	82.20	89.46	\$4.00	2,912	\$12,598	\$12,598

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2017	CLACKAMAS RIVER DR	100' W. OF CITY LIMITS	CITY LIMITS	A	AC	MICROSURFACING OR CHIP SEAL	77.95	85.94	\$4.00	233	\$1,009	\$13,608
2017	CENTRAL POINT RD	PARTLOW RD	100 FT. S. OF ATLANTA DR	C	AC/AC	MICROSURFACING OR CHIP SEAL	83.37	90.39	\$4.00	3,307	\$14,306	\$27,914
2017	MEYERS RD	BEAVER CREEK RD	EMERSON CT	A	AC	MICROSURFACING OR CHIP SEAL	74.98	83.39	\$4.00	1,713	\$7,411	\$35,325
2017	MEYERS RD	EMERSON CT	100 FT W. OF SOPHIA CT	A	AC	MICROSURFACING OR CHIP SEAL	78.22	86.17	\$4.00	2,037	\$8,811	\$44,136
2017	MEYERS RD	100 FT W. OF SOPHIA CT	HIGH SCHOOL AVE	A	AC	MICROSURFACING OR CHIP SEAL	69.35	78.51	\$4.00	11,020	\$47,676	\$91,812
2017	S HIGH ST	S 2ND ST	POLE # 322	A	AC	MICROSURFACING OR CHIP SEAL	75.41	83.75	\$4.00	1,213	\$5,249	\$97,062
2017	WARNER PARROTT RD	PVMNT CHG 30'W/O POLE # 677	LELAND RD (S.)	A	AC/AC	MICROSURFACING OR CHIP SEAL	87.26	93.33	\$4.00	4,673	\$20,219	\$117,281
2017	CLACKAMAS RIVER DR	500' N. OF FORSCYTHE RD	100' W. OF CITY LIMITS	A	AC	MICROSURFACING OR CHIP SEAL	63.49	73.56	\$4.00	2,753	\$11,912	\$129,193
2017	CENTRAL POINT RD	PARRISH RD	WHITE LN	C	AC	MICROSURFACING OR CHIP SEAL	66.62	76.17	\$4.00	1,644	\$7,113	\$136,305
2017	HOLMES LN	PROSPECT ST	MOLALLA AVE	C	AC	MICROSURFACING OR CHIP SEAL	68.77	78.01	\$4.00	1,283	\$5,549	\$141,854
2017	MOLALLA AVE	S. LAZY CREEK LN	OREGON CITY BY PASS	A	AC	MICROSURFACING OR CHIP SEAL	67.71	77.10	\$4.00	4,373	\$18,921	\$160,775
2017	TAYLOR ST	MOLALLA AV	9TH ST	C	AC/AC	MICROSURFACING OR CHIP SEAL	66.62	76.17	\$4.00	3,093	\$13,383	\$174,158
2017	TELFORD RD	OGDEN DR	PARK DR	C	AC	MICROSURFACING OR CHIP SEAL	67.61	77.02	\$4.00	4,812	\$20,819	\$194,977
2017	TELFORD RD	PARK DR	HOLMES LN	C	AC	MICROSURFACING OR CHIP SEAL	69.74	78.85	\$4.00	5,208	\$22,532	\$217,509
2017	LAFAYETTE AVE	MADRONA DR	LAWTON RD	C	AC	SLURRY SEAL	80.51	88.08	\$1.40	519	\$786	\$218,295
2017	11TH ST	POLK ST	TAYLOR ST	R	AC	SLURRY SEAL	68.51	77.78	\$1.40	579	\$877	\$219,172
2017	ARMEL DR	CITY LIMITS (145' W. OF TRAIL DR)	TRAIL DR	R	AC	SLURRY SEAL	69.80	78.90	\$1.40	483	\$732	\$219,904
2017	ARMEL DR	TRAIL DR	100' E. OF TRAIL DR	R	AC	SLURRY SEAL	69.80	78.90	\$1.40	420	\$636	\$220,540
