



Molalla City Council – Meeting Agenda
Meeting located at: Molalla Adult Center
315 Kennel Ave, Molalla, OR 97038
August 9, 2017 – REVISED

WORK SESSION BEFORE MEETING 6:30PM

Business meeting will begin at 7:00PM. The Council has adopted Public Participation Rules. Public comment cards are available at the entry desk. Request to speak must be turned into to the Mayor prior to the start of the regular Council meeting.

Executive Session : None

1. **CALL TO ORDER – 1,782nd Regular Meeting**
 - A. Call the meeting to order – Mayor Thompson
 - B. Flag Salute and Roll Call

2. **COMMUNICATIONS, PRESENTATIONS & PUBLIC COMMENT**
 - A. Minutes: July 26, 2017
 - B. Library Minutes – Informational Only

3. **CONTINUED BUSINESS**
4. **NEW BUSINESS**
 - A. Utilities Rate Study Discussion and Presentation – Fisher/Donovan
 - B. Street Maintenance Fee Discussion - Fisher
 - C. Contract Award – PDG/Dyer Partnership for Wastewater Facility and Infrastructure Master Plan (16-10) – Fisher
 - D. Contract Award – PDG/Dyer Partnership for TMDL Implementation Plan (17-14) – Fisher
 - E. ***Contract Award - Waste Water Treatment Plant Headworks Rebuild – Fisher***

5. **PUBLIC HEARING**
6. **RESOLUTIONS**
 - A. Resolution 2017-11: A Resolution Initiating Street Vacation Proceedings for Shirley Street - Huff

7. **ORDINANCES**

8. **REPORTS AND ANNOUNCEMENTS**
 - A. Staff and Council Discussion – Huff
 1. Upcoming Meetings with Council Discussion for:
 - Visioning Project Process, Council Goal Setting and Continued Professional Training
 - League of Oregon Cities Conference – Registrations need to be turned into Cramer this week to meet the deadlines.
 2. September 13, 2017 Meeting Reset to September 20, 2017 – Discussion/Approval

9. **EXECUTIVE SESSION**
10. **ADJOURNMENT**

Minutes of the Molalla City Council Regular Meeting
Molalla Adult Center
315 Kennel Ave. Molalla, OR 97038
Wednesday, July 26, 2017

ATTENDANCE: Mayor Jimmy Thompson, Absent; Councilor Leota Childress, Present; Councilor Glen Boreth, Present; Councilor Elizabeth Klein, Present; Councilor Keith Swigart, Present; Councilor DeLise Palumbo, Present; Councilor Cindy Dragowsky, Absent.

STAFF IN ATTENDANCE: Dan Huff, City Manager, Present; Gerald Fisher, Public Works Director, Present; Chauncey Seifired, Present.

COMMUNICATIONS, PRESENTATIONS & PUBLIC COMMENT

Minutes – Boreth made the motion to approve the June 28, 2017. Swigart seconded. Motion carried 5-0.

Susan Hansen of Bearcreek Recovery of Molalla read the following vierbetim:

July 26, 2017

I sent new members of this Council detailed background information about Molalla's wastewater violations and the Bear Creek Recovery lawsuit. Councilor Palumbo's response was disturbing: she claimed the Council is committed to working with DEQ and believes that only one fine since 2015 means all is well. Are you Councilors fully informed about ongoing violations and the costs generated for legal representation for facility problems? Have you carefully read the draft DEQ Mutual Agreement and Order, which is a legally enforceable document presented when a city fails to comply and violations mount?

Councilor Palumbo is woefully misinformed about the growing list of penalties. The March draft MAO lists projected fines of \$3,900 for Oct. non-permitted discharge; \$5,150 for exceeding turbidity and bacteria limits in recycled water; \$1,350 for exceeding Total Suspended Solids limits; and \$1,725 for failing to comply with TMDL planning and implementation - for a total Civil Penalty of \$12,125. Those penalties don't reflect the potential fines for 24 days of May/June non-permitted discharge into the Molalla River. If a MAO isn't reached, a DEQ rep noted that Molalla will face "substantial" fines, since DEQ assesses higher penalties as violations multiply.

There are two kinds of lawyers: one quickly works for a mitigated settlement; the other promotes whatever the client wants and gets paid huge fees, win or lose. From the BCR lawsuit and reading endless excuse letters written by Molalla's lawyers, it is clear Molalla is not being guided to swift mitigation.

Molalla's most laughable legal letters claim multiple non-permitted discharges are not violations because of too much rain. The actual reasons for the violations, noted over and over by DEQ and BCR, are: Molalla's failure to remove adequate amounts of biosolids; failure to add storage capacity to match growth; failure to fix leaky pipes that allow infiltration; failure to have adequate discharge sites; and failure to plan, fund and implement facility upgrades in a timely manner. The City has also failed to prove whether or not the lagoons are contaminating groundwater and wells.

Modern wastewater facilities use innovative processes and natural treatment systems. A tour of Wilsonville's recently upgraded wastewater plant showed sewage processed in about 12 hours into water clean and cool enough for year around discharge into the Willamette River; sewage lagoons and chlorine are not needed. Exceptional Class A biosolids are produced via 550 degree ovens and the dry biosolids are immediately trucked away, safe enough for home fertilizer.

Competent and honest officials in Oregon admit facility failures, then plan and fund upgrades. It's complex and expensive; sewer rates in many places have risen to \$70 to over \$100/month. Squandering money on lawyers who claim Molalla is so "special" it needs to violate with no consequences isn't a solution, because responsible cities have upgraded to comply with their permits.

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If Molalla was not constantly wasting DEQ staff time and abusing water resources, the easy to refute, whiny excuses coming from City staff and lawyers would be funny. Your rate payers won't be laughing when they are faced with financing costly upgrades and realize that you have diverted their public money to lawyers who stall with indefensible excuses. If you are really committed to working with DEQ, why doesn't this Council have a "vision" for your highly paid City Manager and Public Works Director to lead you, with DEQ's technical help, to swift compliance solutions?

Susan Hansen
Bear Creek Recovery

CONTINUED BUSINESS

Drive To Zero Letter of Support was reviewed as presented in the packet. Palumbo made the motion to approve the letter and it be sent to the Drive To Zero Program. Swigart seconded. Motion carried 5-0.

PUBLIC HEARING

Boreth made the motion to exit out of regular session and enter into a public hearing for the Re-designation of Molalla's Enterprise Zone. Childress seconded. Motion carried 5-0.

President Klein called for testimony for those opposed. Mike Towner, board President of the Molalla Rural Fire Protection District #73, stated the MRFD understands the benefits to the city and the community, but is opposed to the re-designation because the adverse effect on the Fire District. The implementation of the Urban Renewal District and other service district that are requesting funding the enterprise zone can only add to the problem of an increase of service need without contributing financially to the solution. It is for this reason the Molalla Fire District can not support the formation of any such zone or district.

No testimony was received for infavor or neutral. Boreth made the motion to close the public hearing and enter into regular session. Swigart seconded. Motion carried 5-0.

NEW BUSINESS

Re-designation of Molalla's Enterprise Zone – After the public hearing the Council addressed the re-designation. Huff addressed Mr. Towners concerns regarding the MRFD. They are a very large district and anytime a new district is formed it does impact them. If someone comes in and applies to build, the county could give them a break on taxes, which would impact both them and the city for a limited time between 3-5 years. Enterprise Zones are created to boost industry and jobs. Palumbo stated based on the documents it would be a minimal impact. Boreth stated most cities have enterprise zones and some cities offer huge incentives, such as Hillsboro. If we don't do this and we don't have an enterprise zone for potential builders to consider, they are more likely to go somewhere else. Klein asked that staff confirm the boundries of the enterprise zone map and that it corresponds with the current code. Boreth made the

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motion to reauthorize the City of Molalla Enterprise Zone with confirmation of the zones included on the map.

REPORTS AND ANNOUNCEMENTS

Seifried reported that the 2016/2017 audit will begin next week and staff is still working on the utility billing audit and we received our first marijuana tax check from the state in the amount of \$16,000. We do not know when the next disbursement will be or how much. It will go into a designated restricted police fund. The city budgeted for \$100 because we did not know how much we would receive. We exceeded that budgeted amount.

Fisher provided the following list of projects to the Council:

July 26, 2017

TO: Dan Huff, City Manager

FROM: Gerald Fisher, Public Works Director

RE: Public and Private Project Update for Public Works

Dan,

The following is a list of Public and private projects that Public Works is working on at this time:

Public Capital Projects Underway

1. 15-02 2017 Waterline Improvements – Design is complete and drafting of contracts and specifications underway. This project will replace the waterlines on Metzler Avenue (Main-7th), 4th Street (Metzler-Hart), 3rd Street (Berkley-Lola), and Faurie Street (Frances-Miller).
2. 15-06 Water Right Certificate – Water rights for the Molalla River intake are complete and an extension to transfer water rights from Trout Creek to Molalla River has been issued by Oregon Water Resource. Staff will budget for the final phase of this project in FY 18-19.
3. 15-07 City Hall Remodel – Phase 1 internal remodel is complete and storm system in the parking area is operational. Building front improvements to the Police entrance will be completed this summer.
4. 15-11 Lagoon Leak Test – City completed an additional lagoon leak test earlier this week and the consultant is preparing a report on the results. Modifications to the testing process have made this test numbers more accurate than the test performed last year. Additional improvements will be made in the future to automate measurements for better accuracy.
5. 16-01 Molalla Ave – Staff is waiting for a final report from the contractor so the project can be finalized and final payments made.
6. 16-05 Clark Park Partition – Once right of way vacation is completed near Shirley Street staff can move forward with the property line adjustment and property exchange with Molalla Buckaroo.
7. 16-07 Shops Facility Improvements – Consultant is preparing a 30% design and proposal documents for a CM/GC request for proposals. Anticipate construction completion in fall of 2018.
8. 16-08 Lola Ave Water and Sewer Improvements – Design underway for replacement of existing waterline and sewer on Lola Avenue from Main to 5th Street. Waterline replacement will take place in FY 17-18 and anticipate sewer replacement in FY 18-19.
9. 16-10 Wastewater Master Plan – Staff is reviewing proposal from consultant and anticipate project kick-off in late August.

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10. 16-11 Transportation Master Plan – Kickoff meeting held last week and consultant starting preliminary master planning work. Applications for Project Advisory Committee (PAC) to be posted to the website tomorrow and due date for applications on August 15th. Anticipate appointments to committee at the August 23rd Council meeting.
11. 16-15 I&I Project – Staff preparing a request for proposals to seal sanitary sewer manholes this summer. Review of video inspection reports continuing as time and staffing allows.
12. 17-02 Rate Study – Consultant is finalizing the rate study report. Report will be presented to the Council at the August 9th meeting.
13. 17-03 Fenton Ave CDBG – Staff to meet with Clackamas County later this week to proceed with HUD documentation and approval for project design and construction.
14. 17-04 OR 211 (213-Ona) – Project Kick-off meeting held this week and consultant working on surveying and preliminary design for ODOT design acceptance package approvals.
15. 17-05 Pavement Repairs – Repairs completed on Shaver Avenue, Mountain View Land, Cascade Lane, Homestead Place, Meadow Drive, Meadowlawn Place, Thunderbird Street, Toliver Road, Toliver Court, and Corral Court. Staff preparing second round of repairs for this summer.
16. 17-12 Clark Park Sidewalk Improvements – Design underway for sidewalk improvements on the west and south sides of Clark Park, ADA improvements at the intersection of Shirley and Cole, and parking improvements to the south parking area.

Public Capital Projects Not Started

17. TMDL Plan – This project will prepare a 5 year review and look ahead plan for DEQ review and approval.
18. WWTP Headworks Screen Rebuild – This project will replace worn equipment on the City's only headworks screen.
19. WWTP New Headworks Screen – This project will install a second screen adding capacity to the headworks.
20. WWTP Headworks Gantry Crane – This project will purchase and install a lift system to raise and lower gates at the headworks.
21. WWTP Transfer Pump – This project will purchase and install a new transfer pump allowing for redundancy and two back up pumps for system.
22. WTP New Trident 2MGD Filtration Plant – This project will design and construct a second 2 MGD plant doubling the City's capacity to produce drinking water.
23. WTP Chemical Feed and Telemetry Upgrades – This project will design and construct improvements to the chemical feed system in conjunction with the new filter system and update the plant telemetry systems.
24. WTP Security Fencing – This project will improve plant security fencing and gate.

Private Projects Underway

25. Stoneplace Apartments Phase 3 – Contractor completing last of the punchlist items for City, County, and state to receive project acceptance from Public Works. Anticipate completion this summer.
26. Rondel Court Apartments – Roadway improvements underway. Anticipate completion this summer.

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27. Bear Creek Subdivision – Construction of onsite and offsite improvements underway. Anticipate completion this fall.
28. Cash Ice Plant (Dixon Avenue) – Contractor completing last of punchlist items for City to receive project acceptance from Public Works. Anticipate completion this summer.
29. Stow Away Storage – Contractor completing last of punchlist items for City to receive project acceptance from Public Works. Anticipate completion this summer.
30. Molalla Redi-Mix Frontage Improvements – Preconstruction meeting scheduled for this week. Anticipate completion this fall.
31. Twin Meadow Subdivision – Preconstruction meeting complete. Anticipate issuing permit for construction this month and completion this winter.
32. W. Main Dental Clinic – Design for Hezzie Lane improvements pending. Anticipate completion this fall.

Staff is also working on several individual home construction project, pre-application projects for new developments, policy and procedure updates, and other improvements to the department. We also advertised this week for an Operations Supervisor position and first round of interviews to take place around the first of September. This position will oversee the operations of the Maintenance and Water Quality Division and assist the Public Works Director with budget and project delivery. Thanks and let me know if you have any questions.

Cc: Sadie Cramer, City Recorder

Transportation Advisory Committee Recruitment – Current recruitment is being done for this committee and it will be posted on the website and newspaper for volunteers. There will be 4 meetings over the year and ideally a committee of 8 to 10 people.

Cramer reported there will be two street vacation processes coming before Council in August for initiation by resolution and wanted to let Council know ahead of time. Also, a \$15,000 tourism grant was secured by the city for a new Native American Heritage Walk that will be worked on from now until the end of the year. Grand Ronde will be working with staff for accuracy, artistic input and other components of this project.

Upcoming Meetings with Council Discussion for:

- Council Goal Setting needs to be set. Huff asked each Councilor to send him dates.
- League of Oregon Cities Conference and Registration is Open
- Solar Eclipse Event – Fox Park on August 21, 2017 at 8:30am flyers in the packet.

Palumbo reported she is having discussion with the group trying to bring the Log Cabin back to Molalla and National Night Out is happening August 1st at Fox Park. She will be doing face painting at the event and invited everyone to attend.

Boreth asked staff about the upcoming eclipse events that will taking place and how it will effect small cities. Huff stated we are currently working with the Rotary and Chamber regarding their event application. There are reports from Marion County and they are gearing up heavily. We could get the overflow from larger events and we have been working with the since June and our expectations of the events. There are a number of things to consider. Cramer stated that contact has been made with them and

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we should have the application by the end of the week. Fisher stated the street lights will come on and go off after the eclipse. The lights are all on photo cells which are out of the city's control.

Childress reported that Klein, Cramer and herself attended a Visioning session at the Ford Family Foundation which was informative. A timeline for our visioning process has been developed and will be given to the Council once it is solidified. It will include listening session, incentives for completing survey's and data collection as we launch to do the area wide survey distribution. Out of the session we attended it was discussed that perhaps we should add another questions to the survey. "What 3 skills are you willing to contribute to the project?" So as we move forward on the visioning we can do a data base as we move along and tap into those resources if we need a carpenter or other type of skill set. This process will go through June of 2018.

ADJOURNMENT

Councilor Boreth then motioned, seconded by Councilor Swigart to adjourn the meeting. The motion passed unanimously. The meeting was adjourned at approximately 7:49pm.

Sadie Cramer, City Recorder

Jimmy Thompson, Mayor

Molalla Library Advisory Board

Meeting Date: 6-15-2017

Meeting brought to order by Kelly Andrews at 6:45 P.M.

Members Present: Mary Gilson, Angela Patton, Kelly Andrews, Valerie Coy

City Council Liaison: Cindy Dragowsky (excused)

Staff present: Director Diana Hadley

The minutes from the May meeting were approved as read.

- Director's Report: (See Diana if you didn't receive one.)
 - 1) Summer Reading is for all ages: children, teenagers, adults.
 - 2) Community Cook Book. If you have a recipe you would like to share, you can submit it electronically.
 - 3) RFID: by August, self check-out will be available.

The meeting was adjourned at 7:23 P.M. The next meeting will be held on July 20th at 6:45 P.M.

Submitted by Mary Gilson, Secretary

City Of Molalla

City Council Meeting



Agenda Category: New Business – Report

Subject: 2017 Utilities Rate Study

Recommendation: Council Review

Date of Meeting to be Presented: August 09, 2017

Fiscal Impact: None

Background:

This report is the end product of a 2 year project between staff and Donovan Enterprises, Inc (DEI). It began with a review of the City's master plans and preparation of a Capital Improvement Plan that was adopted by Council on September 09, 2016. Staff then worked with DEI to prepare a system development charge (SDC) methodology update which was adopted by Council on December 14, 2016. The final step was for staff to prepare a near term (5 Year) capital improvement plan and DEI to prepare a Utilities Rate Study to look at rate structure needs for water, sewer, and stormwater. Additionally, the report looked at the unfunded (non-SDC) portion of the transportation capital improvement plan. This report outlines the recommendation for utility rate increases and a possible new transportation capital improvement fee to complete identified City projects over the next 5 years. An overview presentation will be provided by DEI and both staff and DEI will be available to answer questions.

SUBMITTED BY: Gerald Fisher, Public Works Director
APPROVED BY: Dan Huff, City Manager

Presented by:



July

2017

Utilities Rate Study

Final Report

Prepared for:



Donovan Enterprises, Inc.
9600 SW Oak Street, Suite 335
Tigard, Oregon 97223-6596
☎ 503.517.0671
www.donovan-enterprises.com



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Utilities Rate Study

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Executive Summary

The City of Molalla is the sole provider of municipal utilities services to customers within the urban services boundary of the City. Revenues required to fund the delivery of these urban services are obtained from monthly user fees which are set by the City Council via its City charter authority. This study addresses two things; first, the revenue required from rates needed to support future operations and maintenance costs for the water, wastewater, and stormwater utilities along with a funding plan for capital needs identified in the City's capital improvement plans. Second, this study formulated a strategy for implementing a transportation capital projects fee. If implemented by the City Council, future revenues derived from this monthly user fee would be dedicated to fund streets and other transportation capital improvement projects

Monthly User Fees

With the active involvement of City staff, twenty year planning models were developed for this project; however, the focus for the rate study is the five year near-term forecast of fiscal 2017-18 through fiscal 2022-23. These financial models have been reviewed with the City as they were developed and will be provided to Molalla as a project deliverable enabling the City to make future updates.

The purpose of this study is to develop a cost of service-based methodology that will accurately determine the cost the city incurs to deliver municipal utilities services. The models developed for this project have been populated with adopted fiscal 2017-18 budgeted revenues and costs, estimated results for fiscal 2017, along with actuals for fiscal 2015 through 2016. During this study, the project team presented multiple rate scenarios to the City Staff for their consideration. These model runs simulated the current service levels (CSL) of the utilities, and sensitivity cases for a number of funding issues facing the City's utilities. The results of each model run were expressed in terms of the rate impacts on the average single family residential customer's monthly bill for each utility service. Over the near-term five year forecast horizon, we are projecting average annual increases in system revenue requirements as follows:

Water	2.86% per year
Wastewater.....	6.09% per year
Stormwater.....	3.50% per year

Transportation Capital Projects Fee

In 2016, the City reviewed its system development charge (SDC) methodology and schedule of charges for transportation SDCs. As part of that study, the City concluded it was facing a transportation funding gap. Over the next ten years, there was an identified need of \$21.7 million for transportation capital improvement projects. Out of this total needs assessment, the City estimated \$15.0 million could legally be funded from SDCs (i.e., growth). This left a funding gap of \$6.7 million. The only dedicated funding sources available to fund this gap are motor fuel taxes and PGE franchise fees. It is estimated that roughly 90% of these resources are dedicated to street maintenance and not capital projects funding. For fiscal 2017-18, the total budgeted receipts from these two sources is \$694,000. Assuming only ten percent of this total could be dedicated to capital projects funding, that amounts to \$69,400 per year.

City Staff and the rate study project team were tasked with identifying a new dedicated funding source that could fund the projected \$6.7 million. This effort resulted in the formulation of a monthly fee that would be added to all active water customers' bills within the City. Our analysis of fiscal 2017-18 budget and utility billing data indicate this transportation capital projects fee could be in the range of \$12.29 - \$18.28 per active account per month. The low end of the range assumes the City borrows (bonds) the

total revenue requirement of the program, and pledges the monthly rate revenues to pay the future debt service on the bonds. The high end of the range assumes a pay as you go strategy. A complete discussion of the rate making methodology for both scenarios is contained in the body of this report.

Conclusions

The schedules of utility rates and the proposed transportation capital projects fee shown above were developed through consultation with City staff and the members of the rate study project team. The study process included an evaluation of revenue requirements, cost of service, and rate design for the five year forecast (fiscal 2019 through fiscal 2023). The revenue requirements analysis determined the amount of annual revenue needed to be generated by rates. This analysis addressed the level, rather than the structure of rates.

A number of specific conclusions and policy recommendations were developed through this collaboration, and are briefly discussed in this executive summary. Itemized below is a listing of these conclusions and recommendations.

- On balance, the City's utilities are in good financial condition. Fund balances exceed minimum operating reserve requirements for water and stormwater. However, the projected ending fund balance in the wastewater fund on June 30, 2018 does not meet a minimum reserve requirement of 60 days of operating expenses, and will have to be rectified via future general rate increases. Revenue bond debt service coverage on water and wastewater debt exceeds covenants.
- Over the next five years (including the fiscal year that just started on July 1, 2017), the water utility has planned capital improvements that total \$6.9 million (adjusted for inflation). In order to keep rate increases manageable, our modeling indicates the City will have to borrow approximately \$3.8 million over this time frame (before issuance costs and debt service reserves funding). The balance of the water system capital costs will be funded from SDCs (\$2.1 million), and cash contributions from rates (\$1.0 million). By the end of fiscal 2021-22, we are forecasting total principal and interest payments on this new water system debt to be \$263,207 per year (assuming 20 year senior lien revenue bonds). Fortunately, the current water system legacy debt, the Series 2010 Water Refunding Revenue Bonds will be retired in fiscal 2017-18 freeing up \$350,000 per year in free cash flow. By the end of this five year forecast period, we estimate the water SDC fund will have an ending fund balance of \$82k and the water operating fund will have an ending fund balance of \$350k. This can be accomplished with average annual rate increases of 2.86% per year, and will be sufficient to meet system financial needs.
- The wastewater utility is facing some financial challenges. First, the utility has \$3.8 million in principal outstanding on long term debt as of June 30, 2017. This legacy debt consists of the 2010 sewer refunding bonds and the 2008 Clean Water State Revolving Fund (SRF) loan. These debts will not be retired until 2025 for the bonds, and 2028 for the loan. The total annual debt service on these two debt instruments is \$502k per year. Second, over the next five years, the wastewater utility is planning on spending \$7.1 million (adjusted for inflation) on capital improvements. In order to manage future rate spikes resulting from this spend, our modeling indicates the City will have to bond a significant portion of the future capital projects costs. Out of the \$7.1 million need, we conclude the City will have to borrow \$6.0 million (before issuance costs and debt service reserves funding). Even though most of the total is SDC eligible, the City will only be able to contribute \$846k in SDCs over the forecast horizon. This is due to low wastewater SDC fund balance and the City policy of using SDCs to pay the annual principal component of the SRF loan debt service. Finally, based on the adopted fiscal 2017-18 wastewater system budget, the City is projected to end the year with an operating reserve of \$215k (i.e., Wastewater Fund ending fund balance). This reserve represents 35 days of wastewater system operating expenses, and is well below our recommended reserve level of 60 days of operating

expenses. In order to correct this deficiency, we have gradually increased rates over the five year forecast horizon to bring the wastewater fund balance up to 60 days of operating expenses by June 30, 2022. Our modeling indicates that all of these system requirements can be funded with average annual rate increases of 6.09% per year. By the end of the five year forecast horizon, we project the wastewater SDC fund will have an ending fund balance of \$129k, and the wastewater operating fund will have a corresponding cash balance of \$440k.

- The stormwater utility has a revenue recovery problem, and the City Council is aware of this problem. In 1999, the City adopted a stormwater fee methodology to provide a mechanism that would generate revenue for the maintenance and operation of the stormwater collection and detention system. That fee methodology used impervious area (IA) as the basis for charging customers. Initially, the City assumed single family residential customers contributed 2,640 square feet of IA per home. This became the basis for the Equivalent Dwelling Unit (EDU). The plan then called for the City to measure the IA from all commercial, industrial, and institutional customers (via GIS data) to calculate their fees. The measured IA for each of these non-single family residential customers would be divided by 2,640 to calculate the number of EDUs they contributed to the system and then be billed at the rate of \$2.00 per EDU. Unfortunately, at the time of implementation, the City chose to “cap” the total number of EDUs that any non-single family residential customer would be charged at 20 EDUs. This policy has resulted in an under recovery of revenues required to fund the operations and maintenance of the stormwater systems. During the fiscal 2017-18 budget process, the City Council was apprised of this commercial cap policy, and they have decided to discontinue the policy and they have directed Staff to bill the non-single family residential accounts based on their actual measured IA. As part of this process, Public Works staff have remeasured all parcels in the City (via geographical information system (GIS) data) and have recalibrated the EDU to 2,980 square feet of IA. We have assumed this will be the case, and have recommended the City set the current monthly rate per EDU at \$3.60. If the cap policy had been continued, the calculated rate would have been \$4.51 per EDU.
- The methodology that we are proposing for the construction of a transportation capital projects fee is based on generally accepted rate making practice, and has been reviewed by City Staff. We believe the City is justified in implementing this fee because there is no other dedicated funding source that we could find to meet the need. There are two options for the construction of the fee, as discussed in the opening remarks of this report. If the City bonds the entire capital projects revenue requirement, the monthly fee comes to \$12.15 per active utility account per month. If the City chooses to follow a pay as you go strategy, the fee comes to \$18.08 per active utility account per month.

Recommendations

The recommendations of this municipal utilities rates study are pragmatic and reasonable. Our recommendations are focused on securing the financial future of the utilities and to make sure that all customers who receive the benefits of utilities services pay their proportionate share of the costs of delivering those utility services. Itemized in Table 1 are the key recommendations for each utility over the next five years:

Table 1 – Summary of the 2017 Utilities Rate Study Recommendations

2017 Utilities Rate Study Recommendations
<ul style="list-style-type: none">• No rate increases are required for the current fiscal year 2017-18. However, beginning on July 1, 2018, we recommend the City adjust utility rates by an average annual percentage increase through June 30, 2023 as follows:<ul style="list-style-type: none">✓ Water - 2.86% per year for each year of the five year forecast✓ Wastewater – 6.09% per year for each year of the five year forecast✓ Stormwater – 3.5% per year for each year of the five year forecast
<ul style="list-style-type: none">• Follow through with the elimination of the current stormwater fee “capping” policy for non-single family residential properties. The primary purpose of the stormwater utility is to keep City streets clear of standing stormwater, eliminate localized flooding throughout the City, and enhance water quality in the receiving streams. Exemptions only hamper the City from completing this mission.
<ul style="list-style-type: none">• Present the proposed methodology for implementing a monthly transportation capital projects fee to the Molalla City Council via work session. Offer both of the funding options (i.e., bonding of the revenue requirement and the pay as you go strategy), and get feedback from the Council. If the Council chooses to proceed with one of the options, develop a customer outreach and education plan for rolling out the fee. Consider a target implementation date of July 1, 2018.
<ul style="list-style-type: none">• Continually monitor the cash position of the wastewater fund. If the fund balance falls below 30 days of operating expenses in this fiscal year (FY 2017-18), consider implementing cost controls and or an interim rate increase to bring the fund balance up. Our proposed future wastewater rate increases are programmed to build the fund balance to an acceptable reserve level of 60 days of operating expenses over five years.

Analysis Section

Background and Study Methodology

Molalla is a residential community located near the Molalla River in Clackamas County. It is positioned 14 miles south of Oregon City on Highway 213, and 25 miles northeast of Salem. The City owns and operates a culinary water system that serves 2,750 customers and provided about 42.2 million cubic feet of water to customers in fiscal 2015-16. Out of the 2,750 active accounts, 94% are residential/small commercial customers. The balance of the accounts are larger multifamily, institutional, and industrial customers.

The City also owns and operates a wastewater collection and treatment system. The wastewater treatment plant was constructed in 1980. The plant has a headworks, which includes comminution (grinding) and flow measurement using a Parshall flume. Influent flows by gravity from the headworks to an aeration basin. A pump station is required to transfer the wastewater from the aeration basin to the first of two facultative lagoons, which provide both treatment and storage. Disinfection is accomplished using aqueous chlorine. Dry-weather effluent is disposed of by land application on the plant site and on lands in private ownership. Excess dry weather effluent is stored in the lagoons. Wet-weather flows and stored effluent are further treated using dissolved air flotation (DAF) and gravity filters prior to a stage-based surface water discharge to the Molalla River. The collection system has approximately 100,000 feet of piping and over 250 manholes. Most of the system was installed after 1955 and uses piping made of concrete, asbestos cement (AC) or polyvinyl chloride (PVC). The 3,700 feet of pre-1955 sewer lines are open-jointed concrete pipe. Much of the system drains to the north and then follows Toliver Road west to the treatment plant. A trunk installed in the south end of the City diverts some of the flows along Highway 211 and Bear Creek to the plant. There are also five small collection system pump stations.

Finally, the City owns and operates a storm drainage system that consists of 27.7 miles of storm drainage lines ranging in size from 6-inch diameter to 72-inch diameter, 1,553 storm structures (catch basins, manholes, cleanouts, storm inlets and outfalls), 13 stormwater detention basins, and 0.73 miles of culverts ranging in size from 6-inch diameter to 72" diameter. The City does not own or operate any stormwater pump stations. Stormwater runoff in the City flows directly to one of three natural systems: the Molalla River, Bear Creek or Creamery Creek. Two branches of Creamery Creek flow through the north end of the City, generally from southeast to northwest, and meet east of Highway 213; Creamery Creek flows into the Molalla River several miles outside the Urban Growth Boundary (UGB). Bear Creek runs generally parallel to and south of Creamery Creek and eventually flows into the Pudding River. The Pudding River flows into the Molalla River just before the Molalla River enters the Willamette River.

To pay for the operation, maintenance, replacement, and improvement of these water, wastewater, and stormwater systems, the City charges its customers fees on a monthly basis. The purpose of this study is to evaluate the City's methodology for calculating these fees and to perform an industry standard, cost of service analysis (COSA). The process used to prepare the COSA for the City's utilities follows standard ratemaking principles, as outlined by the American Water Works Association (AWWA), the Water Environment Federation (WEF), and the U.S. Environmental Protection Agency (EPA). This process consists of three steps:

1. Determine revenue requirements...(how much does it cost to provide service system-wide)
2. Allocate costs to customer classes...(who is causing the need for the service, and in what proportion)
3. Determine rate structure and develop rates...(align rates to recover costs from those causing the need)

Step 1: Determination of Revenue Requirements

Revenue requirements are the total costs of providing services to utility customers over a specific period of time (usually one year). These costs include operation and maintenance (O&M) and capital costs. O&M costs are the routine costs of operating and maintaining a utility system in order to provide service. For the purpose of rate setting, revenue requirements are projected from budgeted expenses, and adjusted based on historical cost trends and the expertise of utility staff. Examples of O&M costs are chemicals and electricity used at plants, skilled plant operator labor, and administrative expenses.

Capital costs, as defined for the City's rates structures, are the resources used to acquire or construct capital assets. These include current revenue funded (pay-as-you-go) improvements, planned annual contributions to funds for such purposes, and ongoing debt service requirements (principal and interest payments on outstanding loans and other obligations). Capital assets are defined as major assets that benefit more than a single fiscal period. Typical examples are land, improvements to land, easements, buildings, improvements, vehicles, machinery, equipment and other infrastructure. Capital costs are projected for the rate-setting period based on the capital improvement plan, the City's bond covenants and utility staff expertise.

To determine the amount of revenue that rates must generate annually, the total revenue requirements are reduced by nonrate or other system revenues. Examples of other system revenues are unrestricted interest earnings, revenues from wholesale contract customers, and revenue from miscellaneous charges. Total requirements less other system revenues equal requirements from rates.

Step 2: Allocate Revenue Requirements to Customer Classes

Determination of the costs-of-service by customer class is a four-step process. These steps are referred to as functionalization, joint and specific groupings, classification, and allocation. Functionalization involves categorizing revenue requirements according to utility functions. For example, wastewater functions typically include treatment (often broken up by unit process), collection, pumping, and customer service. Utilities incur varying levels of costs to perform the different system functions needed to meet customer demands. Therefore, the first step in the cost allocation process is to determine what it costs the utility to perform different service functions. Next, functional costs are grouped by joint and specific categories. This process allows for certain types of costs (e.g., industrial pretreatment costs) to be allocated directly to benefiting customers. The majority of costs are generally joint or common to all customers.

Following functionalization and joint and specific groupings, a classification process is undertaken. A fundamental objective in developing a rate system is to price utility services so that each customer pays for the service they receive in proportion to their use. Some costs incurred by the utilities are a function of quantity. In the case of water, it means metered water sales. In the case of wastewater, it means the amount of wastewater discharged to the collection system. Other costs are associated with serving customers regardless of the quantity that flows through the system.

Ideally, each customer would be charged according to the actual cost of providing service to his or her connection. However, it is impractical to estimate the cost of serving each individual customer. Therefore, it is accepted practice in the utility industry to classify customers into relatively few, reasonably homogeneous groups, and then to develop rates for each group. In the final step of the cost allocation process, the characteristics of the utilities' customers are analyzed and costs are allocated to each class. For water systems, user characteristics include number of meters, base daily demand, and extra capacity demand measured in maximum day and maximum month demand. For wastewater systems, user characteristics include sewage flows, strengths and the number of customer accounts.

The user characteristics serve as the basis for allocating costs by service characteristic to each customer class. The sum of each class's proportionate cost share of each service characteristic is that class's total cost-of-service.

Step 3: Determine Rate Structure and Develop Rates

The last step in the rate development process is the design of the rate structure and the development of rates. There are a variety of rate structure options available to meet a wide range of policy objectives. Molalla water and wastewater rates are comprised of a fixed charge per customer per billing period (monthly) and a volume charge that varies based on water usage or estimated sewage flow. Stormwater fees are flat rated for residential customers at an assumed amount of impervious surface equal to 2,984 square feet. Commercial, institutional, and industrial customers are billed based on actual measured impervious surface.

Once a rate structure is selected, rates are calculated based on the costs-of-service by class determined in Step 2. The end result of this rate development process is an equitable distribution of system revenue requirements to system users.

Analysis of Water System Revenue Requirements

This analytical task determines the amount of revenue needed from water rates. This is driven by utility cash flow or income requirements, constraints of bond covenants, and specific fiscal policies related to the water utility. Based on two years of actual financial records (i.e., fiscal 2015 through 2016), estimated results for fiscal 2017, and for the upcoming budget year 2018, a base case analysis was developed. This case is predicated on a number of planning assumptions. These planning assumptions are discussed in detail below.

For the upcoming budget year (fiscal 2018), it is forecasted that the water utility will generate sufficient revenues from rates, charges and fees to meet its obligations and produce an unappropriated ending balance in the water operating fund of \$365,499. The beginning balance for the water operating fund in this same fiscal year is estimated to be \$774,043. In order to establish and maintain cash balances in the water operating fund while continuing to support the funding of future operations and maintenance work, average annual general water rate increases of 2.86% per year will be required for each of the ensuing five fiscal years starting on July 1, 2018 (i.e., the start of fiscal 2018-19).

For the forecast of revenue requirements, the following assumptions were made based on discussions with City staff:

Inflation in costs and growth in the customer base – In order to accurately reflect likely future conditions, the revenue requirements model was programmed to allow for inflation and cost escalation factors by budget line item. Per guidance from City staff, the following factors were applied for estimating future cost escalation:

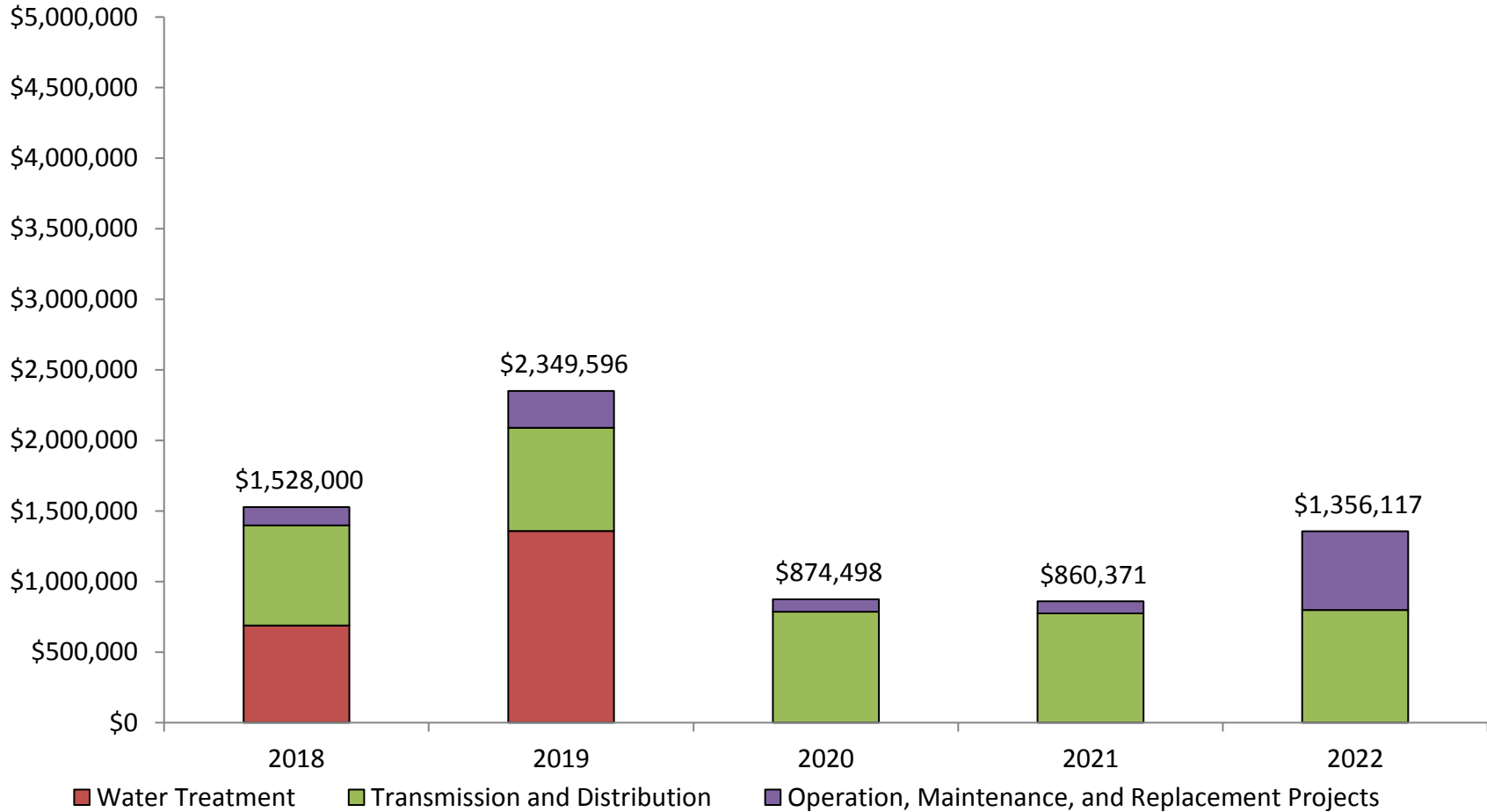
- All direct labor line items – 3.0% per year
- Pension plan contributions (City cost) – 8.0% per year
- Health insurance premiums (City cost) – 6.0% per year
- Professional services (OMI contract) – 3.0% per year
- All other operating expense line items – 3.0% per year
- The growth forecast expressed in the annual increase in 3/4" meters is estimated to be 1.0% per year over the five (5) year forecast horizon.

Capital Improvement Plan Funding - In the upcoming budget year 2018, total water system capital improvement costs are estimated to be \$1,528,000, and consist of the following projects:

Project Description	Cost
Metzler, 3 rd , and Faurie street improvements	\$349,000
Lola Avenue improvements	318,000
City Shops improvements	137,000
WTP – New Trident 1,400 GPM filter unit	445,200
WTP – Sodium hypochlorite & controls unit	243,800
WTP – Security fencing	<u>35,000</u>
Total	\$1,528,000

With the assistance of City Staff, a 20 year water system capital improvement plan was developed for this rate study effort. Over this 20 year horizon, the City's water system capital improvement plan calls for the investment of \$15,908,932 (2016 dollars). For the purposes of this rate study, the project team focused on the funding strategy for the first five (5) years of the Plan. The first five years of investments amounts to \$6,968,581 (adjusted for inflation), and is also shown graphically in Figure 1. The water system financial plan calls for all of these costs to be funded from a combination of long term debt proceeds, SDCs, and internally generated cash flow.

Figure 1 - Forecast of Water Capital Expenditures



As discussed above, under this water system financial plan, it is assumed that all of the capital improvement costs are to be funded from a mix of new debt, water SDCs, and free cash flow generated in the water operating fund. The water CIP funding plan is shown below in Table 2.

Table 2 - Forecast of Future Water System Capital Financing Plan

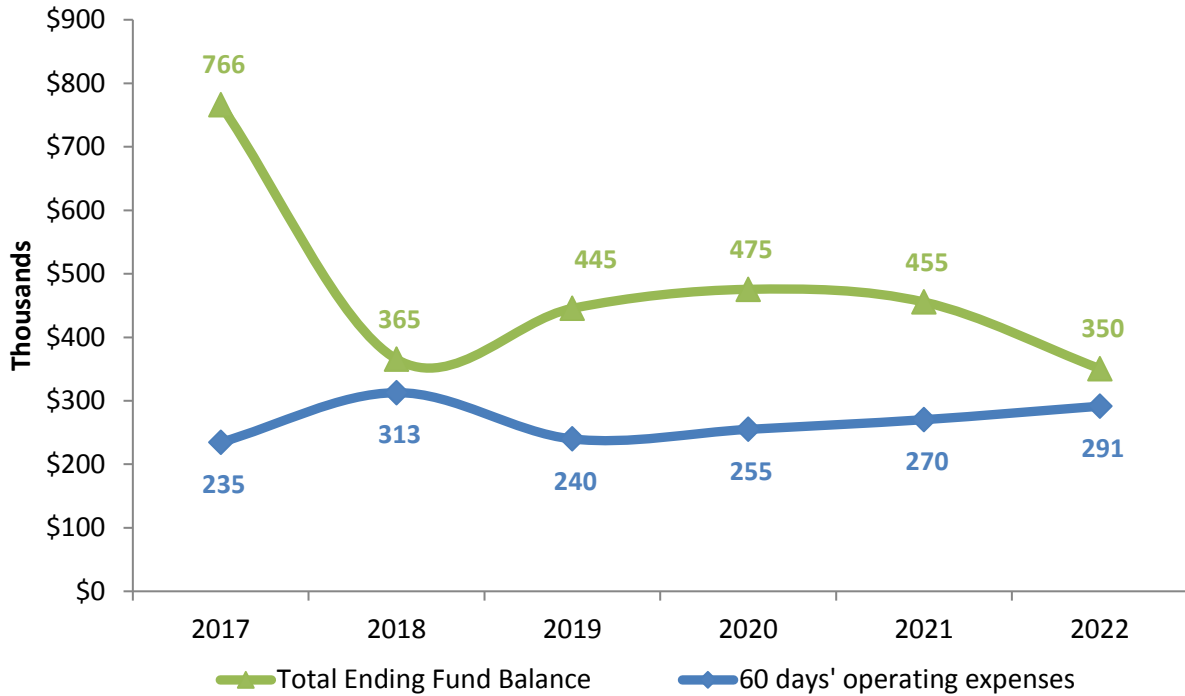
Capital Improvements Financing	2018	2019	2020	2021	2022
Capital Costs to be Funded	\$ 1,528,000	\$ 2,349,596	\$ 874,498	\$ 860,371	\$ 1,356,117
less: Contributions from SDCs	855,200	998,664	84,347	78,559	80,071
less: Contributions From Construction Fund bal	(0)	-	-	-	-
less: Contributions From Utility Rates	672,800	100,000	100,000	100,000	100,000
less: Developer Contributions	-	-	-	-	-
Amount to be Financed	-	1,250,933	690,151	681,812	1,176,046
Long-term Borrowing:					
Revenue Bonds:					
Amount Borrowed	-	1,351,114	745,422	736,415	1,270,230
less: Financing Cost	-	13,511	7,454	7,364	12,702
less: Reserve Funding	-	86,670	47,817	47,239	81,482
less: Refunding of BANs	-	-	-	-	-
Net Funds from Revenue Bonds	-	1,250,933	690,151	681,812	1,176,046
New Annual Debt Service:					
Debt Service	\$ -	\$ 86,670	\$ 134,487	\$ 181,726	\$ 263,207

It should be noted, the City is budgeting for total water rate revenues of \$1,550,000 for fiscal 2017-18. This level of ongoing cash flow in combination with future debt proceeds, fund balances in the water SDC and operating funds is sufficient to make the water capital funding plan work.