2017	BEEMER WAY	#14120 BEEMER WY	S. HUNTER AV	R	ST	SLURRY SEAL	68.79	100.00	\$1.40	606	\$918	\$221,458
2017	CHERRY AVE	HOLMES LN	PARK DR	R	AC	SLURRY SEAL	68.94	78.15	\$1.40	3,383	\$5,123	\$226,581
2017	COMINGER DR	LOT WHITCOMB DR	PEASE RD	R	AC	SLURRY SEAL	65.66	75.37	\$1.40	2,932	\$4,439	\$231,020
2017	COOK ST	OLD CUL DE SAC BULB	OAK TREE AV	R	AC	SLURRY SEAL	69.43	78.57	\$1.40	1,583	\$2,398	\$233,418
2017	FORTUNA CT	ROSEBERRY AV	CUL DE SAC	R	AC/AC	SLURRY SEAL	69.73	78.84	\$1.40	2,177	\$3,296	\$236,714
2017	GILMAN DR	DIVISION ST	TRILLIUM AV	R	AC	SLURRY SEAL	67.91	77.27	\$1.40	2,117	\$3,205	\$239,919
2017	HOMESTEAD DR	100' S OF PEBBLE BEACH	CITY LIMITS (S)	R	AC	SLURRY SEAL	69.69	78.80	\$1.40	2,256	\$3,415	\$243,334
2017	OAK ST	EAST ST	TERRACE AV	R	AC/AC	SLURRY SEAL	69.61	78.73	\$1.40	249	\$378	\$243,712
2017	CHERRY AVE	PARK DR	BARCLAY AV	R	AC	SLURRY w/ STRUCT SPOT REPAIR	62.17	72.48	\$4.83	2,293	\$11,981	\$255,692
2017	CLACKAMETTE DR	PVMT CHG @ HISTORIC ELM	BEGIN PARKING LOT	R	AC/AC	SLURRY w/ STRUCT SPOT REPAIR	65.01	74.81	\$4.83	3,776	\$19,725	\$275,418
2017	KAMM ST	WARNER ST	END	R	AC	SLURRY w/ STRUCT SPOT REPAIR	67.35	76.80	\$4.83	1,214	\$6,342	\$281,759
2017	OTTER LN	HILLTOP AV	END	R	AC	SLURRY w/ STRUCT SPOT REPAIR	68.55	77.82	\$4.83	1,191	\$6,223	<b>\$287,982</b>
2018	12TH ST	MCLOUGHLIN BLVD	MAIN ST	C	AC	MICROSURFACING OR CHIP SEAL	82.80	89.94	\$4.00	576	\$2,592	\$2,592
2018	LELAND RD	WARNER-MILNE RD	PVMNT CHG @ # 18763	A	AC/AC	MICROSURFACING OR CHIP SEAL	89.08	94.59	\$4.00	3,003	\$13,510	\$16,102
2018	LELAND RD	ONE LOT N/O WHITCOMB	MEYERS RD	A	AC/AC	MICROSURFACING OR CHIP SEAL	87.33	93.37	\$4.00	3,067	\$13,798	\$29,900
2018	MOLALLA AVE	TAYLOR ST/7TH ST	DIVISION ST	A	AC	MICROSURFACING OR CHIP SEAL	84.39	91.19	\$4.00	970	\$4,365	\$34,266
2018	WASHINGTON ST	13TH ST	14TH ST	A	AC	MICROSURFACING OR CHIP SEAL	78.44	86.35	\$4.00	1,409	\$6,339	\$40,605
2018	WASHINGTON ST	14TH ST	15TH ST	A	AC	MICROSURFACING OR CHIP SEAL	77.25	85.34	\$4.00	1,853	\$8,339	\$48,944
2018	WASHINGTON ST	15TH ST	16TH ST	A	AC	MICROSURFACING OR CHIP SEAL	76.00	84.27	\$4.00	1,449	\$6,519	\$55,463