Operating Costs in Excess of Inflation – In most rate studies, there are certain operating cost categories that tend to grow in excess of the general price index. We have not identified any categories in this analysis. Also, we have not planned or budgeted for any additional labor. If the water utility does add staff, these costs will impact the current revenue requirements forecast.

Modeling for Contingencies, Reserves, and Ending Fund Balances - The financial engine of the water utility is the water operating fund. Because the utility cash finances all of its operations, the ending fund balance in the water operating fund is in effect the contingency fund for the utility. Over the past three years, the ending fund balance in the Water Operating Fund has been stable, primarily due to steady growth in rate revenue receipts, and expense controls initiated by City management. For planning purposes, we are expecting the Water Operating Fund will end all forecast years with a target ending fund balance in excess of sixty days of operating expenses. This target balance gives the water utility enough contingency to fund unforeseen operating cost spikes. The five year forecast of targeted Water Operating Fund balances and operating reserve requirements is shown below in Figure 2.

Figure 2 - Forecast of Water Operating Fund Balances and Operating Reserve Requirements



Revenue Requirements Forecast & Results

All of the above cost elements are contained in the revenue requirements model which is the platform for the “base case” forecast. The base case assumes the utility will fund the capital improvements strategy (discussed above). Also, the utility would fund the operating costs as adjusted for inflation. This base case resulted in the following forecast of water system revenue requirements (Table 3).

Table 3 – Base Case Forecast of Water System Revenue Requirements

	Budget	Forecast				
	2018	2019	2020	2021	2022	2023
Projection of Cash Flow:						
Revenues:						
Total licenses and permits	-	-	-	-	-	-
Total Service Charges	1,550,000	1,550,000	1,593,581	1,636,558	1,681,144	1,727,245
Total interest earned	-	2,924	3,564	3,804	3,644	2,804
Total other financing sources	-	-	-	-	-	-
Total miscellaneous income	10,000	10,300	10,609	10,927	11,255	11,593
Subtotal gross operating revenues	1,560,000	1,563,224	1,607,754	1,651,289	1,696,043	1,741,641
Operations & Maintenance Expense:						
Total personal services	561,365	583,725	607,141	631,674	657,386	684,345
Total materials and services	566,650	583,650	601,159	619,194	637,770	656,903
Total capital outlay	65,729	67,701	69,732	71,824	73,979	76,198
Transfers to other funds	102,000	191,730	242,699	293,184	378,009	381,453
Total operations and maintenance expense	1,295,744	1,426,805	1,520,731	1,615,876	1,747,144	1,798,899
(Use)/replacement of fund balance	(408,544)	180,000	130,000	80,000	(5,000)	
Net Cash	672,800	(43,581)	(42,977)	(44,587)	(46,100)	(57,257)
Net Deficiency/(Surplus)	(672,800)	43,581	42,977	44,587	46,100	57,257
Test of Coverage Requirement:						
Gross Revenues:						
Operating revenues	1,560,000	1,563,224	1,607,754	1,651,289	1,696,043	1,741,641
System Development Charges	74,860	76,357	77,884	79,442	81,031	82,651
Total Gross Revenues	1,634,860	1,639,581	1,685,639	1,730,731	1,777,074	1,824,293
Operating Expenses:						
Total personal services	561,365	583,725	607,141	631,674	657,386	684,345
Total materials and services	566,650	583,650	601,159	619,194	637,770	656,903
Transfers to other funds	102,000	105,060	108,212	111,458	114,802	118,246
Transfers to/(from) the rate stabilization account	(18,668)	-	-	-	-	-
Total Operating Expenses	1,211,347	1,272,434	1,316,512	1,362,326	1,409,958	1,459,493
Net Revenues	423,513	367,147	369,126	368,405	367,117	364,799
Debt Service	350,200	86,670	134,487	181,726	263,207	263,207
Coverage Recognized	1.21	4.24	2.74	2.03	1.39	1.39
Coverage Required	1.20	1.20	1.20	1.20	1.20	1.20
Net Deficiency/(Surplus)	(3,273)	(263,143)	(207,742)	(150,334)	(51,268)	(48,951)
Projection of Revenue Sufficiency and Forecasted Rates:						
Maximum Deficiency	-	43,581	42,977	44,587	46,100	57,257
Percent Increase Required Over Current Rate Revenues	0.00%	2.81%	2.70%	2.72%	2.74%	3.31%
Five Year Average Increase in Revenue Requirements		2.86%	2.86%	2.86%	2.86%	2.86%
Revenues Recovered From Existing Rates and Charges:	1,550,000	1,550,000	1,593,581	1,636,558	1,681,144	1,727,245
add: Revenues Recovered From Rate Increase	-	43,581	42,977	44,587	46,100	57,257
Total Revenues Recovered From Rates & Charges after Increase	1,550,000	1,593,581	1,636,558	1,681,144	1,727,245	1,784,502

Table 3 shows, forecasted annual changes in water system revenue requirements average 2.86% per year from fiscal 2018-19 through fiscal 2022-23. On July 1, 2017, the City enacted a 2.1% general rate increase that is accounted for in the budget year 2017-18 budgeted rate revenues.

Analysis of Water Rates and Recommended Policy Changes

Allocation of Revenue Requirements to Customer Classes (Cost of Service)

The ratemaking methodology that was used to allocate water system revenue requirements is called the “base-extra capacity method”, and is consistent with industry standards in water rate making. The City has been using this method at least since 2007. Under this methodology, costs of service are separated into three primary cost components: (1) base costs, (2) extra capacity costs, and, (3) customer costs.

Base costs are those that tend to vary with the total quantity of water used plus those operations and maintenance (O&M) expenses and capital costs associated with service to customers under average load conditions, without the elements of cost incurred to meet water use variations and resulting peaks in demand. Base costs include O&M expenses of supply, treatment, pumping, and distribution facilities. Base costs also include capital costs related to water plant investment associated with serving customers to the extent required for a constant, or average, annual rate of demand/usage.

Extra capacity costs are those associated with meeting rate of use requirements in excess of average and include O&M expenses and capital costs for system capacity beyond that required for average rate of use. These costs have been subdivided into costs necessary to meet maximum-day extra demand, and maximum-hour demand in excess of maximum day demand.

Customer costs comprise those costs associated with serving customers, irrespective of the amount or rate of water use. They include meter reading, billing, and customer accounting and collection expense, as well as maintenance and capital costs related to meters and services.

Water Customer Profile

The City’s water utility served 2,750 active water accounts in fiscal 2015-16. At any given time, this number fluctuates due to move-in, and move-outs. Out of this total, 2,700 accounts were inside the City limits, and 50 were outside. From a demand perspective, 97% of all customers were single family residential or small commercial accounts, and are served by $\frac{3}{4}$ ” water meters. The breakdown of water meters in service as of June 30, 2016 are shown below in Table 4.

Table 4 - Water Meters in Service as of June 30, 2016

	Meter Size							Total
	$\frac{5}{8}$ inch	$\frac{3}{4}$ inch	1 inch	1 ½ inch	2 inch	3 inch	4 inch	
Inside City:								
Residential	-	2,508	12	6	3	-	-	2,529
Multifamily	-	-	-	-	-	-	-	-
Commercial	-	111	10	24	11	-	-	156
Industrial	-	-	-	-	-	12	3	15
Subtotal inside city	-	2,619	22	30	14	12	3	2,700
Outside City:								
Residential	-	41	-	-	2	-	-	43
Multifamily	-	-	-	-	-	-	-	-
Commercial	-	4	-	-	3	-	-	7
Industrial	-	-	-	-	-	-	-	-
Subtotal outside City	-	45	-	-	5	-	-	50
System Total	-	2,664	22	30	19	12	3	2,750

Analysis of Water Demand

An analysis of actual water sales in fiscal 2015-16 was undertaken to understand overall system demands, and to specifically identify who is buying water and when they buy that water. In fiscal 2015-16, 77% of all water was sold to the single family residential customer class. The balance, 23% was sold to commercial, master metered multi-family, industrial, and institutional customers. From a peak day demand perspective, the residential class had a peak day factor (i.e., peak day demand divided by average day demand) 1.87 compared to a peak day factor for the commercial/industrial class of 1.69. Intuitively, this makes sense since peaking demand for water occurs in the hot summer months when irrigation demand is at its highest. The largest users of irrigation water in the City are single family residential customers. The water sales data for fiscal 2015-16 is contained in Table 5.

Table 5 - Molalla Water Sales Volumes in Fiscal 2015-16

Classification	Commercial/Industrial			Residential			Bulk CF	Total CF
	Total CF	Inside CF	Outside CF	Total CF	Inside CF	Outside CF		
July-15	1,019,929	990,159	29,770	4,109,614	4,045,478	64,136	4,509	5,134,052
August-15	1,379,871	1,360,013	19,858	5,121,849	5,044,476	77,373	4,859	6,506,579
September-15	993,256	975,294	17,962	2,597,701	2,556,685	41,016	3,217	3,594,174
October-15	685,984	664,769	21,215	2,416,380	2,378,684	37,696	2,498	3,104,862
November-15	551,017	523,799	27,218	1,891,108	1,857,279	33,829	2,365	2,444,490
December-15	(5,842)	2,782	(8,624)	22,196	20,512	1,684	-	16,354
January-16	1,037,295	992,166	45,129	3,876,402	3,805,060	71,342	6,900	4,920,597
February-16	498,178	486,377	11,801	1,890,491	1,848,960	41,531	6,011	2,394,680
March-16	551,501	524,521	26,980	2,063,314	2,023,537	39,777	5,114	2,619,929
April-16	493,379	480,050	13,329	1,925,695	1,893,350	32,345	3,035	2,422,109
May-16	1,369,689	1,341,431	28,258	3,267,772	3,040,594	227,178	2,417	4,639,878
June-16	1,050,804	999,019	51,785	3,329,364	3,271,659	57,705	2,741	4,382,909
Total	9,625,061	9,340,380	284,681	32,511,886	31,786,274	725,612	43,666	42,180,613
Average Month	802,088	778,365	23,723	2,709,324	2,648,856	60,468	3,639	3,515,051
Peak Month - Volume	1,379,871	1,360,013	51,785	5,121,849	5,044,476	227,178	6,900	6,506,579
Peak Month	Aug-15	Aug-15	Jun-16	Aug-15	Aug-15	May-16	Jan-16	Aug-15
Peak Month Factor	1.7203	1.7473	2.1829	1.8905	1.9044	3.7570	1.8962	1.8511
Average Day	26,370	25,590	780	89,074	87,086	1,988	120	115,563
Peak Day	44,512	43,871	1,726.17	165,221	162,725	7,328	223	209,890
Peak Day Factor	1.6880	1.7144	2.2132	1.8549	1.8686	3.6863	1.8605	1.8162

Existing and Projected Water Rates

The City's current water rate structure was last reviewed in 2010. A number of rate increases have been implemented by the Council since that time, but the basic water rate methodology has remained intact. Billings for customers include two components: a fixed rate (demand charge) and a volume rate (commodity charge). The two components are added together to compute an invoice for each customer. The fixed rates are based on costs associated with maintaining/reading meters and the costs associated with billing and are charged per connection to the water system. Volume rates are based on the customer class for each 100 cubic feet (ccf) of water. The last rate adjustments were made by the City Council via Resolution no. 2016-08 (dated May 25, 2016) with an implementation date of July 1, 2017. The current and projected schedule of water rates and charges is shown below in Table 4.

Table 6 - Schedule of Current and Projected Molalla Water Rates

Water Rate Component	Effective on July 1					
	2017	2018	2019	2020	2021	2022
Monthly base rate - \$/Account	\$ 13.07	\$ 13.44	\$ 13.80	\$ 14.18	\$ 14.57	\$ 15.05
Volume charge - \$/Ccf	\$ 2.87	\$ 2.95	\$ 3.03	\$ 3.11	\$ 3.20	\$ 3.31

Rate Design Alternatives

The City's current water rate methodology is sound, conforms to industry practice, and promotes conservation. We see no reason to move off of this methodology.

Analysis of Wastewater System Revenue Requirements

For the budget year (fiscal 2018), it is forecast that the wastewater utility will generate sufficient revenues from rates, charges and fees to meet its obligations and produce an unappropriated ending balance in the Wastewater Operating Fund of \$215,240. The beginning balance for this same fiscal year is estimated to be \$380,021. This level of operating reserve represents 35 days of wastewater system operating expenses and is below our recommended level of sixty (60) days of operating expenses. The strategy for the wastewater utility is to gradually raise the fund balance (via annual rate increases) up to the recommended reserve level by the end of the five year forecast horizon.

For the forecast of revenue requirements, the following assumptions were made based on discussions with City staff:

Inflation in costs and growth in the customer base – Per guidance from City staff, the following factors were applied for estimating future cost escalation:

- All direct labor line items – 3.0% per year
- Pension plan contributions (City cost) – 8.0% per year
- Health insurance premiums (City cost) – 6.0% per year
- Professional services (including contract services) – 3.0% per year
- All other operating expense line items – 3.0% per year
- The growth forecast expressed in the annual increase in Equivalent Dwelling Units (EDUs) is estimated to be 1.0% per year over the five (5) year forecast horizon.

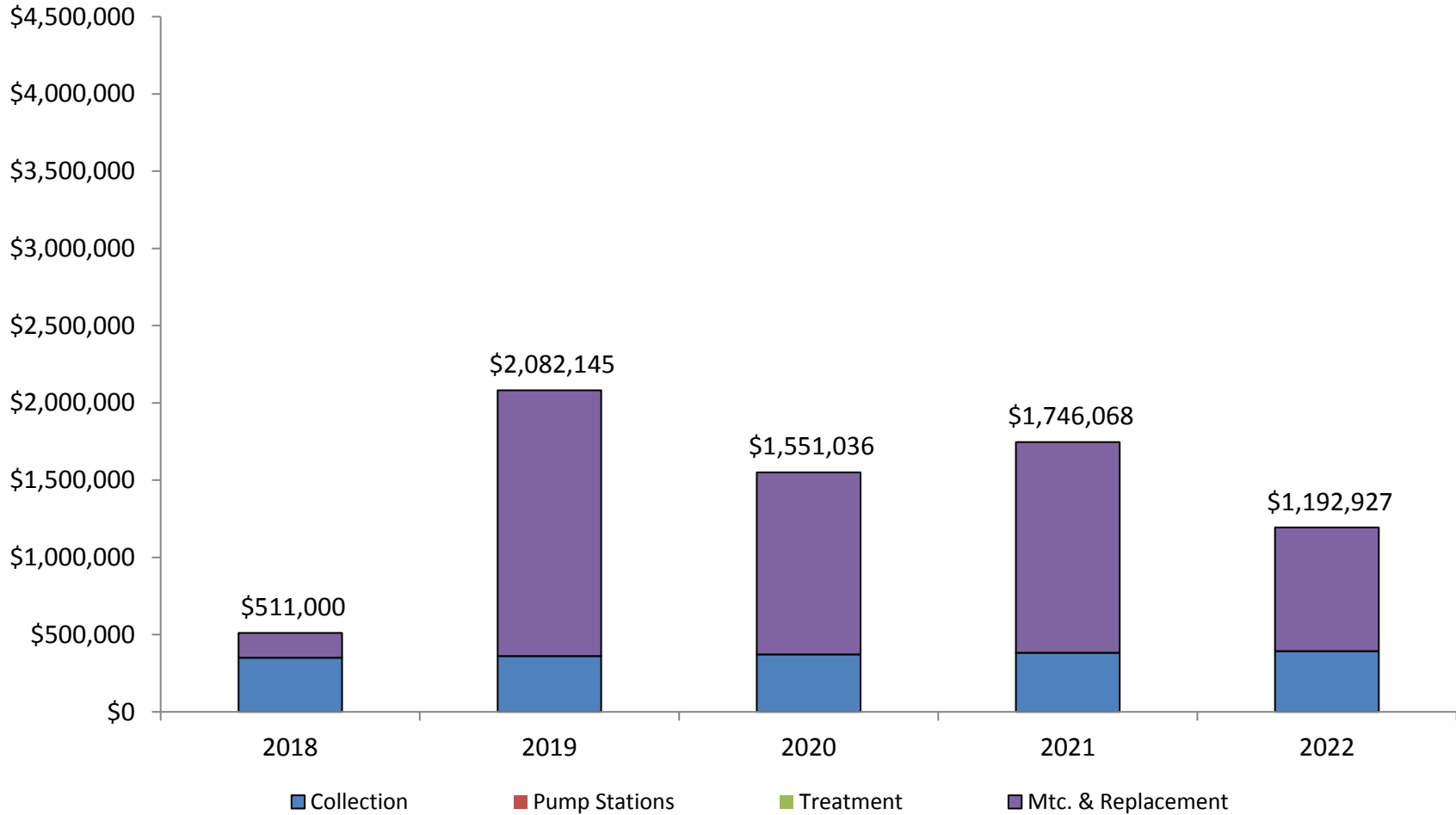
Capital Improvement Plan Funding In the upcoming budget year 2018, total wastewater system capital improvement costs are estimated to be \$511,000. All of the projects are related to the wastewater treatment and collection system, and consist of the following projects:

Project Description	Cost
Wastewater master plan	\$200,000
City Shops improvements	137,000
WWTP – Rebuild & add new headworks screen	121,000
WWTP – Headworks gantry crane	3,000
WWTP – Spare parts inventory	<u>50,000</u>
Total	\$511,000

It is assumed all project costs will be funded with cash on hand or cash that is generated from wastewater rates, and is accounted for in the revenue requirements calculations. We have not budgeted for any costs in the other minor capital line items.

Over the next twenty years, the City plans on investing \$29,561,772 (2016 dollars) in the wastewater system, the preponderance of which will be spent on collection system repair, replacement, and expansion. The first five years of investments amounts to \$7,083,176, and is also shown graphically in Figure 3.

Figure 3 - Forecast of Wastewater Capital Expenditures



Under this initial wastewater system financial plan, it is assumed that all of the capital improvement costs are to be funded from a mix of new debt, wastewater SDCs, and free cash flow generated in the wastewater operating fund. The water CIP funding plan is shown below in Table 7.

Table 7 - Forecast of Future Wastewater System Capital Financing Plan

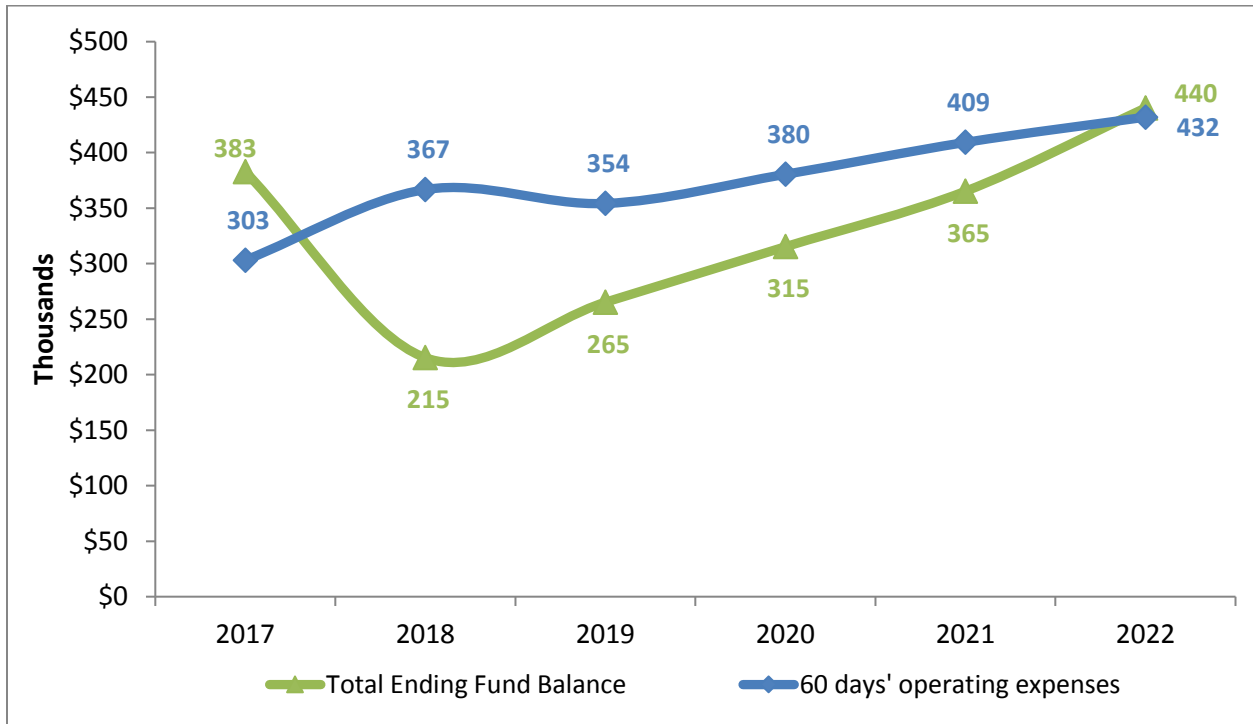
Capital Improvements Financing	2018	2019	2020	2021	2022
Capital Costs to be Funded	511,000	2,082,145	1,551,036	1,746,068	1,192,927
less: Contributions from SDCs	283,000	563,350	-	-	-
less: Contributions From Construction Fund bal	-	-	-	-	-
less: Contributions From Utility Rates	228,000	-	-	-	-
less: Developer Contributions	-	-	-	-	-
Amount to be Financed	-	1,518,795	1,551,036	1,746,068	1,192,927
Long-term Borrowing:					
Revenue Bonds:					
Amount Borrowed	-	1,640,428	1,675,251	1,885,903	1,288,463
less: Financing Cost	-	16,404	16,753	18,859	12,885
less: Reserve Funding	-	105,229	107,463	120,975	82,651
less: Refunding of BANs	-	-	-	-	-
Net Funds from Revenue Bonds	-	1,518,795	1,551,036	1,746,068	1,192,927
New Annual Debt Service:					
Debt Service	-	105,229	212,691	333,667	416,318

As in the case of the water financial forecast, it should be noted, the City is budgeting for total wastewater rate revenues of \$2,100,000 for fiscal 2017-18. This level of ongoing cash flow in combination with future debt proceeds, fund balances in the water SDC and operating funds is sufficient to make the water capital funding plan work.

Operating Costs in Excess of Inflation – As in the case of water, we have not identified any categories in this analysis. Also, we have not planned or budgeted for any additional labor. If the wastewater utility does add staff, these costs will impact the current revenue requirements forecast.

Modeling for Contingencies, Reserves, and Ending Fund Balances – As discussed above, the Wastewater Operating Fund is expected to end fiscal 2017-18 with an unappropriated ending fund balance of \$215,240; not enough to meet our minimum operating reserve requirements. Our forecast assumes the City will be raising rates to fund all future wastewater system obligations and generate additional cash to increase the ending fund balance in the wastewater fund to meet the minimum operating reserve requirement by the end of fiscal 2021-22. The forecast of targeted wastewater operating fund balances and operating reserve requirements is shown below in Figure 4.

Figure 4 - Forecast of Wastewater Operating Fund Balances and Operating Reserve Requirements



Revenue Requirements Forecast & Results

All of the above cost elements are contained in the revenue requirements model and from this, the “base case” forecast was developed. The base case assumes the utility would fund the operating costs as adjusted for inflation. This base case resulted in the following forecast of wastewater system revenue requirements (Table 8).

Table 8 – Base Case Forecast of Wastewater System Revenue Requirements

	Budget	Forecast				
	2018	2019	2020	2021	2022	2023
Projection of Cash Flow:						
Revenues:						
Total licenses and permits	-	-	-	-	-	-
Total Service Charges	2,100,000	2,100,000	2,237,762	2,398,246	2,573,861	2,737,861
Total interest earned	-	1,722	2,122	2,522	2,922	3,522
Total other financing sources	-	-	-	-	-	-
Total miscellaneous income	33,000	33,990	35,010	36,060	37,142	38,256
Subtotal gross operating revenues	2,133,000	2,135,712	2,274,894	2,436,828	2,613,925	2,779,639
Operations & Maintenance Expense:						
Total personal services	588,575	611,826	636,167	661,658	688,364	716,354
Total materials and services	1,016,119	1,046,603	1,078,001	1,110,341	1,143,651	1,177,960
Total capital outlay	66,652	68,652	70,711	72,833	75,018	77,268
Transfers to other funds	398,435	496,394	600,499	717,612	795,892	791,011
Total operations and maintenance expense	2,069,781	2,223,474	2,385,378	2,562,443	2,702,925	2,762,593
(Use)/replacement of fund balance	63,219	50,000	50,000	50,000	75,000	100,000
Net Cash	(0)	(137,762)	(160,484)	(175,615)	(164,000)	(82,954)
Net Deficiency/(Surplus)	0	137,762	160,484	175,615	164,000	82,954
Test of Coverage Requirement:						
Gross Revenues:						
Operating revenues	2,133,000	2,135,712	2,274,894	2,436,828	2,613,925	2,779,639
System Development Charges	94,000	95,880	97,798	99,754	101,749	103,784
Total Gross Revenues	2,227,000	2,231,592	2,372,691	2,536,581	2,715,673	2,883,423
Operating Expenses:						
Total personal services	588,575	611,826	636,167	661,658	688,364	716,354
Total materials and services	1,016,119	1,046,603	1,078,001	1,110,341	1,143,651	1,177,960
Transfers to other funds	25,000	25,750	26,523	27,318	28,138	28,982
Transfers to/(from) the rate stabilization account	-	-	-	-	-	-
Total Operating Expenses	1,629,694	1,684,179	1,740,690	1,799,317	1,860,153	1,923,296
Net Revenues	597,306	547,414	632,002	737,265	855,521	960,127
Debt Service	369,050	470,644	573,976	690,294	767,755	762,029
Coverage Recognized	1.62	1.16	1.10	1.07	1.11	1.26
Coverage Required	1.20	1.20	1.20	1.20	1.20	1.20
Net Deficiency/(Surplus)	(154,446)	17,359	56,770	91,088	65,785	(45,692)
Projection of Revenue Sufficiency and Forecasted Rates:						
Maximum Deficiency	0	137,762	160,484	175,615	164,000	82,954
Percent Increase Required Over Current Rate Revenues	0.00%	6.56%	7.17%	7.32%	6.37%	3.03%
Five Year Average Increase in Revenue Requirements		6.09%	6.09%	6.09%	6.09%	6.09%
Revenues Recovered From Existing Rates and Charges:	2,100,000	2,100,000	2,237,762	2,398,246	2,573,861	2,737,861
add: Revenues Recovered From Rate Increase	0	137,762	160,484	175,615	164,000	82,954
Total Revenues Recovered From Rates & Charges after Increase	2,100,000	2,237,762	2,398,246	2,573,861	2,737,861	2,820,815

Table 8 shows, forecasted annual changes in wastewater system revenue requirements average 6.09% per year from fiscal 2018-19 through fiscal 2022-23. On July 1, 2017, the City enacted a 6.48% general rate increase that is accounted for in the budget year 2017-18 budgeted rate revenues.

Allocation of Revenue Requirements to Customer Classes (Cost of Service)

The cost of service analysis is intended to provide the analytical basis for equitably recovering the forecasted revenue requirement from customer classes according to the demand they place on the wastewater system. Consistent with industry practice, the analysis involves a two-step process; first, capital and O&M costs are allocated to the functional categories (service functions) of the wastewater system using operational and system design criteria. Then, based on customer class characteristics derived from historical billing system data (i.e., number of customers and monthly water usage), these functionally allocated costs are distributed to the customer classes.

Cost of service allocations are made for a test year considered representative of the period in which proposed rates are expected to be in effect. Fiscal 2018 has been used as the test year for the cost of service analysis.

Functional Cost Allocations

Capital and operating costs are allocated to the following functional components of the wastewater system. The wastewater functional components and their descriptions are shown in Table 9.

Table 9 - Wastewater System Functional Components

Wastewater Functional Component	Description
Customer Accounts	Costs associated with providing service to customers regardless of the level of wastewater contribution, such as billing and customer service. These costs are typically associated with the number of accounts or customers.
Wastewater Flow (Q)	Costs are associated with conveying and treating customer contributed wastewater flow (volume).
Infiltration & Inflow (I&I)	Costs are associated with conveying and treating I&I of groundwater and stormwater runoff into sanitary sewers.
Strength of Discharge	Costs are associated with treating effluent loadings of biochemical oxygen demand (BOD) and total suspended solids (TSS).

Capital related costs include debt service payments, system reinvestment funding, and a portion of additions/uses of cash reserves. The most common method of assigning the capital portion of the revenue requirement to functional components is to allocate such costs on the basis of existing plant-in-service. The allocation of historical plant assets utilizes documented engineering and planning criteria from both the City and industry standards.

Operating costs include O&M expenses and a portion of additions/uses of cash reserves. These costs are allocated to the functions based on a detailed review of line item categories, generally following the cost causation process used in the allocation of plant. For example, customer billing related costs are assigned to the customer component; system operating costs for collection and treatment are allocated in the same manner as collection and treatment plant costs; other operational costs are assigned in proportion to total plant; and general and administrative costs are allocated in proportion to all other costs.

The functional cost allocation process results in a pool of costs for each functional category. From these cost pools, unit costs are created that form the building blocks for designing rate structures that recognize the demands of each customer class. As a result, costs will be recovered from customer classes based on their demand by functional category. Through this process if one customer class places a higher or lower proportional average demand in one functional category, that customer class pays a higher or lower portion of that functional category's cost.

Allocations to Customer Classes

The next step in the cost of service analysis involves distribution of the functionally allocated system costs to the customer classes. A key component in the allocation of system costs to customer classes is testing the reliability and accuracy of customer statistics. This is accomplished through a review of historical billing system data and application of the rate schedule in effect for that year. City staff provided historical billing system records for fiscal 2015-16, including number of accounts, equivalent residential units (ERUs), and monthly water usage. The test of reliability is conducted by applying the detailed billing statistics to the rates in effect for that year. The total revenue generated from these customer statistics should approximate the actual revenue receipts shown in the financial statements (with minor differences due to accounts receivables, delinquencies, timing of connections and disconnections throughout the year, etc.). If the revenue estimates are within reasonable limits, statistics are determined "valid" and an adjustment factor is applied to the statistics if necessary to account for any minor discrepancies. The results of this analysis indicated that the customer statistics are valid and will serve as a reasonable basis for projecting revenues and allocating system costs to the customer classes.

Customer usage statistics are also evaluated to determine if current customer class designations represent an appropriate grouping of customers, or if revisions are warranted to better reflect groupings that exhibit similar usage patterns. The City currently categorizes customers into two major groups for rate design purposes: Residential includes single family residential (SFR), multi-family residential (MFR), and manufactured home parks. The same schedule of rates applies to all customers within this class.

Commercial includes all non-residential customers, such as commercial businesses, schools, churches, etc. The same base charge applies to all customers within this class. The volume charge varies by subclass depending on an assumed strength concentration.

The functionally allocated system-wide costs are allocated to the recommended customer classes to determine "cost shares" based on the relative demands placed on the system by each class. Test year fiscal 2016 customer statistics form the basis for this allocation.

Functional costs are allocated to the customer classes as follows: Customer costs are allocated based on proportional shares of total system number of accounts. Wastewater flow costs are allocated to the customer classes based on their proportional share of total billed volume (winter water usage for SFR and actual monthly water usage for MFR and commercial customers). I&I costs are allocated based on customer flow patterns. Finally, strength costs are allocated to the customer class based on their proportional share of total billed volume.

Determine Rate Structure and Develop Rates

The principal consideration in establishing utility rates is to obtain rates for customers that generate sufficient revenues for the utility and that are reasonably commensurate with the cost of providing service. Other considerations in designing rates should include customer equity, incentives for conservation, ease of implementation, and impact on customer bills. These considerations are consistent with the City's identified rate structure goals noted in the previous section.

Existing and Projected Wastewater Rates

The City's current wastewater rate structure was last reviewed in 2010. Although the structure has not changed since that time, the rates have been increased on a regular basis. As in the case of water rates, billings for customers include two components: a fixed rate (demand charge) and a volume rate (commodity charge). The two components are added together to compute an invoice for each customer. The fixed rates are based on costs associated with maintaining/reading meters and the costs associated with billing and are charged per connection to the sewer system. Volume rates are based on the customer

class for each 100 cubic feet (ccf) of water or a fixed amount if no measurable consumption is available. The last rate adjustments were made by the City Council via Resolution no. 2017-09 (dated June 14, 2017) with an implementation date of July 1, 2017. The current and projected schedule of wastewater rates and charges is shown below in Table 10.

Table 10 - Schedule of Molalla Wastewater Rates Effective December 15, 2015

Wastewater Rate Component	Effective on July 1					
	2017	2018	2019	2020	2021	2022
Monthly base rate - \$/EDU	\$ 35.95	\$ 38.31	\$ 41.06	\$ 44.07	\$ 46.88	\$ 48.30
Volume charge - \$/Ccf	\$ 3.56	\$ 3.79	\$ 4.06	\$ 4.36	\$ 4.64	\$ 4.78

The City's current wastewater rate structure is consistent with industry standard, and promotes conservation and equity. Some of the key elements of this rate structure are:

Treatment of Customers without Measurable Water Consumption

Under the City's wastewater rate structure, accounts are considered to be "without measurable water consumption" when potable water is obtained from a well or where the customer has no personal water consumption history established during the winter averaging period within the service area. For single family and multifamily residential customers, new customer accounts without history are set based on 5.50 ccf (monthly) per dwelling unit until measurable consumption is recorded and used to establish a new rate. Customers receiving only sewer service who obtain potable water from a well or another water provider are set based on 5.50 ccf (monthly). Adjustments may be made based on actual usage during the winter averaging months of November through April if the customer can provide sufficient documentation.

For commercial customers without measurable water consumption history, a two-step policy is used as follows:

1. Strengths will be defined by Standard Industrial Classification (SIC) code (i.e. restaurants defined as high) or the customer may elect to have a qualified laboratory regularly monitor and provide measurements of Biological Oxygen Demand (BOD), Total Suspended Solids (TSS) and other particulates (i.e. fats, oils, and grease) to the City.
2. Volumes will be from certification of meter readings provided at the source (well or 3rd party provider). It will be the customer's responsibility to obtain and forward meter readings to the City on a regular bases. In absence of actual meter readings, the City will utilize average usage patterns from similar commercial customers with measurable usage. This method is to be an interim step until such time as a system to measure water usage can be implemented and/or received.

Residential Customers Charged Based on Winter Average Water Consumption

At one time, the City charged all residential wastewater customers on a flat rate basis. Some time ago, the City moved off of this approach and implemented a consumption based rate (CBR) strategy for its residential class. Commercial/industrial and wholesale customers have always been billed based on metered water consumption. Under a CBR methodology, a portion of the wastewater bill is based on how much water a customer uses during the non-irrigation or winter average period, as winter water use is a

reasonable estimate of a customer’s wastewater discharge. A CBR structure enhances the equity of the wastewater rates by relating a portion of an individual’s wastewater bill to the actual discharge into the collection and treatment system. When coupled with a service charge per account that continues to assess the majority of wastewater system costs on a fixed monthly basis, a CBR structure generally balances revenue stability and equity objectives. The policy workings of the City’s winter average billing methodology for residential accounts is:

1. Volume will be based on 6-month winter averaging of water consumption. The winter average period will be defined as the 6-month period starting with the first full billing cycle starting on or after November 1st of each year.
2. Accounts with an average usage of less than 1 ccf of water consumption are automatically assessed at the 5.50 ccf average.
3. Customers may request in writing to have the sewer based on actual usage if the property is vacant (transition between tenants, foreclosure, etc.) or consistently averages below 1 ccf per billing cycle over a 12-month period.
4. The assigned average for water consumption may be appealed to the City Manager, or his/her designee, and could be modified pending a review of the account and findings thereof.

Commercial Customers Charged Based on Assumed Strength of Discharge

The City’s current wastewater volume charge is monolithic and assumes all customers’ strength of discharge is the same. Based on analysis of historical billing records, we have found that 94.0% of all accounts are single family residential, and 5.5% are large multifamily residential, light commercial. The strength of discharge characteristics of this 99.5% of the Molalla population is indeed the same. Industry surveys by the U.S. EPA, and the Water Environment Federation indicate these groups produce low strength of discharge in the range of 200 mg/liter BOD, and 200 mg/liter TSS.

However, the remaining 0.5% of the Molalla population is classified as industrial (i.e., 15 accounts in fiscal 2015-16). We suggest the City consider billing these customers on their assumed strength of discharge. Under this approach, heavy commercial and industrial customers are grouped into low, medium, high, and industrial extra strength categories based upon their standard industrial classification. The City’s strength of discharge class limits could be as follows (per industry guidelines):

Strength Classification	BOD (mg/l)	TSS (mg/l)
Low	0-250	0-300
Medium	251-500	301-600
High	501-1,000	601-1,200
Special	1,001+	1,201+

Under this approach, the responsible person for paying the sewer charge may appeal the strength classification made by the City. Such appeal would be made in writing to the City Manager. The person appealing must provide sufficient information as to the strength of the sewer discharge created by their use so that the City Manager or designee may evaluate the evidence and determine the proper strength of the waste generated.

Rate Design Alternatives

There are a variety of wastewater rate structures in use across the state and the nation. This study seeks to establish the guiding principles to be considered during the wastewater rate setting. It is important to establish the principles in advance of undertaking the technical work of rate setting. Once the principles are established and fixed, then the rate setting process evolves from them. It must also be recognized

that there needs to be a balance in how the principles are applied; e.g., a flat rate is simple, but it may not necessarily be fair and equitable if customers are not equally responsible for the cost of the system. The Review will seek to determine and evaluate alternatives by comparing the various types of rate structures against each principle to determine which structure most satisfies the principles. One must recognize that one or more principles may compete or be in direct contrast with another. Ultimately, the objective is to identify the structure that best meets as many of the principles as possible.

Any rate structure that is considered must respect current legislation and contractual commitments. The main objective is to ensure the wastewater system is sustainable over the long term, thereby ensuring the protection of the health of citizens and the environment. The concepts of user pay and full cost pricing are key elements of which the City should address in the future. The question of what each customer pays is, however, a complex issue with varying viewpoints and interests.

The following principles should be used to develop alternative rate structures for Council's consideration:

1. be fair and equitable
2. promote conservation
3. be affordable and financially sustainable
4. stabilize revenue
5. be justifiable
6. be simple to understand
7. support economic development;

The City's CBR rate structure has been in place for many years, and works well for the City and its customers. Based on the equity the rate structure provides to customers, there is no reason to think the current rate structure for wastewater services is unfair or unreasonable. We recommend the City stay with this rate structure at this time.

Analysis of Stormwater System Revenue Requirements

For the budget year (fiscal 2018), it is estimated the stormwater utility will generate sufficient revenues from rates, charges and fees to meet its obligations and produce an unappropriated ending balance in the Stormwater Operating Fund of only \$47,570. The beginning balance for this same fiscal year is estimated to be \$43,631.

The stormwater utility has a revenue recovery problem, and the City Council is aware of this problem. In 1999, the City adopted a stormwater fee methodology to provide a mechanism that would generate revenue for the maintenance and operation of the stormwater collection and detention system. That fee methodology used impervious area (IA) as the basis for charging customers. Initially, the City assumed single family residential customers contributed 2,640 square feet of IA per home. This became the basis for the EDU. The plan then called for the City to measure the IA from all commercial, industrial, and institutional customers (via GIS data) to calculate their fees. The measured IA for each of these non-single family residential customers would be divided by 2,640 to calculate the number of EDUs they contributed to the system and then be billed at the rate of \$2.00 per EDU. Unfortunately, at the time of implementation, the City chose to “cap” the total number of EDUs that any non-single family residential customer would be charged at 20 EDUs. This policy has resulted in an under recovery of revenues required to fund the operations and maintenance of the stormwater systems. During the fiscal 2017-18 budget process, the City Council was apprised of this commercial cap policy, and they have decided to discontinue the policy and they have directed Staff to bill the non-single family residential accounts based on their actual measured IA. We have assumed this will be the case, and have recommended the City set the current monthly rate per EDU at \$3.60. If the cap policy had been continued, the calculated rate would have been \$4.51 per EDU. For modeling purposes, we have assumed new policy will be completely implemented in fiscal 2017-18.

In the 1999 Storm Drainage User Fee Calculation, the EDU’s were set at 2,640 square feet of IA based on a Unified Sewerage Agency (now Clean Water Services) stormwater user fee. A budget for operations and maintenance of the system was calculated and divided by the total number of EDU’s to determine a monthly price for EDU. Eighteen years have passed since the adoption of this methodology and to date no revisions to the methodology have been approved. As part of the 2017 utilities rate study, the Public Works Department performed an analysis of 30 randomly selected single family residential properties utilizing the City’s GIS system. Each property was measured for total IA and an average of 2,984 square feet of IA was calculated. A selection was made of all commercial, industrial, and residential properties not classified as single family residential and each property was measured for IA. The total IA calculated was 11,270,359 square feet, or 3,777 EDU’s. The total number of single family residential properties was 2,244 giving a grand total of 6,021 EDU’s within the City. Applying the existing methodology from the 1999 report, a cap of 20 EDU’s was applied to all large properties which in turn decreased the total number of EDU’s in the City to 4,539, a difference of 1,482 EDU’s or single family homes. The total number of properties which currently receive the 20 EDU cap is approximately 1.5% of all users.

For the forecast of revenue requirements, the following assumptions were made based on discussions with City staff:

Inflation in costs and growth in the customer base – Per guidance from City staff, the following factors were applied for estimating future cost escalation:

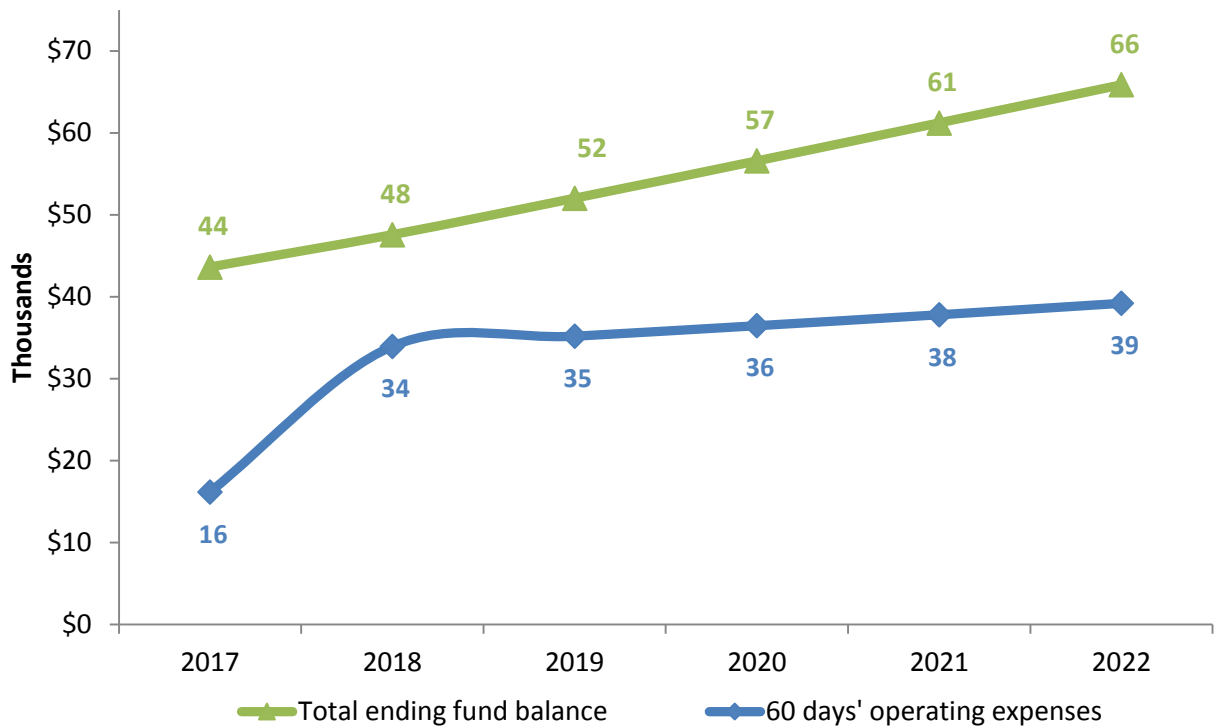
- All direct labor line items – 3.0% per year
- Pension plan contributions (City cost) – 8.0% per year
- Health insurance premiums (City cost) – 6.0% per year

- Professional services (including contract services) – 3.0% per year
- All other operating expense line items – 3.0% per year
- The growth forecast expressed in the annual increase in Equivalent Dwelling Units (EDUs) is estimated to be 2.0% per year over the five (5) year forecast horizon. For stormwater, an EDU is now defined as 2,984 square feet of IA.