2018	WASHINGTON ST	16TH ST	ABERNETHY RD	A	AC	MICROSURFACING OR CHIP SEAL	67.07	76.55	\$4.00	2,773	\$12,478	\$67,942
2018	7TH ST	HIGH ST	SINGER HILL RD	C	AC	MICROSURFACING OR CHIP SEAL	69.98	79.05	\$4.00	404	\$1,819	\$69,761
2018	7TH ST	SINGER HILL	WASHINGTON ST	A	AC	MICROSURFACING OR CHIP SEAL	68.78	78.02	\$4.00	1,844	\$8,299	\$78,060
2018	7TH ST	WASHINGTON ST	MADISON ST	A	AC	MICROSURFACING OR CHIP SEAL	68.78	78.02	\$4.00	3,778	\$16,998	\$95,058
2018	15TH ST	HARRISON ST	POLK ST	C	AC/AC	MICROSURFACING OR CHIP SEAL	68.63	77.89	\$4.00	1,156	\$5,201	\$100,259
2018	ELECTRIC ST	CHARMAN ST	LINN AV	C	AC	MICROSURFACING OR CHIP SEAL	67.58	76.99	\$4.00	1,042	\$4,689	\$104,948
2018	LINN AVE	WARNER-MILNE RD	A. V. DAVIS RD	A	AC	MICROSURFACING OR CHIP SEAL	68.23	77.54	\$4.00	6,904	\$31,066	\$136,015
2018	LINN AVE	A. V. DAVIS RD	HOLMES LN	A	AC	MICROSURFACING OR CHIP SEAL	67.93	77.29	\$4.00	2,606	\$11,724	\$147,738
2018	LINN AVE	HOLMES LN	PARK DR	A	AC	MICROSURFACING OR CHIP SEAL	68.29	77.60	\$4.00	3,500	\$15,748	\$163,486
2018	TRILLIUM PARK DR	DAVIS RD	SWORDFERN CT	R	AC	SLURRY w/ STRUCT SPOT REPAIR	68.42	77.71	\$4.83	2,894	\$15,726	\$179,212
2018	BJERKE ST	JOSEPHINE ST	NETZEL ST	R	AC	SLURRY SEAL	69.38	78.53	\$1.40	846	\$1,332	\$180,544
2018	APPERSON BLVD	GAIN ST	LA RAE	C	ST	SLURRY SEAL	69.81	100.00	\$1.40	3,786	\$5,962	\$186,507

City of Oregon City  
Five Year Pavement Maintenance Plan Update  
PMUF Preventative Maintenance Project List  
2015 to 2019  
July 8, 2015

PM Year	Street Name	Beginning Location	End Location	FC	Existing Surface Type	Suggested Treatment Type	PCI Untreated	PCI Treated	Treatment Cost (\$/yd <sup>2</sup> )	Area Treated (yd <sup>2</sup> )	Estimated Construction Cost	Yearly Cumulative Estimated Cost
2018	APPERSON BLVD	LA RAE	S. MELINDA ST	C	ST	SLURRY SEAL	69.17	100.00	\$1.40	1,789	\$2,817	\$189,324
2018	APPERSON BLVD	HOLCOMB RD	GAIN ST	C	ST	SLURRY SEAL	68.84	100.00	\$1.40	5,214	\$8,211	\$197,535
2019	7TH ST	HARRISON ST	MOLALLA AVE	A	AC/AC	MICROSURFACING OR CHIP SEAL	87.80	93.71	\$4.00	1,369	\$6,406	\$6,406
2019	LELAND RD	PVMNT CHG @ # 18763	S. PEASE RD	A	AC/AC	MICROSURFACING OR CHIP SEAL	87.93	93.80	\$4.00	1,911	\$8,943	\$15,349
2019	SOUTH END RD	PINEWOOD CT	WARNER PARROTT RD	A	AC/AC	MICROSURFACING OR CHIP SEAL	82.40	89.63	\$4.00	5,693	\$26,642	\$41,990
2019	SOUTH END RD	DEERBROOK RD	PINEWOOD CT	A	AC/AC	MICROSURFACING OR CHIP SEAL	60.41	71.07	\$4.00	2,289	\$10,711	\$52,701
2019	14TH ST	95 FT W/O WASHINGTON ST	WASHINGTON ST	C	AC	MICROSURFACING OR CHIP SEAL	84.07	90.94	\$4.00	431	\$2,017	\$54,718
2019	BARKER AVE	VINE ST	TELFORD RD	C	AC/AC	MICROSURFACING OR CHIP SEAL	79.55	87.28	\$4.00	2,297	\$10,751	\$65,469
2019	BARKER AVE	SOUTH END RD	VINE ST	C	AC	MICROSURFACING OR CHIP SEAL	69.89	78.97	\$4.00	4,810	\$22,508	\$87,977
2019	RAILROAD AVE	6TH ST	7TH ST	C	AC	MICROSURFACING OR CHIP SEAL	60.87	71.43	\$4.00	1,058	\$4,950	\$92,927
2019	HIGH SCHOOL AVE	GLEN OAK RD	MEYERS RD	C	AC	MICROSURFACING OR CHIP SEAL	67.20	76.67	\$4.00	1,723	\$8,064	\$100,991
2019	HOLMES LN	MCCARVER AV	LINN AV	C	AC/AC	MICROSURFACING OR CHIP SEAL	68.57	77.83	\$4.00	2,157	\$10,092	\$111,083
2019	8TH ST	END	CENTER ST	R	AC	SLURRY SEAL	69.83	78.92	\$1.40	509	\$834	\$111,917
2019	13TH ST	MCLOUGHLIN BLVD	MAIN ST	R	AC/AC	SLURRY SEAL	69.44	78.59	\$1.40	596	\$975	\$112,893
2019	16TH ST	WASHINGTON ST	RR TRACKS	R	AC	SLURRY SEAL	69.61	78.73	\$1.40	569	\$933	\$113,825
2019	17TH ST	DEAD END GATE	WASHINGTON	R	AC	SLURRY SEAL	69.33	78.49	\$1.40	746	\$1,221	\$115,046
2019	A ST	S. APPERSON BLVD	S. GAIN ST	R	AC	SLURRY SEAL	69.22	78.40	\$1.40	1,814	\$2,971	\$118,018
2019	BEAVERCREEK WAY	BEAVERCREEK RD	MOLALLA AVE	R	AC/AC	SLURRY SEAL	68.81	78.04	\$1.40	1,724	\$2,824	\$120,842
2019	CLEAR ST	BEG PAVE (E OF FREDRICK)	HIRAM AVE	R	AC	SLURRY SEAL	68.65	77.91	\$1.40	164	\$269	\$121,111
2019	CLEVELAND ST	S. HUNTER AV	S. SWAN AV	R	AC	SLURRY SEAL	69.41	78.56	\$1.40	1,260	\$2,064	\$123,175
2019	ELLA ST	LINN AV	LEONARD ST	R	AC	SLURRY SEAL	69.25	78.42	\$1.40	1,193	\$1,955	\$125,130
2019	HARRISON ST	16TH ST	17TH ST	R	AC/AC	SLURRY SEAL	68.55	77.82	\$1.40	1,338	\$2,191	\$127,321
2019	HARRISON ST	17TH ST	18TH ST	R	AC	SLURRY SEAL	68.42	77.71	\$1.40	1,498	\$2,453	\$129,774
2019	JESSIE AVE	50' E OF JESSIE CT	FRONTIER PKWY	R	AC	SLURRY SEAL	69.48	78.62	\$1.40	316	\$518	\$130,291
2019	JOSEPH WAY	DEAD END S.REDDAWAY	FRIARS LN	R	AC	SLURRY SEAL	68.22	77.54	\$1.40	1,784	\$2,922	\$133,213