Capital Improvement Plan Funding – In the upcoming budget year 2018, total stormwater system capital improvement costs are budgeted at just \$15,000. Because the stormwater utility is so small, management’s focus is not on capital investments. The primary focus is on operations and maintenance of the systems. It is assumed this \$15k will be funded with cash on hand or cash that is generated from stormwater rates, and is accounted for in the revenue requirements calculations. We have not budgeted for any costs in the other minor capital line items.

Modeling for Contingencies, Reserves, and Ending Fund Balances – As discussed above, we expect to end fiscal 2017-18 with an unappropriated ending fund balance of \$47,570 in the Stormwater Operating Fund. This forecast is predicated on the assumption that the City will charge all 6,021 EDUs a monthly rate of \$3.60 per EDU throughout the fiscal year. In other words, the commercial property cap policy is no longer in force. Based on this assumption, our modeling indicates the Stormwater Operating Fund will end all forecast years with an ending fund balance excess of sixty days of operating expenses. The forecast of targeted Stormwater Operating Fund balances and operating reserve requirements is shown below in Figure 5.

Figure 5 - Forecast of Stormwater Operating Fund Balances and Operating Reserve Requirements



Revenue Requirements Forecast & Results

All of the above cost elements are contained in the revenue requirements model and from this, the “base case” forecast was developed. The base case assumes the utility would fund the operating costs as adjusted for inflation. This base case resulted in the following forecast of stormwater system revenue requirements (Table 11).

Table 11 – Base Case Forecast of Stormwater System Revenue Requirements

	Budget	Forecast				
	2018	2019	2020	2021	2022	2023
Projection of Cash Flow:						
Revenues:						
Total licenses and permits	-	-	-	-	-	-
Total Service Charges	260,107	260,107	269,220	278,636	288,399	298,488
Total interest earned	-	381	416	453	490	527
Total other financing sources	-	-	-	-	-	-
Bond proceeds for projects	-	-	-	-	-	-
Total miscellaneous income	-	-	-	-	-	-
Subtotal gross operating revenues	260,107	260,488	269,636	279,088	288,889	299,015
Operations & Maintenance Expense:						
Total personal services	128,081	133,219	138,603	144,246	150,164	156,371
Total materials and services	78,410	80,762	83,185	85,681	88,251	90,899
Total capital outlay	49,678	51,168	52,703	54,284	55,913	57,590
Transfers to other funds (including debt service)	-	-	-	-	-	-
Total operations and maintenance expense	256,169	265,150	274,492	284,212	294,328	304,860
(Use)/replacement of fund balance	3,938	4,450	4,560	4,640	4,650	4,610
Net Cash	0	(9,112)	(9,416)	(9,763)	(10,089)	(10,455)
Net Deficiency/(Surplus)	(0)	9,112	9,416	9,763	10,089	10,455
Test of Coverage Requirement:						
Gross Revenues:						
Operating revenues	260,107	260,488	269,636	279,088	288,889	299,015
System Development Charges	17,480	17,830	18,186	18,550	18,921	19,299
Total Gross Revenues	277,587	278,317	287,822	297,638	307,810	318,314
Operating Expenses:						
Total personal services	128,081	133,219	138,603	144,246	150,164	156,371
Total materials and services	78,410	80,762	83,185	85,681	88,251	90,899
Transfers to/(from) the rate stabilization account	-	-	-	-	-	-
Total Operating Expenses	206,491	213,982	221,788	229,927	238,415	247,270
Net Revenues	71,096	64,336	66,033	67,711	69,395	71,045
Debt Service	-	-	-	-	-	-
Coverage Recognized	N/A	N/A	N/A	N/A	N/A	N/A
Coverage Required	1.20	1.20	1.20	1.20	1.20	1.20
Net Deficiency/(Surplus)	-	-	-	-	-	-
Projection of Revenue Sufficiency and Forecasted Rates:						
Maximum Deficiency	-	9,112	9,416	9,763	10,089	10,455
Percent Increase Required Over Current Rate Revenues	0.00%	3.50%	3.50%	3.50%	3.50%	3.50%
Five Year Average Increase in Revenue Requirements						
Revenues Recovered From Existing Rates and Charges:	260,107	260,107	269,220	278,636	288,399	298,488
add: Revenues Recovered From Rate Increase	-	9,112	9,416	9,763	10,089	10,455
Total Revenues Recovered From Rates & Charges after Increase	260,107	269,220	278,636	288,399	298,488	308,943

Table 11 shows, forecasted annual changes in stormwater system revenue requirements average 3.50% per year from fiscal 2018-19 through fiscal 2022-23. On July 1, 2017, the City enacted a 20% general rate increase that is accounted for in the budget year 2017-18 budgeted rate revenues. On a percentage basis,

this is substantial, but the reader should consider the monthly rate went from \$3.00 per EDU per month to \$3.60 per EDU per month.

Stormwater Rate Forecast – Eliminate Commercial Properties Cap Case

The new stormwater base case rate forecast accounts for the added revenues recovered from commercial, industrial, and institutional customers that have previously been capped at 20 EDUs per account. Under this case, our modeling indicates the City can move forward with modest stormwater rate increases over the five year forecast horizon, and actually add to its current tenuous reserve base. The forecast of targeted Stormwater Operating Fund balances and operating reserve requirements for the new base case is shown below in Table 12.

Table 12 - Forecast of Monthly Stormwater Rates

	Budget	Forecast				
	2018	2019	2020	2021	2022	2023
<i>Gross revenues required from rates:</i>						
Operations and maintenance expense	206,491	213,982	221,788	229,927	238,415	247,270
Operating fund capital outlays	49,678	51,168	52,703	54,284	55,913	57,590
Transfers to other funds (including debt service)	-	-	-	-	-	-
(Use)/Replacement of Operating Fund balance	3,938	4,450	4,560	4,640	4,650	4,610
Subtotal gross revenues required from rates	260,107	269,600	279,052	288,852	298,978	309,470
<i>Revenue offsets to cost of service:</i>						
Total licenses and permits	-	-	-	-	-	-
Total interest earned	-	381	416	453	490	527
Total other financing sources	-	-	-	-	-	-
Bond proceeds for projects	-	-	-	-	-	-
Total miscellaneous income	-	-	-	-	-	-
Subtotal revenue offsets to cost of service	-	381	416	453	490	527
<i>Net revenues required from rates</i>	260,107	269,220	278,636	288,399	298,488	308,943
Forecasted billable retail EDUs	6,021	6,141	6,264	6,389	6,517	6,648
Monthly rate - \$/EDU	<u>\$ 3.60</u>	<u>\$ 3.65</u>	<u>\$ 3.71</u>	<u>\$ 3.76</u>	<u>\$ 3.82</u>	<u>\$ 3.87</u>

Transportation Capital Projects Fee Methodology

In 2016, the City reviewed its system development charge (SDC) methodology and schedule of charges for transportation SDCs. As part of that study, the City concluded it was facing a transportation funding gap. Over the next ten years, there was an identified need of \$21.7 million for transportation capital improvement projects. Out of this total needs assessment, the City estimated \$15.0 million could legally be funded from SDCs (i.e., growth). This left a funding gap of \$6.7 million. The projects (and costs) that comprise these ten year needs total are shown below in Table 13.

Table 13 - Ten Year Transportation Needs and Proposed Funding Sources

Project Description	Estimated Cost of Improvements in 2016 Dollars	Project Cost Attributed to Existing Demands	Project Cost Attributable to Future Demands	Total Costs
<i>Intersection Improvements:</i>				
Highway 211/Highway 213	\$ 675,855	\$ -	\$ 675,855	\$ 675,855
Toliver Road/Highway 213	495,627	-	495,627	495,627
Meadow Drive/Highway 213	225,285	-	225,285	225,285
Mathias Road/Freyrer Park Road	150,190	-	150,190	150,190
Main Street/Grange Street	30,038	-	30,038	30,038
Molalla Avenue/Main Street	240,304	-	240,304	240,304
Molalla Avenue/Toliver Road	225,285	-	225,285	225,285
Leroy Avenue/Main Street	300,380	-	300,380	300,380
Molalla Avenue/Shirley Street	225,285	-	225,285	225,285
Mathias Road/Main Street	600,760	-	600,760	600,760
Molalla Forest Road/Main Street	225,285	-	225,285	225,285
Vick Road/Highway 213	135,171	-	135,171	135,171
Vaughn Road/Highway 211	150,190	-	150,190	150,190
Sawtell Road/Molalla Avenue/Wilhoit	150,190	-	150,190	150,190
Sawtell Road/Eves Road	150,190	-	150,190	150,190
<i>Street Reconstruction Projects:</i>				
May Avenue	112,643	62,579	50,063	112,643
Section Avenue	150,190	66,751	83,439	150,190
Heintz Street	315,399	315,399	-	315,399
South Cole	210,266	116,814	93,452	210,266
Shirley	555,703	555,703	-	555,703
Lola Avenue	347,100	173,550	173,550	347,100
<i>Roadway Widening Projects:</i>				
Ped and Bicycle Improvements	187,738	-	187,738	187,738
Ped and Bicycle Improvements	187,738	-	187,738	187,738
Toliver Road	3,003,800	1,181,823	1,821,977	3,003,800
Ped and Bicycle Improvements	375,475	-	375,475	375,475
Downtown Bypass (Highway 211)	277,852	91,099	186,753	277,852
Downtown Bypass (Molalla Forest Road)	6,458,170	2,117,433	4,340,737	6,458,170
Downtown Bypass (Mathias Road)	1,952,470	640,154	1,312,316	1,952,470
Highway 213	750,950	295,456	455,494	750,950
Molalla Avenue	2,543,540	1,000,737	1,542,803	2,543,540
<i>Plans, Studies, & Policies:</i>				
Update Transportation System Master Plan	250,000	-	250,000	250,000
Total	\$ 21,659,067	\$ 6,617,498	\$ 15,041,569	\$ 21,659,067

The only dedicated funding sources available to fund this gap are motor fuel taxes and PGE franchise fees. It is estimated that roughly 90% of these resources are dedicated to operation and maintenance of the public right of way, and not capital projects funding. For fiscal 2017-18, the total budgeted receipts in the Street Fund from these two sources is \$694,000. Assuming only ten percent of this total could be dedicated to capital projects funding, that amounts to \$69,400, or one percent (1%) of the total unfunded need. Over the ten years of capital needs (i.e., \$6.7 million) dedicated funding sources would only be able to contribute \$694,000. The net capital projects fee basis after deducting the contributions from these dedicated funding sources amounts to \$5.9 million.

Once the net system revenue requirement is understood, a funding strategy has to be developed. In this case, there are two options available to the City. The first is a pay as you go strategy. As the title implies, a fee would have to be established to cash finance 100% of the ten year system revenue requirement. For ease of analysis, we have assumed the annual revenue requirement would be 1/10th per year, or \$592k per year. The second strategy would call for debt financing of the ten year revenue requirement. In this case, the total net revenue requirement (i.e., \$5.9 million) could be funded with the proceeds of a senior lien revenue bond. For this analysis, we have assumed the City would issue a 20 year bond at an interest rate of 3.00%. For ease of analysis, we have not complicated the analysis with any issuance costs, or debt service reserve requirements. The resulting annual debt service on this type of bond is \$398,152.

Now that the annual net revenue requirements of the fee are calculated, we need to settle on who pays for the program. In Oregon, the most common approach to such fees is a surcharge on existing City utility customers. We have chosen to tie the fee to active water customer accounts for this analysis. As of June 30, 2016, there were 2,700 active, in-City, water customers.

The final step in the calculation of the fee is to divide the annual revenue requirements by the total number of active water accounts. The resulting annual fee is then divided by 12 to arrive at the monthly transportation capital projects fee. The calculations are shown below in Table 14.

Table 14 - Derivation of a Transportation Capital Projects Fee

	Pay As You	
	Go	Bonded
Derivation of transportation capital projects fee (TCPF) basis:		
Total master plan project costs to be funded from non-SDC sources	\$ 6,617,498	6,617,498
less: Known transportation funding sources		
Ten percent of state gas tax receipts for ten years	540,000	540,000
Ten percent of PGE franchise fees for ten years	<u>154,000</u>	<u>154,000</u>
Master plan project costs to be recovered from TCPF over ten years	\$ 5,923,498	\$ 5,923,498
Annual TCPF fee revenue requirement	\$ 592,350	
Annual debt service on TCPF bonds (20 year bonds)		\$ 398,152
Active in-city water accounts as of June 30, 2016	2,700	2,700
Fiscal 2017-18 monthly TCPF per active in-city water account	<u>\$ 18.28</u>	<u>\$ 12.29</u>

City Staff and the rate study project team were tasked with identifying a new dedicated funding source that could fund the projected \$6.7 million. This effort resulted in the formulation of a monthly fee that would be added to all active water customers' bills within the City. Our analysis of fiscal 2017-18 budget and utility billing data indicate this transportation capital projects fee could be in the range of \$12.29 - \$18.28 per active account per month. The low end of the range assumes the City borrows (bonds) the total revenue requirement of the program, and pledges the monthly rate revenues to pay the future debt service on the bonds. The high end of the range assumes a pay as you go strategy.

Rate Study Conclusions and Recommendations

Conclusions

On balance, the City's utilities are in good financial condition. Fund balances exceed minimum operating reserve requirements for water and stormwater. However, the projected ending fund balance in the wastewater fund on June 30, 2018 does not meet a minimum reserve requirement of 60 days of operating expenses, and will have to be rectified via future general rate increases. Revenue bond debt service coverage on water and wastewater debt exceeds covenants.

Over the next five years (including the fiscal year that just started on July 1, 2017), the water utility has planned capital improvements that total \$6.9 million (adjusted for inflation). In order to keep rate increases manageable, our modeling indicates the City will have to borrow approximately \$3.8 million over this time frame (before issuance costs and debt service reserves funding). The balance of the water system capital costs will be funded from SDCs (\$2.1 million), and cash contributions from rates (\$1.0 million). By the end of fiscal 2021-22, we are forecasting total principal and interest payments on this new water system debt to be \$263,207 per year (assuming 20 year senior lien revenue bonds). Fortunately, the current water system legacy debt, the Series 2010 Water Refunding Revenue Bonds will be retired in fiscal 2017-18 freeing up \$350,000 per year in free cash flow. By the end of this five year forecast period, we estimate the water SDC fund will have an ending fund balance of \$82k and the water operating fund will have an ending fund balance of \$350k. This can be accomplished with average annual rate increases of 2.86% per year, and will be sufficient to meet system financial needs.

The wastewater utility is facing some financial challenges. First, the utility has \$3.8 million in principal outstanding on long term debt as of June 30, 2017. This legacy debt consists of the 2010 sewer refunding bonds and the 2008 Clean Water State Revolving Fund (SRF) loan. These debts will not be retired until 2025 for the bonds, and 2028 for the loan. The total annual debt service on these two debt instruments is \$502k per year. Second, over the next five years, the wastewater utility is planning on spending \$7.1 million (adjusted for inflation) on capital improvements. In order to manage future rate spikes resulting from this spend, our modeling indicates the City will have to bond a significant portion of the future capital projects costs. Out of the \$7.1 million need, we conclude the City will have to borrow \$6.0 million (before issuance costs and debt service reserves funding). Even though most of the total is SDC eligible, the City will only be able to contribute \$846k in SDCs over the forecast horizon. This is due to low wastewater SDC fund balance and the City policy of using SDCs to pay the annual principal component of the SRF loan debt service. Finally, based on the adopted fiscal 2017-18 wastewater system budget, the City is projected to end the year with an operating reserve of \$215k (i.e., Wastewater Fund ending fund balance). This reserve represents 35 days of wastewater system operating expenses, and is well below our recommended reserve level of 60 days of operating expenses. In order to correct this deficiency, we have gradually increased rates over the five year forecast horizon to bring the wastewater fund balance up to 60 days of operating expenses by June 30, 2022. Our modeling indicates that all of these system requirements can be funded with average annual rate increases of 6.09% per year. By the end of the five year forecast

horizon, we project the wastewater SDC fund will have an ending fund balance of \$129k, and the wastewater operating fund will have a corresponding cash balance of \$440k.

The stormwater utility has a revenue recovery problem, and the City Council is aware of this problem. In 1999, the City adopted a stormwater fee methodology to provide a mechanism that would generate revenue for the maintenance and operation of the stormwater collection and detention system. That fee methodology used impervious area (IA) as the basis for charging customers. Initially, the City assumed single family residential customers contributed 2,640 square feet of IA per home. This became the basis for the Equivalent Dwelling Unit (EDU). The plan then called for the City to measure the IA from all commercial, industrial, and institutional customers (via GIS data) to calculate their fees. The measured IA for each of these non-single family residential customers would be divided by 2,640 to calculate the number of EDUs they contributed to the system and then be billed at the rate of \$2.00 per EDU. Unfortunately, at the time of implementation, the City chose to “cap” the total number of EDUs that any non-single family residential customer would be charged at 20 EDUs. This policy has resulted in an under recovery of revenues required to fund the operations and maintenance of the stormwater systems. During the fiscal 2017-18 budget process, the City Council was apprised of this commercial cap policy, and they have decided to discontinue the policy and they have directed Staff to bill the non-single family residential accounts based on their actual measured IA. As part of this process, Public Works staff have remeasured all parcels in the City (via geographical information system (GIS) data) and have recalibrated the EDU to 2,980 square feet of IA. We have assumed this will be the case, and have recommended the City set the current monthly rate per EDU at \$3.60. If the cap policy had been continued, the calculated rate would have been \$4.51 per EDU.

The methodology that we are proposing for the construction of a transportation capital projects fee is based on generally accepted rate making practice, and has been reviewed by City Staff. We believe the City is justified in implementing this fee because there is no other dedicated funding source that we could find to meet the need. There are two options for the construction of the fee, as discussed in the opening remarks of this report. If the City bonds the entire capital projects revenue requirement, the monthly fee comes to \$12.29 per active utility account per month. If the City chooses to follow a pay as you go strategy, the fee comes to \$18.28 per active utility account per month.

Recommendations

The recommendations of this municipal utilities rates study are pragmatic and reasonable. Our recommendations are focused on securing the financial future of the utilities and to make sure that all customers who receive the benefits of utilities services pay their proportionate share of the costs of delivering those utility services. We specifically recommend the following:

- No rate increases are required for the current fiscal year 2017-18. However, beginning on July 1, 2018, we recommend the City adjust utility rates by an average annual percentage increase through June 30, 2023 as follows:
 - ✓ Water 2.86% per year for each year of the five year forecast
 - ✓ Wastewater 6.09% per year for each year of the five year forecast
 - ✓ Stormwater..... 3.5% per year for each year of the five year forecast
- Follow through with the elimination of the current stormwater fee “capping” policy for non-single family residential properties. The primary purpose of the stormwater utility is to keep City streets clear of standing stormwater, eliminate localized flooding throughout the City, and enhance the water quality in the receiving streams. Exemptions only hamper the City from completing this mission.
- Present the proposed methodology for implementing a monthly transportation capital projects fee to the Molalla City Council via work session. Offer both of the funding options (i.e., bonding of the revenue requirement and the pay as you go strategy), and get feedback from the Council. If the Council chooses to proceed with one of the options, develop a customer outreach and education plan for rolling out the fee. Consider a target implementation date of July 1, 2018.
- Continually monitor the cash position of the wastewater fund. If the fund balance falls below 30 days of operating expenses in this fiscal year (FY 2017-18), consider implementing cost controls and or an interim rate increase to bring the fund balance up. Our proposed future wastewater rate increases are programmed to build the fund balance to an acceptable reserve level of 60 days of operating expenses over five years.

Neighboring Communities' Utility Rates

Shown below in Figures 8 through 12 are charts that compare the current utility rates for a single family customer in Molalla to the same charges in similar communities in the region.