2019	KING RD	WARNER-PARROTT RD	SCHOOL PARKING LOT	R	AC	SLURRY SEAL	69.84	78.93	\$1.40	869	\$1,423	\$134,636
2019	MADISON ST	5TH ST	6TH ST	R	AC	SLURRY SEAL	69.12	78.31	\$1.40	800	\$1,310	\$135,946
2019	MELINDA ST	S. CLACKAMAS RIVER DR	APPERSON BLVD	R	AC	SLURRY SEAL	68.89	78.12	\$1.40	807	\$1,321	\$137,268
2019	MOCCASIN WAY	HOUSE #13227	DEAD END E. OF REDHAWK DR	R	AC	SLURRY SEAL	68.58	77.84	\$1.40	1,137	\$1,862	\$139,129
2019	SUGARPINE ST	WHITEHORSE CT	100' E. OF YELLOW WOOD RD	R	AC	SLURRY SEAL	69.50	78.64	\$1.40	2,326	\$3,810	\$142,940
2019	TERRACE AVE	OAK ST	3RD ST	R	AC/AC	SLURRY SEAL	69.21	78.39	\$1.40	1,032	\$1,689	\$144,629
2019	TODD KELLI WAY	121' SW OF LEGATO DR	LEGATO DR	R	AC	SLURRY SEAL	68.85	78.07	\$1.40	390	\$639	\$145,268
2019	WOODGLEN CT	WOODGLEN WAY	CUL DE SAC	R	AC	SLURRY SEAL	69.14	78.32	\$1.40	719	\$1,177	\$146,444
2019	BEAVER LN	HILLTOP AV	END	R	AC	SLURRY w/ STRUCT SPOT REPAIR	66.13	75.76	\$4.83	1,440	\$8,137	\$154,581
2019	CANEMAH CT	TELFORD RD	CANEMAH RD	R	AC	SLURRY w/ STRUCT SPOT REPAIR	67.21	76.67	\$4.83	6,113	\$34,542	\$189,123
2019	FOX LN	HILLTOP AV	WARNER-MILNE RD	R	AC	SLURRY w/ STRUCT SPOT REPAIR	61.70	72.10	\$4.83	1,013	\$5,726	\$194,848
2019	FRONT AVE	S. CLEVELAND ST	S. LA RAE ST	R	ST	SLURRY w/ STRUCT SPOT REPAIR	67.11	100.00	\$4.83	2,560	\$14,465	\$209,313
2019	HILLTOP AVE	MOLALLA AV	OTTER LN	R	AC	SLURRY w/ STRUCT SPOT REPAIR	67.23	76.69	\$4.83	3,173	\$17,931	\$227,244
2019	HILLTOP AVE	OTTER LN	END	R	AC	SLURRY w/ STRUCT SPOT REPAIR	68.48	77.76	\$4.83	1,476	\$8,338	\$235,582
2019	RAILROAD AVE	7TH ST	9TH ST	R	AC	SLURRY w/ STRUCT SPOT REPAIR	69.13	78.32	\$4.83	1,715	\$9,692	\$245,274





## **APPENDIX F**

### **Additional PMUF Rehabilitation Projects List**

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City of Oregon City  
Five Year Pavement Maintenance Plan Update  
Additional Street Rehabilitation Projects To Consider  
July 8, 2015

Street Name	Beginning Location	End Location	Pavement Classification Index (PCI) Untreated	Street Functional Classification (R=Residential, C=Collector, A=Arterial)	Existing Surface Type	Suggested Treatment Type	Treatment Cost (\$/yd2)	Area Treated (yd²)	Estimated Construction Cost	Roadway Scoping Considerations	Approximate No. of Street Corners Requiring ADA Curb Ramps	Utility Scoping Considerations