Figure 6 - Comparison of Neighboring Communities' Water Rates

Regional Water Rates for 10 Ccf of Water per Month - July, 2017

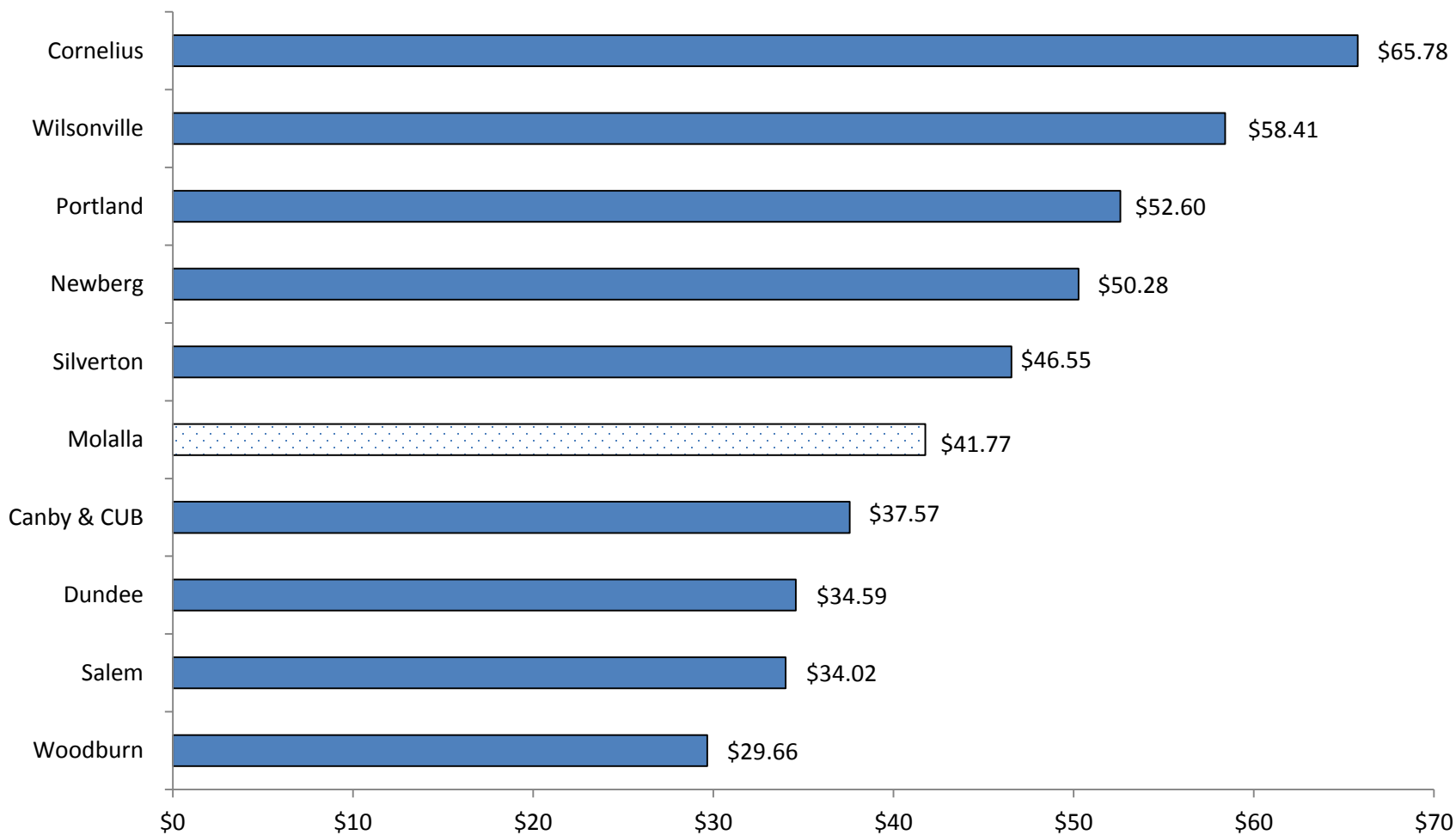


Figure 7 - Comparison of Neighboring Communities' Wastewater Rates

Regional Wastewater Rates for 5.5 Ccf of Winter Average Monthly Flow - July, 2017

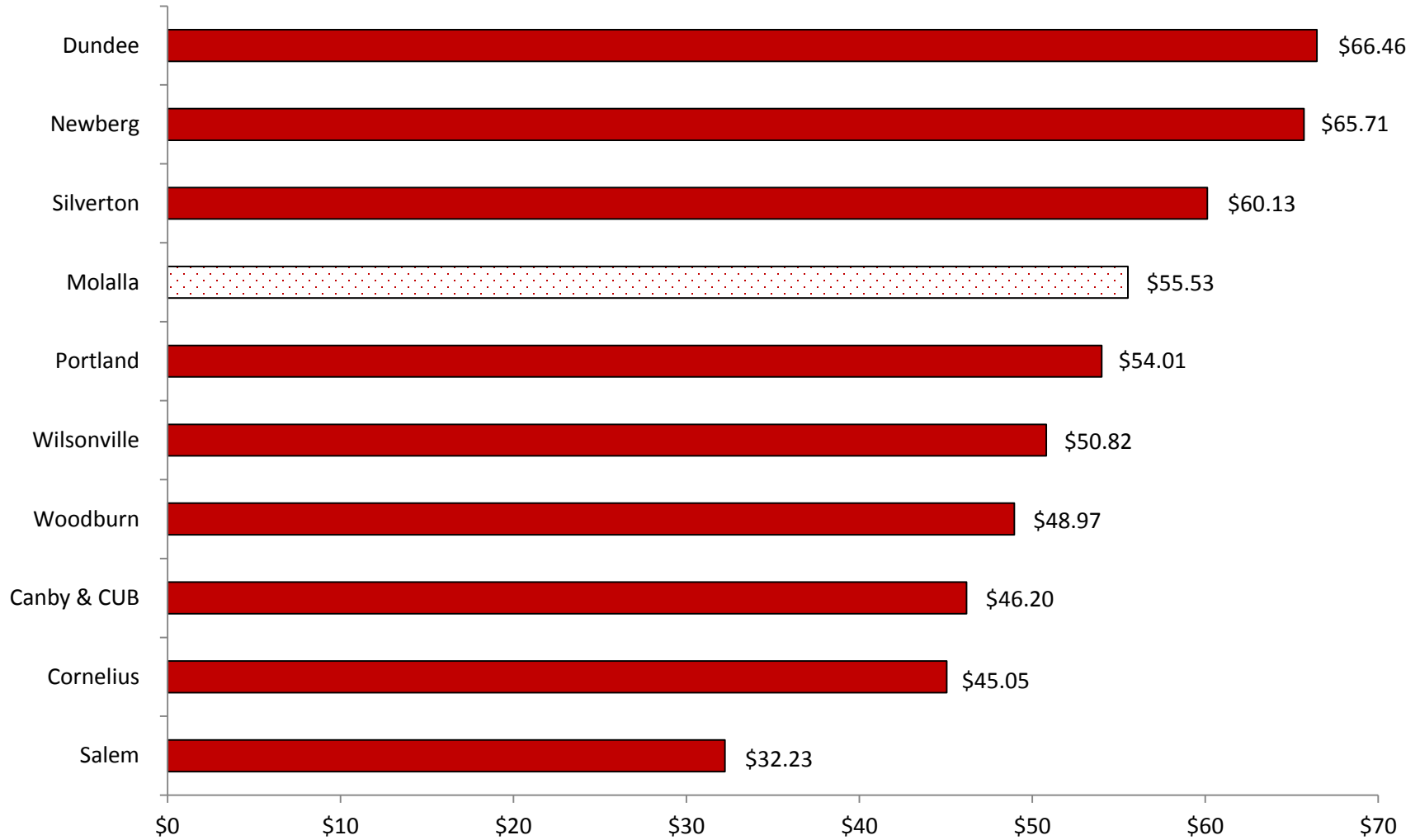


Figure 8 – Comparison of Neighboring Communities' Street Maintenance Fees

Regional Monthly Combined Street Lighting and Street Maintenance Rates - July, 2017

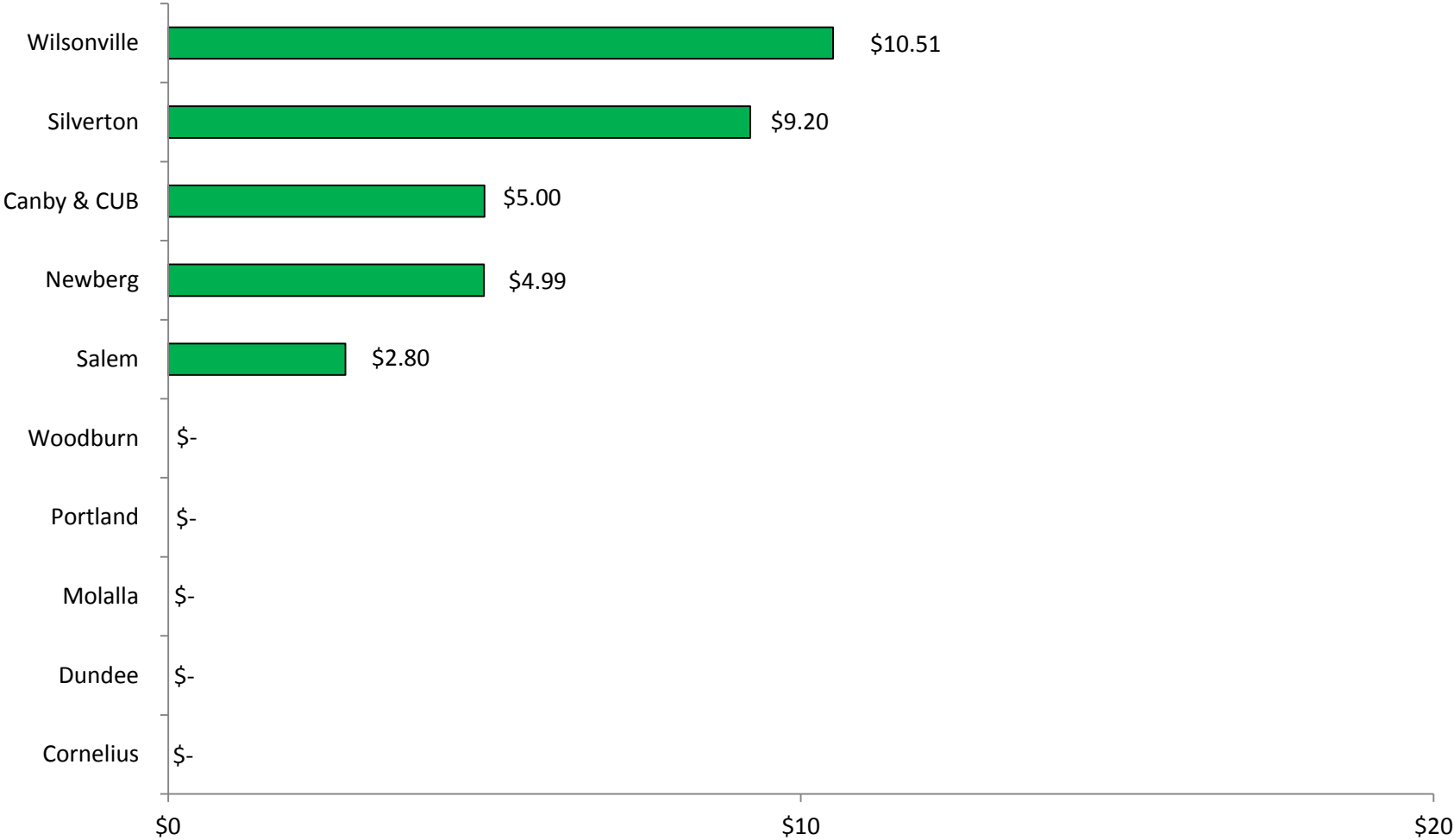


Figure 9 - Comparison of Neighboring Communities' Stormwater Rates

Regional Monthly Stormwater Rates - July, 2017

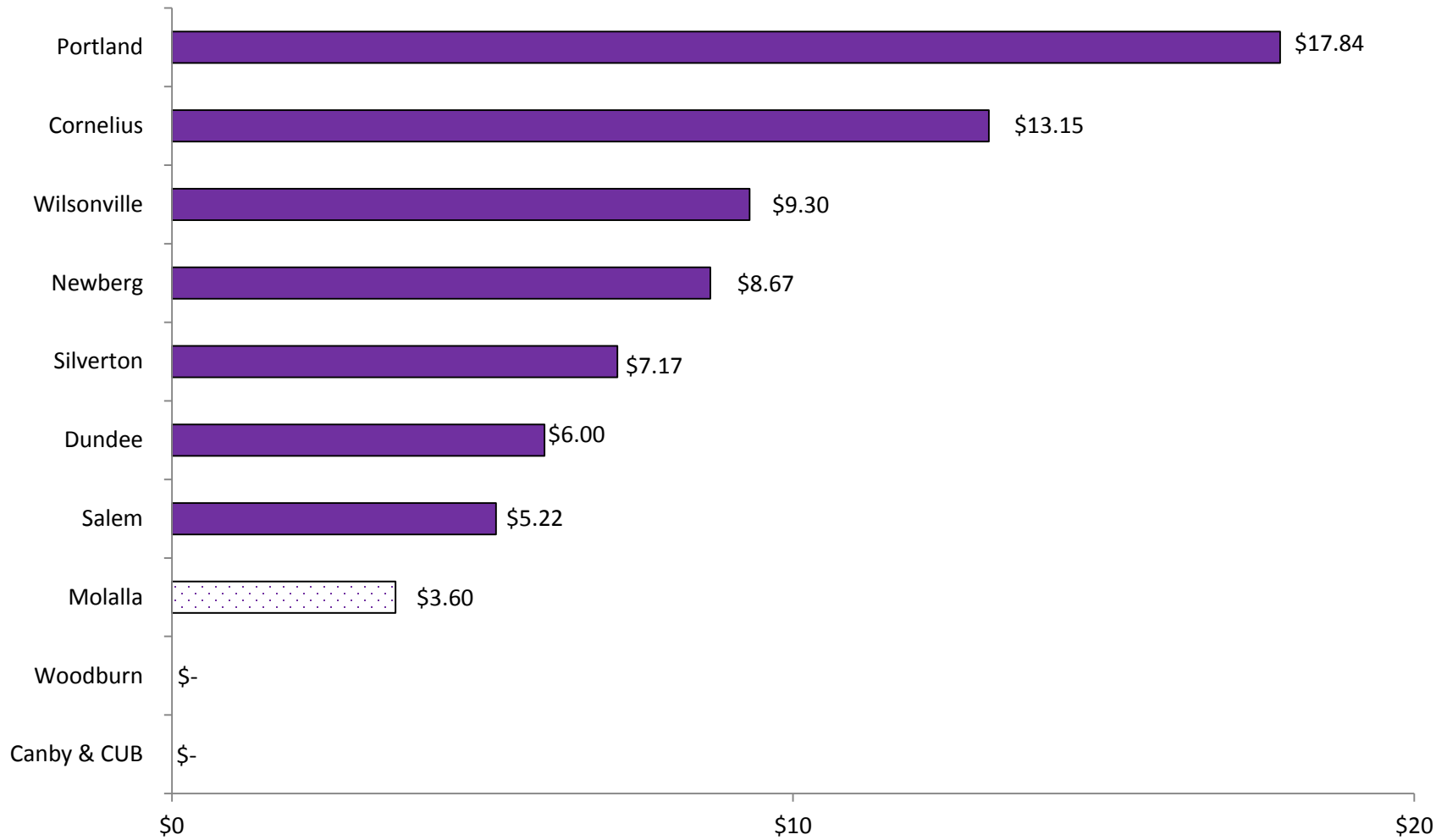
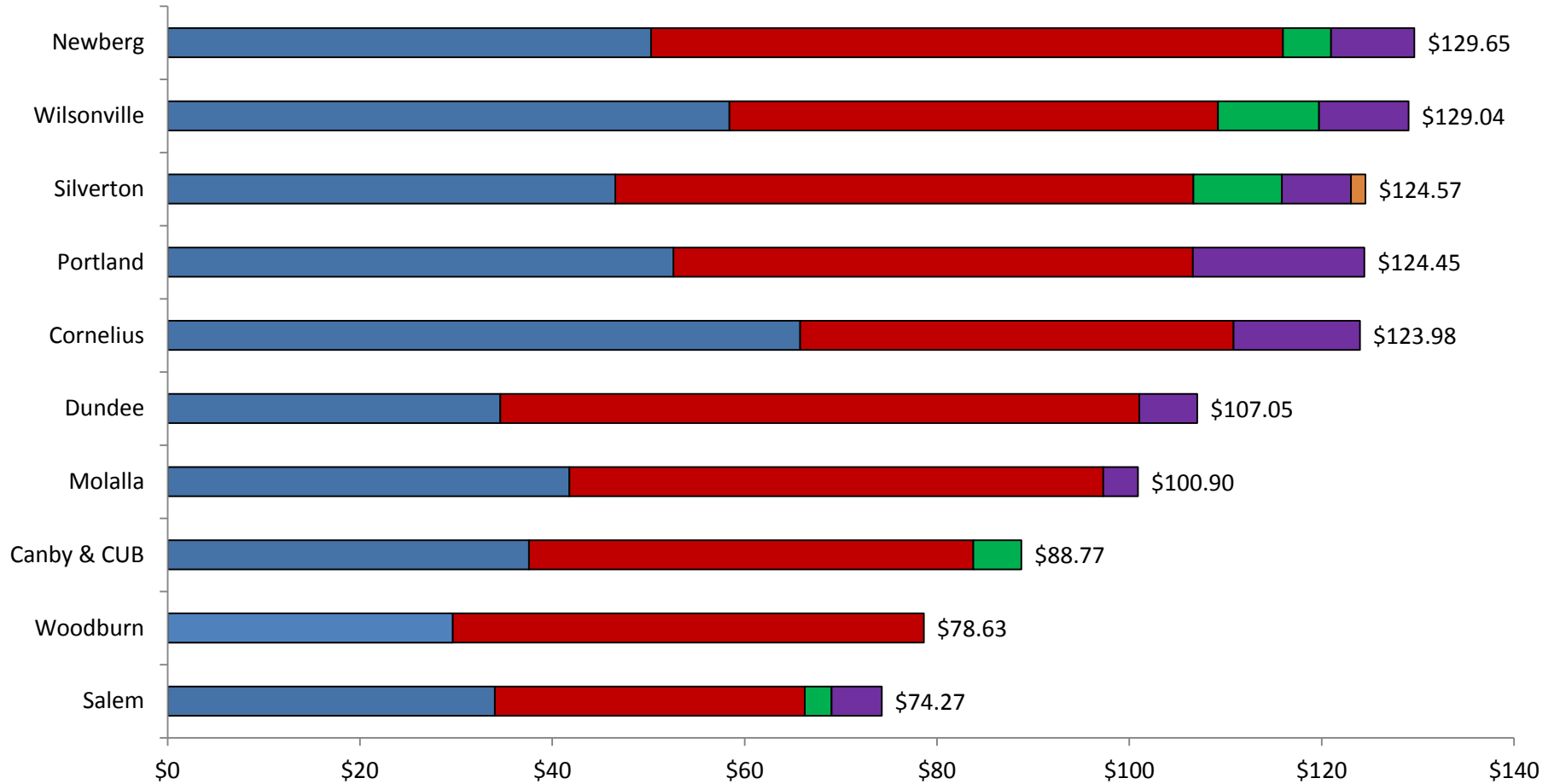


Figure 10 - Comparison of Neighboring Communities' Combined Water, Wastewater, Street Maintenance, Stormwater Rates, and Parks



	Salem	Woodburn	Canby & CUB	Molalla	Dundee	Cornelius	Portland	Silverton	Wilsonville	Newberg
Water	\$34.02	\$29.66	\$37.57	\$41.77	\$34.59	\$65.78	\$52.60	\$46.55	\$58.41	\$50.28
Wastewater	\$32.23	\$48.97	\$46.20	\$55.53	\$66.46	\$45.05	\$54.01	\$60.13	\$50.82	\$65.71
Street Maintenance	\$2.80	\$-	\$5.00	\$-	\$-	\$-	\$-	\$9.20	\$10.51	\$4.99
Stormwater	\$5.22	\$-	\$-	\$3.60	\$6.00	\$13.15	\$17.84	\$7.17	\$9.30	\$8.67
Parks	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$1.52	\$-	\$-
Total	\$74.27	\$78.63	\$88.77	\$100.90	\$107.05	\$123.98	\$124.45	\$124.57	\$129.04	\$129.65

City Of Molalla

City Council Meeting



Agenda Category: New Business – Report

Subject: Street Maintenance Utility Fee Options

Recommendation: Council Review

Date of Meeting to be Presented: August 09, 2017

Fiscal Impact: None

Background:

Attached is a report from Public Works for City Council consideration. Staff recommends that Council review and discuss the report provided by Public Works and determine if it wants staff to prepare a Street Maintenance Utility Fee resolution for review and approval.

SUBMITTED BY: Gerald Fisher, Public Works Director
APPROVED BY: Dan Huff, City Manager



Public Works Department
 117 N Molalla Avenue
 PO Box 248
 Molalla, Oregon 97038
 Phone: (503) 829-6855
 Fax: (503) 829-3676

August 04, 2017

TO: Dan Huff, City Manager

FROM: Gerald Fisher, Public Works Director

RE: Street Maintenance Utility Fee Options

Dan,

On August 10, 2016, staff presented the Pavement Management Budget Options Report to City Council outlining the existing Pavement Condition Index (PCI) and budget alternatives. The PCI at that time was rated at an average of 61 which is considered Fair (50-69) on the PCI rating curve. Staff did a preliminary review of the estimated amount of a Street Maintenance Utility Fee for the four scenarios presented in the report (Table 1).

Table 1 – Summary of outcome of different funding levels (Scenarios)

Scenario Name	Budget	Final PCI (change)	Deferred maintenance	2025 % good	2025 % Very Poor
1 – Unconstrained	\$16.4 million over 10 years	84 (+23)	\$0	96.4%	3.6%
2 – Increase PCI to 70 in 5 years	\$4.25 million over 5 years	70 (+9)	\$10.6 million	73.0%	18.0%
3 – Increase PCI to 75 in 5 years	\$8.0 million over 5 years	75 (+14)	\$6.7 million	79.9%	11.0%
4 – Increase PCI to 75 in 10 years	\$11.0 million over 10 years	75 (+14)	\$7.1 million	85.9%	10.0%
	2016 Values	61	\$6.35 million	40.6%	10.8%

The estimated monthly fee for a single family home was \$47.01 for Scenario 1, \$24.43 for Scenario 2, \$45.98 for Scenario 3, and \$31.61 for Scenario 4.

Council discussed the need for funding maintenance of the City’s roadway system and ongoing efforts by Clackamas County to raise funds through a voter approved tax. To date, no additional funding stream has come from the County for street maintenance and the state legislature increased the state gas tax. The City will receive additional revenues from the new legislation but it is unclear how much the City will receive for pavement preservation.

Last month staff received a pavement condition update from StreetSaver downgrading our PCI rating to 58 (see attached one page flier). This is likely due to little to no measurable pavement maintenance performed by the City due to lack of funding for street maintenance.

Staff has put together several exhibits outlining the PCI done in 2016, streets planned for maintenance under Scenario 2, the repairs recommended in the first year of Scenario 2, and a refined breakdown of cost per single family home per month. Scenario 2 was selected because it would bring the overall PCI up to a level that is above Fair though still leaving a maintenance backlog of \$10.6 million. Staff refined the methodology to count all single family homes, commercial properties, and industrial properties as one equivalent unit. Multifamily properties were based on number of units. An apartment complex with 10 units would be 10 equivalent units. This generated a total number 3,545 equivalent units. Based on this number staff prepared maps identifying the work that could be performed in the first year of Scenario 2. Pavement preservation options were selected assuming a monthly fee of \$5, \$7, \$9, \$11, and \$21 (fully funded). The exhibits demonstrate which street maintenance alternatives could be performed assuming mobilization, traffic control, and optimal pricing for street maintenance work. The number of streets that could actually be maintained would be based on timing of bids, contractor workload for the year, fuel and asphalt prices, and number of qualified contractors available to perform the work.

Recommendation for Funding

While we understand that fees for sewer, water, and stormwater will continue to go up due to capital needs and the City is also looking at what it would take to fund its Transportation Capital Improvement Plan projects, maintenance of existing roadways is not sustainable based on existing gas tax revenues and franchise utility fee allocations for the Street Fund. If the community wants to protect its investment in its roadways and preserve recently constructed roadways, such as Heintz Street, Grange Avenue, Stowers Road, and Molalla Avenue, then it will need to provide a sustainable source of revenue dedicated to pavement preservation. Other communities in Oregon have already realized the need for investment and have implemented a Street Maintenance Utility Fee. These cities include Ashland, Canby, Bay City, Corvallis, Eagle Point, Grants Pass, Hubbard, La Grande, Lake Oswego, Medford, Milwaukie, Newberg, North Plains, Oregon City, Philomath, Phoenix, Salem, Silverton, Stayton, Talent, Tigard, Tualatin, West Linn, Wilsonville to name a few.

While Public Works would prefer full funding of a street maintenance program we understand the burden of addition fees and its impact on our rate payers. No matter what funding level is approved, we will perform as much maintenance as possible with funding levels provided to us.

Pavement Management Budget Options Report



April, 2016

City of Molalla

Executive Summary

Capitol Asset & Pavement Services, Inc. was contracted by the City of Molalla Public Works department to perform a full pavement management implementation and visual inspections of all of the paved streets in the City of Molalla (City). All 27.16 centerline miles of paved streets maintained by the City were evaluated in accordance with MTC standards, and the Streetsaver Online 9.0 database was updated with the inspection data. Inspections were completed in April 2016.

The maintenance decision tree treatments and costs were reviewed and updated to reflect current pavement maintenance practices and treatment prices. Budgetary Needs analysis was performed based on the updated inspections and treatment costs and four budget scenarios were evaluated to compare the effects of various funding levels.

The City's street network consists of 27.16 centerline miles of streets. A detailed visual inspection of the City's streets resulted in a calculated average PCI of 61. Using a 0-100 PCI scale, with 100 being the most favorable, a rating of 61 places the City's street network in the 'Fair' condition category.

Four scenarios were analyzed for various street maintenance funding levels. The budget includes preventative maintenance and rehabilitation work for existing paved street surfaces. The recommended strategy of street maintenance, along with current prices for the treatments, was entered into a decision tree matrix. This matrix defines what treatments need to be applied to streets in varying PCI condition. Utilizing this decision matrix, it was determined that the City will need to spend \$16.4 million over the next ten years to bring the street network into 'optimal' condition, or an overall street network PCI of 84. At this level, the City should be able to maintain the street network in the future with mostly cost-effective preventative maintenance treatments (crack seals and surface seals). Scenarios were also run to determine the funding level required to increase the overall network PCI to 70 by 2020, 75 in 2020, and 75 in 2025. The City will need to invest significant funding for street rehabilitation in order to meet these goals. Table 1 summarizes the findings of the Scenarios.

Table 1 – Summary of outcome of different funding levels (Scenarios)

Scenario Name	Budget	Final PCI (change)	Deferred maintenance	2025 % good	2025 % Very Poor
1 – Unconstrained	\$16.4 million over 10 years	84 (+23)	\$0	96.4%	3.6%
2 – Increase PCI to 70 in 5 years	\$4.25 million over 5 years	70 (+9)	\$10.6 million	73.0%	18.0%
3 – Increase PCI to 75 in 5 years	\$8.0 million over 5 years	75 (+14)	\$6.7 million	79.9%	11.0%
4 – Increase PCI to 75 in 10 years	\$11.0 million over 10 years	75 (+14)	\$7.1 million	85.9%	10.0%
	2016 Values	61	\$6.35 million	40.6%	10.8%

Purpose

This report is intended to assist the City of Molalla with identifying street maintenance priorities specific to the City.

The report examines the overall condition of the street network and highlights the impacts of various funding levels on the network pavement condition and deferred maintenance funding shortfalls. The Metropolitan Transportation Commission, MTC, Streetsaver Pavement Management Program (PMP) was used for this evaluation. The intent of this program is to develop a maintenance strategy that will improve the overall condition of the street network to an optimal Pavement Condition Index (PCI) in the low to mid 80's and also to maintain it at that level.

The MTC Streetsaver program maximizes the cost-effectiveness of the maintenance treatment plan by recommending a multi-year street maintenance and rehabilitation plan based on the most cost-effective repairs available. A comprehensive preventative maintenance program is a critical component of this plan, as these treatments extend the life of good pavements at a much lower cost than rehabilitation overlay or reconstruction treatments. To this end, various 'what-if' analyses (scenarios) were conducted to determine the most cost-effective plan for maintaining the City's street network over ten years and at various funding levels.

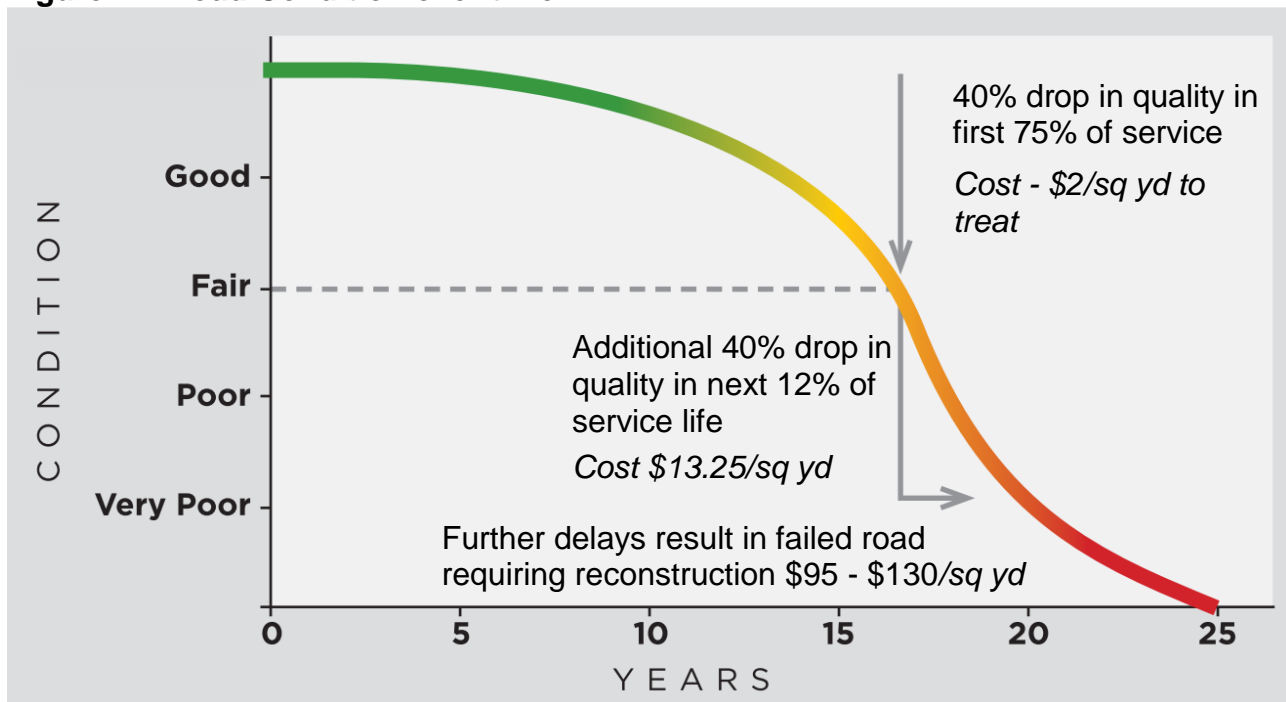
Pavement Management Strategy

Pavement Management is a set of tools and philosophies designed to manage the maintenance activities of Asphalt Concrete and Portland Concrete Pavements. A Pavement Management System consists of a module to keep track of existing and historical pavement condition data and a decision making process to help choose the most cost-effective maintenance strategies and which streets to treat when.

Conventional wisdom of most public works and street department agencies has been to treat streets in a “worst-first” philosophy. Under this “worst-first” policy, streets are allowed to deteriorate to a nearly failed condition before any rehabilitation (such as Overlays or Reconstructions), are applied. This can also be called the “don’t fix if it aint broke” mentality.

Pavement Management Systems are designed with a more cost-effective, “Best-first” approach. The reasoning behind this philosophy is that it is better to treat streets with lower-cost, preventative maintenance treatments, such as Slurry Seals, Chip Seals, and Crack Seals, and extend their life cycle, before the street condition deteriorates to a state where it requires more costly rehabilitation and reconstruction treatments. Generally, paved streets spend about three-quarters of their life-cycle in fair to excellent condition, where the street shows little sign of deterioration, and has a high service level. After this time, the street condition begins to deteriorate at a rapid rate and, if not maintained properly, soon reaches a condition where it will require costly overlays and reconstructions. If treated with a surface seal and other preventative measures, the street condition will remain at a good level for a longer period of time. Figure 1 shows a typical condition deterioration curve for a street.

Figure 1 – Road Condition over time



Existing Pavement Condition

The City is responsible for the repair and maintenance of 27.16 centerline miles of paved streets. The City's street network replacement value is estimated at \$52.4 million.¹ This asset valuation assumes replacement of the entire street network in present day dollars. This represents a significant asset for City officials to manage.

The average overall network Pavement Condition Index (PCI) of the City's street network is 61, which indicates that the street network is in 'Fair' condition. The Pavement Condition Index is a measurement of pavement condition that ranges from 0 to 100. A newly constructed or overlaid street would have a PCI of 100, while a failed street (requiring complete reconstruction) would have a PCI under 25. Appendix B contains a report detailing the PCI information for each street.

Table 2 details the network statistics and pavement condition by functional class. Table 3 and Figure 2 present the Percent Network Area by Functional and Condition classes.

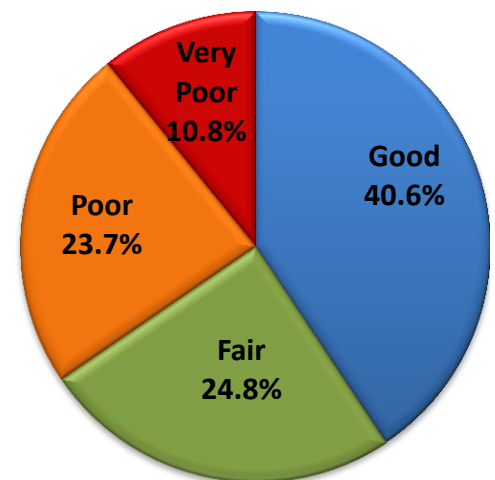
Table 2 – Street Network Statistics and Average PCI by Functional Class

Functional Class	Centerline Miles	Lane Miles	# of Sections	% of Network (by Area)	Average PCI
Arterial	1.21	2.41	8	5.7%	41
Collector	5.09	10.18	25	18.6%	63
Residential	20.87	41.73	175	75.7%	62
Totals	27.16	54.33	208	--	61

Table 2 details the percentage of the street network area by each PCI range or condition category.

Table 3 and Figure 2 – Percent Network Area by Functional Class and Condition Class

Condition Class	PCI Range	Arterial	Collector	Residential	Total
Good (I)	70-100	0.0%	5.8%	34.8%	40.6%
Fair (II/III)	50-69	0.0%	8.4%	16.4%	24.8%
Poor (IV)	25-49	5.7%	4.4%	13.7%	23.7%
Very Poor (V)	0-24	0.0%	0.0%	10.8%	10.8%
Totals		5.7%	18.6%	75.7%	



¹ Replacement value is calculated as the current cost to reconstruct each street in the network

Present Cost to Repair the Street Network

The MTC Pavement Management Program (PMP) is designed to achieve an optimal network PCI somewhere between the low and mid 80's, which is in the middle of the good condition category. In other words, the system will recommend maintenance treatments in an attempt to bring all of the streets in the City to a 'good' condition, with the majority of the streets falling in the low to mid 80's PCI range. Streets with a PCI in the 80's (as opposed to 70's) will likely remain in the 'good' condition category for a longer period of time if relatively inexpensive preventive maintenance treatments are used. Once the PCI falls below 70, more expensive rehabilitation treatments will be needed.

The Budget Needs module of the PMP estimates a necessary funding level for the City's Pavement Preservation and Rehabilitation Program of \$16.4 million² over the next ten-year period (2016 – 2025) in order to improve and maintain the street network PCI at an optimal level in the lower to mid 80's. The majority of this spending, \$14.0 million, occurs in the first five years.

As mentioned earlier, the average PCI for the City's streets is 61, which is in the 'Fair' condition category. Why then, does it cost so much to repair the City's streets, and why bother improving them?

First, the cost to repair and maintain a pavement depends on its current PCI. In the 'Good' category, it costs very little to apply preventive maintenance treatments. Such repairs extend the life of the pavement at relatively low costs, and prevent the pavement from deteriorating into conditions requiring more expensive treatments. Preventive maintenance treatments include slurry seals, chip seals, and crack sealing, which can extend the life of a pavement by correcting minor faults and reducing further deterioration. Minor treatments are applied before pavement deterioration becomes severe and usually costs less than \$2.10/sq. yd³. 40.6% of the City's street network would benefit from these relatively inexpensive, life-extending treatments.

Once the PCI falls below 70, more expensive rehabilitation treatments may become necessary. Rehabilitation treatments, such as overlays (with or without mill), inlays, and reconstructions, add structure to the road and correct more serious distresses.

24.8% of the City's street network falls into the 'Fair' condition category. Pavements in this range show some form of distress caused by traffic load related activity or environmental distress that requires more than a life-extending treatment. At this point, a well-designed pavement will have served at least 75 percent of its life with the quality of the pavement dropping approximately 40 percent. The street surface may require a slurry seal with crack seal at \$3.05/sq yd or 2.5" overlay at \$13.25/sq yd.

23.7% of the Town's street network is in the 'Poor' condition category. These pavements are near the end of their service lives and often exhibit major forms of distress such as potholes, extensive cracking, etc. At this stage, a streets usually requires a thick overlay at \$13.25/sq yd.

² Treatment costs are based on this year's average costs per square yard, with future years including a 3% inflation adjustment per year after 2016.

³ For detailed treatments and costs used in analysis for this report, see appendix C – Decision Tree report

10.8% of the Town's street network is in the 'Very Poor' condition category. Streets in the 'Very Poor' condition category indicate that the street has failed. These pavements are at the end of their service lives and have major distresses, often indicating the failure of the sub base. Streets at this stage require major rehabilitation, usually the complete reconstruct of the street. Estimated costs to reconstruct the street surface are \$95 to \$130/sq yd.

One of the key elements of a pavement repair strategy is to keep streets that are in the 'Good' or 'Fair' categories from deteriorating. This is particularly true for streets in the 'Fair' range, because they are at the point where pavement deterioration accelerates if left untreated. However, the deterioration rate for pavements in the 'Poor' to 'Very Poor' range is relatively flat and the condition of these streets will not decline significantly if repairs are delayed. As more 'Good' streets deteriorate into the 'Fair', 'Poor', and 'Very Poor' categories, the cost of deferred maintenance will continue to increase. The cost of the deferred maintenance backlog will stop increasing only when enough funds are provided to prevent streets from deteriorating into a worse condition category, or the whole network falls into the 'Very Poor' category (i.e. can not deteriorate any further). The deferred maintenance backlog refers to the dollar amount of maintenance and rehabilitation work that should have been completed to maintain the street in "good" condition, but had to be deferred due to funding deficiencies for preventative maintenance and/or pavement rehabilitation programs. The actual repairs that are being deferred are often referred to as a "backlog."

Budget Needs

Based on the principle that it costs less to maintain streets in good condition than bad, the MTC PMP strives to develop a maintenance strategy that will first improve the overall condition of the network to an optimal PCI somewhere between the low and mid 80's, and then sustain it at that level. The average PCI for the City is 61, which is in the 'Fair' condition category. Current funding strategies demonstrate there is a \$11.0 million deferred maintenance backlog⁴ in the first year of the scenario. If these issues are not addressed, the quality of the street network will inevitably decline. In order to correct these deficiencies, a cost-effective funding and maintenance and rehabilitation strategy must be implemented.

The first step in developing a cost-effective maintenance and rehabilitation strategy is to determine, assuming unlimited revenues, the maintenance "needs" of the City's street network. Using the PMP Budget Needs module; street maintenance needs are estimated at \$16.4 million over the next ten years. If the City follows the strategy recommended by the program, the average network PCI will increase to 84. If, however, current pavement maintenance funding is exhausted and little or no maintenance is applied over the next ten years, already distressed streets will continue to deteriorate, and the network PCI will drop to 40. The results of the Budget Needs analysis are summarized in Table 5.⁵

⁴ Definition of deferred maintenance backlog can be found in Appendix A

⁵ Actual program outputs are included in Appendixes B through F

Table 5. Summary of Results from Needs Analysis

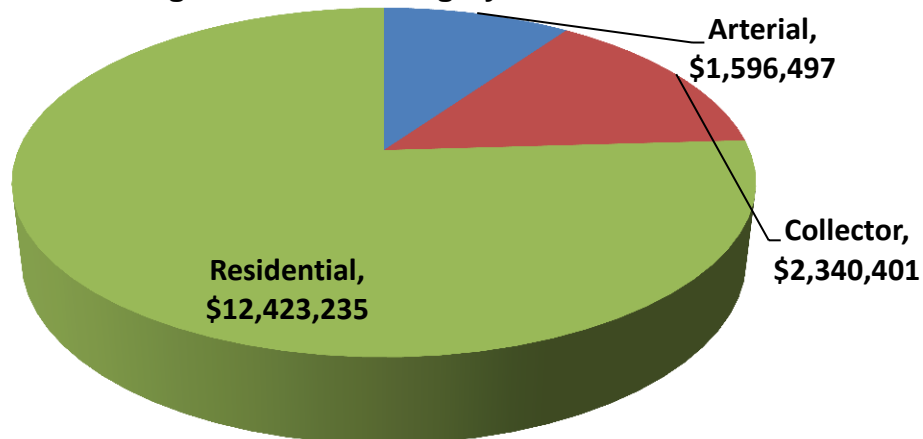
<i>Fiscal Years</i>	2016	2017	2018	2019	2020	5 year subtotal
PCI with Treatment	77	77	79	83	84	
PCI, no Treatment	60	58	56	54	51	
Budget Needs	\$6,367,393	\$1,435,124	\$1,890,285	\$3,330,094	\$969,078	\$13,991,974
Rehabilitation	\$6,151,976	\$1,377,317	\$1,871,508	\$3,297,386	\$944,527	\$13,642,714
Preventative Maintenance	\$215,417	\$57,807	\$18,777	\$32,708	\$24,551	\$349,260

<i>Fiscal Years</i>	2021	2022	2023	2024	2025	10 year Total
PCI with Treatment	84	84	83	85	84	---
PCI, no Treatment	49	47	44	42	40	---
Budget Needs	\$208,551	\$1,002,109	\$132,688	\$848,217	\$176,594	\$16,360,133
Rehabilitation	\$169,738	\$928,452	\$0	\$390,644	\$16,728	\$15,148,276
Preventative Maintenance	\$38,813	\$73,657	\$132,688	\$457,573	\$159,866	\$1,211,857

Table 5 shows the level of expenditure required to raise the City’s pavement condition to an optimal network PCI of 84 and eliminate the current maintenance and rehabilitation backlog. The results of the Budget Needs analysis represent the ideal funding strategy recommended by the MTC PMP. Of the \$16.4 million in maintenance and rehabilitation needs shown, approximately \$1.2 million or 7.4 percent is earmarked for preventative maintenance or life-extending treatments, while \$15.2 or 92.6 percent is allocated for the more costly rehabilitation and reconstruction treatments.

Figure 3 illustrates the funding distribution by street functional classification.

Figure 3. Budget Needs Funding by Functional Class



Budget Scenarios

Having determined the maintenance and rehabilitation needs of the City’s street network, the next step in developing a cost-effective maintenance and rehabilitation strategy is to conduct ‘what-if’ analyses. Using the PMP budget scenarios module, the impact of various budget scenarios can be evaluated. The program projects the effects of the different scenarios on pavement condition PCI and deferred maintenance (backlog). By examining the effects on these indicators, the advantages and disadvantages of different funding levels and maintenance strategies become clear.

1. *Unconstrained (zero “deferred” maintenance)* — The annual amounts, as identified in the Budget Needs analysis totaling \$16.4 million over 10 years, were input into the Budget Scenarios module. This scenario shows the effects of implementing the ideal investment strategy (as recommended by the MTC PMP Needs module).
2. *Increase PCI to 70 in 5 years* — An average annual budget of \$850,000 was evaluated over ten years, for a total of \$4.25 million. This funding level increases the overall PCI to 70 by 2020.
3. *Increase PCI to 75 in 5 years* — An annual funding level of \$1.6 million per year, for a ten year total of \$8.0 million, was evaluated. This funding level increases the overall PCI to 75 by 2020.
4. *Increase PCI to 75 in 10 years* — An annual budget of \$1.1 million was evaluated over ten years, for a total of \$11.0 million. This funding level increases the overall PCI to 75 by 2025.