STREET REHABILITATION PROJECTS TO CONSIDER SHOULD BUDGET ALLOW:												
6TH ST	HIGH ST	WASHINGTON ST	-	R	AC	2" Mill & Inlay	22.61	3,480.0	\$78,682.80	-	4	-
6TH ST	WASHINGTON ST	JOHN ADAMS ST	-	R	AC	2" Mill & Inlay	22.61	888.9	\$20,097.78	Complete after library project.	0	-
6TH ST	JEFFERSON ST	MADISON ST	-	R	AC	2" Mill & Inlay	22.61	888.9	\$20,097.78	Complete after library project.	4	-
MAIN ST	15TH ST	17TH ST	23.30	C	AC	2" Mill & Inlay	22.61	3,480.0	\$78,682.80	-	4	-
MAIN ST	17TH ST	END/O C&G N/O 205 UNDERPASS	19.37	C	AC	2" Mill & Inlay	22.61	5,385.6	\$121,767.41	-	3	-
CENTRAL POINT RD	WHITE LN	200 FT S. OF SKELLENGER WY	41.14	C	AC	2" Mill & 4" Inlay	31.71	2,011.8	\$63,793.47	-	4	-
CENTRAL POINT RD	200 FT S. OF SKELLENGER WY	200 FT S. OF HAZELDELL AVE	23.37	C	AC	CTB & AC	51.53	2,397.8	\$123,557.60	-	2	Check utility depths prior to CTB.
CENTRAL POINT RD	200 FT S. OF HAZELDELL AVE	PARTLOW RD	46.18	C	AC	2" Mill & 4" Inlay	31.71	4,106.7	\$130,222.41	-	5	-
VAN BUREN ST	7TH ST	54' E/O 8TH ST	46.63	R	PCC	2 INCH OVERLAY	19.47	1,055.6	\$20,551.67	-	4	-
MONROE ST	8TH ST	10TH ST	40.21	R	AC	2" Mill & Inlay	22.61	2,773.3	\$62,705.07	-	8	-
9TH ST	MCCLOUGHLIN BLVD	RAILROAD AV	41.94	R	AC	2" Mill & Inlay	22.61	2,165.8	\$48,968.24	-	3	-
16TH ST	END W. OF JACKSON ST	DIVISION ST	42.65	R	AC	2" Mill & Inlay	22.61	6,933.3	\$156,762.67	-	23	-
JOHN ADAMS ST	8TH ST	10TH ST	43.42	R	AC	2" Mill & Inlay	22.61	2,680.0	\$60,594.80	-	6	-
11TH ST	HARRISON ST	POLK ST	42.00	R	AC	2" Mill & Inlay	22.61	650.0	\$14,696.50	-	4	-
JQ ADAMS ST	12TH ST	14TH ST	45.72	R	AC	2" Mill & Inlay	22.61	2,684.4	\$60,695.29	-	6	-
10TH ST	POLK ST	TAYLOR ST	45.59	R	AC	2" Mill & Inlay	22.61	798.0	\$18,042.78	-	8	-
5TH AVE	MILLER ST	SOUTH END RD	13.41	R	AC	CTB & AC	51.53	3,615.3	\$186,298.12	-	0	Check utility depths prior to CTB.
MILLER ST	4TH AV	5TH AV	15.54	R	AC	CTB & AC	51.53	592.9	\$30,551.56	-	0	Check utility depths prior to CTB.
18TH ST	ANCHOR WAY	JUNCTION	0.00	C	AC	Reconstruct A/C	79.28	648.9	\$51,443.91	-	0	Check utility depths prior to reconstruct.
JQ ADAMS ST	9TH ST	12TH ST	48.72	R	AC	2" Mill & Inlay	22.61	3,955.6	\$89,435.11	-	8	-