Table 6. Scenario Summary

Scenario Name	Budget	Final PCI (change)	Deferred maintenance	2025 % good	2025 % Very Poor
1 – Unconstrained	\$16.4 million over 10 years	84 (+23)	\$0	96.4%	3.6%
2 – Increase PCI to 70 in 5 years	\$4.25 million over 5 years	70 (+9)	\$10.6 million	73.0%	18.0%
3 – Increase PCI to 75 in 5 years	\$8.0 million over 5 years	75 (+14)	\$6.7 million	79.9%	11.0%
4 – Increase PCI to 75 in 10 years	\$11.0 million over 10 years	75 (+14)	\$7.1 million	85.9%	10.0%
	2016 Values	61	\$6.35 million	40.6%	10.8%

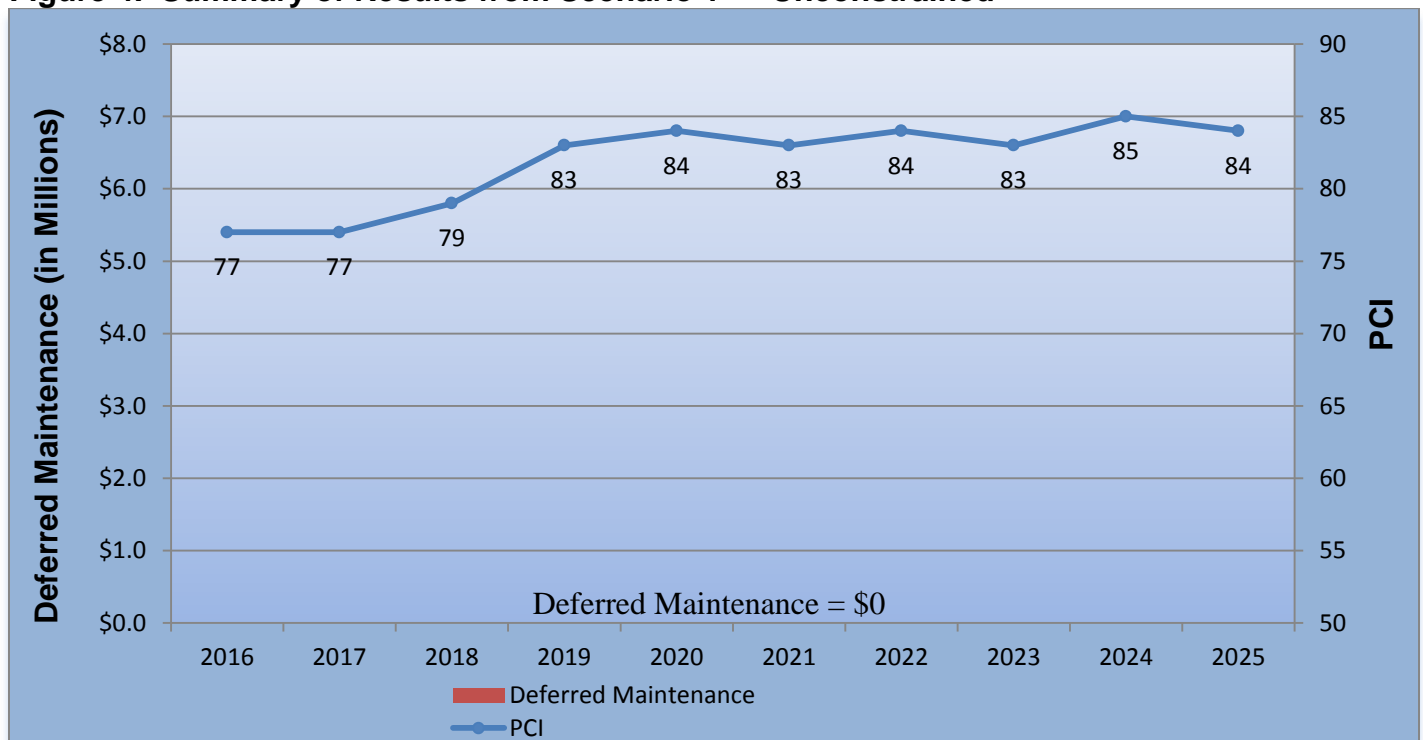
Scenario 1 — Unconstrained (zero deferred maintenance)

This scenario shows the effects of implementing the ideal investment strategy (as recommended by the MTC PMP Needs module). Because it is more cost-effective to eliminate the deferred maintenance backlog as quickly as possible, the bulk of the maintenance needs are addressed in the first five years of the ten-year program, raising the overall average network PCI to 84. The PCI maintains at an optimal level through 2025. By 2025, 96.4% of the network improves into the ‘Good’ condition category, a significant increase from the current level of 40.6% in ‘Good’ condition. These results are shown in both Table 7 and Figure 4.

Table 7. Summary of Results from Scenario 1 — Unconstrained

	2016	2017	2018	2019	2020	
Budget	\$6,367,393	\$1,435,124	\$1,890,285	\$3,330,094	\$969,078	
Rehabilitation	\$6,151,976	\$1,377,317	\$1,871,508	\$3,297,386	\$944,527	
Preventative	\$215,417	\$57,807	\$18,777	\$32,708	\$24,551	
Deferred	\$0	\$0	\$0	\$0	\$0	
PCI	77	77	79	83	84	
	2021	2022	2023	2024	2025	Total
Budget	\$208,551	\$1,002,109	\$132,688	\$848,217	\$176,594	\$16,360,133
Rehabilitation	\$169,738	\$928,452	\$0	\$390,644	\$16,728	\$15,148,276
Preventative	\$38,813	\$73,657	\$132,688	\$457,573	\$159,866	\$1,211,857
Deferred	\$0	\$0	\$0	\$0	\$0	---
PCI	83	84	83	85	84	

Figure 4. Summary of Results from Scenario 1 — Unconstrained



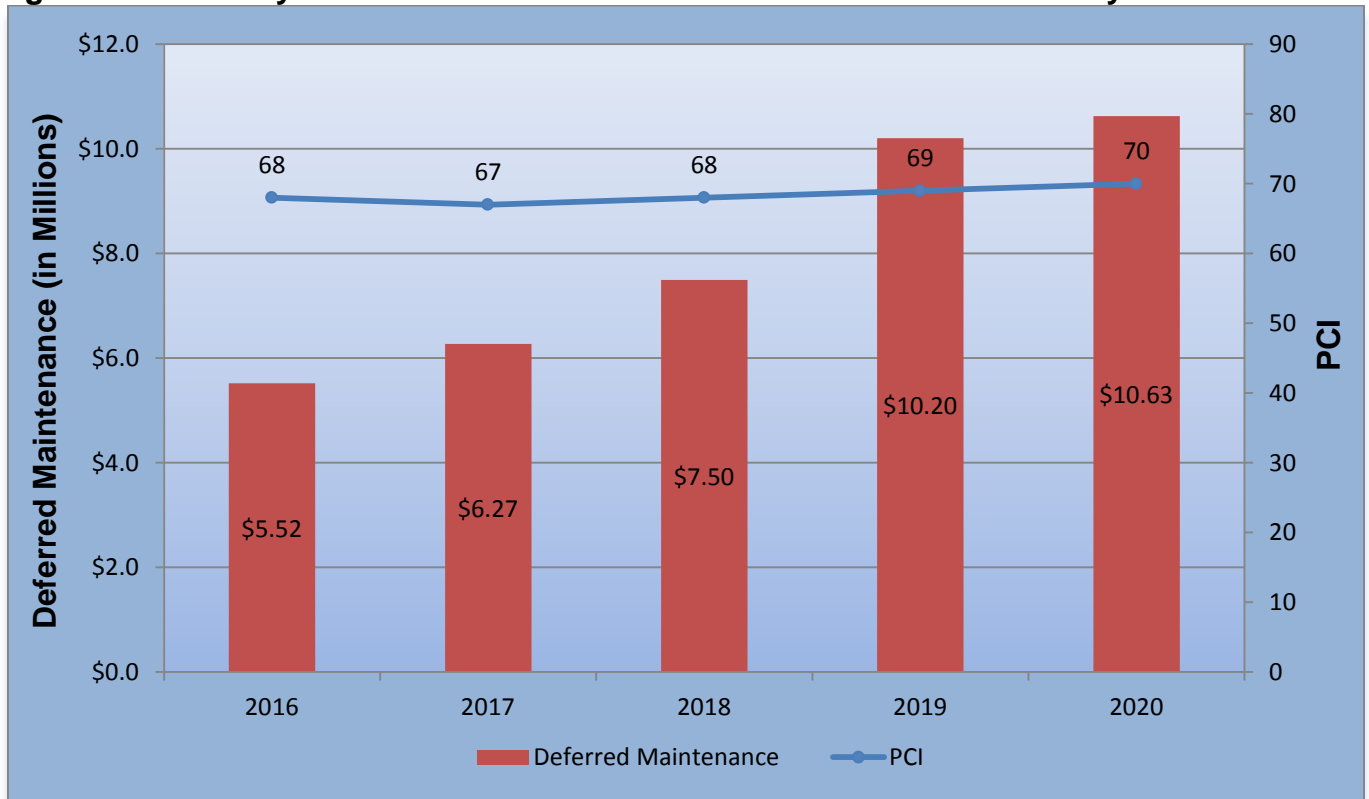
Scenario 2 — Increase PCI to 70 in 5 years

This scenario determines the funding level that would be required to increase the overall network PCI by 9 points, to 70 over the next five years. An annual investment level of \$850,000, for a total of \$4.25 million over five years, would be needed. At this funding level, the deferred maintenance increases by \$5.1 million, from \$5.5 million in 2016, to \$10.6 million in 2020. The percentage of the street network in the ‘Good’ condition category increases from 40.6% currently, to 73.0% in 2020. The percentage of roads in ‘Very Poor’ condition increases to 18.0% from the current level of 10.8%. These results are illustrated in Table 8 and Figure 5.

Table 8. Summary of Results from Scenario 2 — Increase PCI to 70 in 5 years

	2016	2017	2018	2019	2020	Total
Budget	\$850,000	\$850,000	\$850,000	\$850,000	\$850,000	\$4,250,000
Rehabilitation	\$777,028	\$795,987	\$752,399	\$798,807	\$799,915	\$3,924,136
Preventative	\$72,864	\$53,087	\$97,613	\$50,686	\$49,866	\$324,116
Deferred	\$5,517,483	\$6,269,057	\$7,497,408	\$10,202,930	\$10,628,993	---
PCI	68	67	68	69	70	

Figure 5. Summary of Results from Scenario 2 — Increase PCI to 70 in 5 years



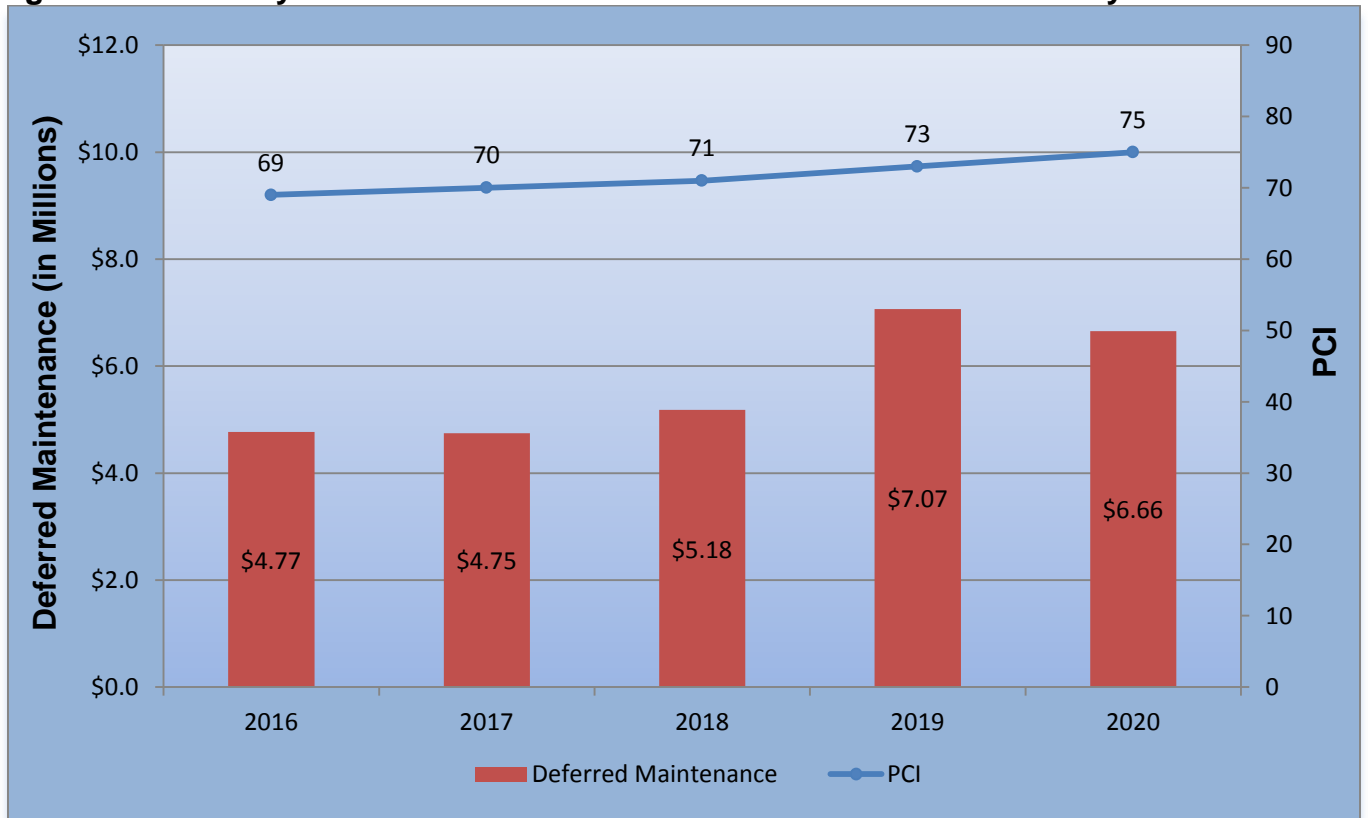
Scenario 3 — Increase PCI to 75 in 5 years

This scenario determines the funding level that would be required to increase the overall network PCI by 14 points, to 75 over the next five years. An annual investment level of \$1.6 million, for a total of \$8.0 million over five years, would be needed. At this funding level, the deferred maintenance increases by \$1.9 million, from \$4.8 million in 2016, to \$6.7 million in 2020. The percentage of the street network in the ‘Good’ condition category increases from 40.6% currently, to 79.9% in 2020. The percentage of roads in ‘Very Poor’ condition increases slightly, to 11.0% from the current level of 10.8%. These results are illustrated in Table 9 and Figure 6.

Table 9. Summary of Results from Scenario 3 — Increase PCI to 75 in 5 years

	2016	2017	2018	2019	2020	Total
Budget	\$1,600,000	\$1,600,000	\$1,600,000	\$1,600,000	\$1,600,000	\$8,000,000
Rehabilitation	\$1,547,911	\$1,518,742	\$1,563,337	\$1,534,342	\$1,512,176	\$7,676,508
Preventative	\$51,265	\$80,720	\$35,648	\$62,925	\$85,843	\$316,401
Deferred	\$4,768,197	\$4,746,910	\$5,180,619	\$7,068,866	\$6,655,608	---
PCI	69	70	71	73	75	

Figure 6. Summary of Results from Scenario 3 — Increase PCI to 75 in 5 years



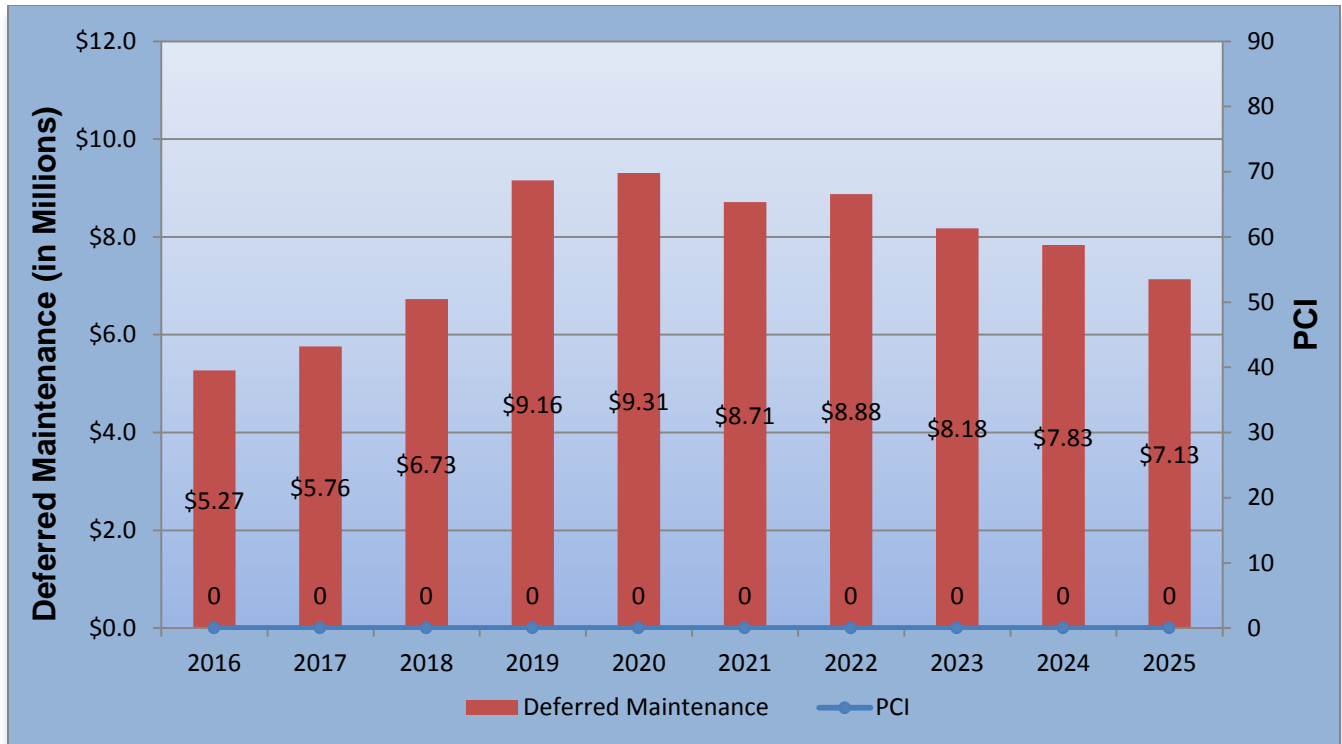
Scenario 4 — Increase PCI to 75 in 10 years

This scenario determines the funding level that would be required to increase the overall network PCI by 14 points, to 75 over the next ten years. An annual investment level of \$1.1 million, for a total of \$11.0 million over ten years, would be needed. At this funding level, the deferred maintenance increases by \$1.8 million, from \$5.3 million in 2016, to \$7.1 million in 2025. The percentage of the street network in the ‘Good’ condition category increases from 40.6% currently, to 85.9% in 2025. The percentage of roads in ‘Very Poor’ condition decreases from 10.8% currently, to 10.0% in 2025. These results are illustrated in Table 10 and Figure 7.

Table 10. Summary of Results from Scenario 4 — Increase PCI to 75 in 10 years

	2016	2017	2018	2019	2020	
Budget	\$1,100,000	\$1,100,000	\$1,100,000	\$1,100,000	\$1,100,000	
Rehabilitation	\$1,041,413	\$1,033,480	\$1,031,725	\$1,018,376	\$1,036,750	
Preventative	\$58,066	\$65,046	\$66,910	\$81,306	\$61,715	
Deferred	\$5,267,895	\$5,762,531	\$6,727,060	\$9,159,286	\$9,305,270	
PCI	68	68	69	70	71	
	2021	2022	2023	2024	2025	Total
Budget	\$1,100,000	\$1,100,000	\$1,100,000	\$1,100,000	\$1,100,000	\$11,000,000
Rehabilitation	\$1,018,532	\$1,038,813	\$1,032,292	\$926,596	\$938,286	\$10,116,263
Preventative	\$61,602	\$60,190	\$67,254	\$172,501	\$161,723	\$856,313
Deferred	\$8,712,885	\$8,877,768	\$8,177,433	\$7,834,473	\$7,134,406	---
PCI	72	73	73	74	75	

Figure 7. Summary of Results from Scenario 4 — Increase PCI to 75 in 10 years



Recommendations

Of the various maintenance and funding options considered, the *ideal* strategy for the City is presented in Scenario 1, with a ten-year expenditure total of \$16.4 million. Not only does this surface management plan improve the network PCI to an optimal level of 84, it also eliminates the entire deferred maintenance backlog. As examined scenarios deviate from this strategy, the cost to the City will increase in the long term. However, the amount of funds in the first year of expenditure, approximately \$12.1 million, may make this strategy unrealistic for the City.

A funding increase to \$850,000 per year would increase the overall network PCI to 70 over the next five years. At this funding level, the deferred maintenance backlog would nearly double however, increasing by \$5.1 million, from \$5.5 million in 2016, to \$10.6 million in 2020. This is mainly due to the increase in the portion of the street network that would be in a 'Very Poor' condition, and require expensive reconstruction treatments.

At a \$1.1 million funding level, the overall network PCI would increase to 75 over the next ten years. 85.9% of the street network would be in 'Good' condition, a vast improvement from the current level of 40.6% in 'Good' condition. This also slows the increase in deferred maintenance, from \$4.8 million in 2016, to \$6.7 million in 2020. Most of this increase is due to inflation. At present day costs, the increase is only \$250,000. The percentage of roads in 'Very Poor' condition decreases from 10.8% currently, to 10.0% in 2025.

As demonstrated in the different scenarios, the City needs to invest a significant amount of money on expensive rehabilitation and reconstruction projects. This will reduce the deferred maintenance backlog, increase the network PCI, and allow money to be spent for less capital-intensive treatments such as slurry seals, crack sealing, and thin overlays in the future.

The PMP Budget Needs Module is recommending \$14.8 million for streets in the 'Poor' to 'Very Poor' condition. Because these categories require extensive rehabilitation and reconstruction work, the work will consume approximately 90.4% of the planned costs, as estimated by the PMP. This places the city in a challenging position of trying to avoid increasing future street rehabilitation costs coupled with the risk of a substantial increase in an already significant ten year shortfall projection. Currently, 10.8% of the street network is in 'Very Poor' condition. However, this is likely to increase to 33.1% in ten years if current funding levels continue. This conclusion is noteworthy to the City Council. Unless funding is allocated to support an increase in the City's street rehabilitation program, the City may lose the opportunity to utilize lower cost preventative maintenance and light overlay treatment options.

The City should seek to increase funding for street maintenance. One strategy may be to implement a local fee dedicated solely to street maintenance and rehabilitation, such as a local gas tax or Transportation Utility Fee. A Transportation Utility Fee (sometimes known as a Street Maintenance Fee, Road User Fee, or Street Utility Fee) is a monthly fee based on use of the transportation system that is collected from residences and businesses within the City limits. The fee is based on the number of trips a particular land use generates and is collected through the City's regular utility bill. Adjustments can also be made for certain business types based on the nature of the traffic they create. For example garbage companies may be charged a higher rate due to the added damage heavy garbage trucks cause to streets. The fee is designated for use in the maintenance and repair of the City's transportation system. Users of the street system share the costs

of the rehabilitative and preventive maintenance needed to keep the street system operating at an adequate level.

Preparation of a budget options report is just one step in using the MTC PMP to build an effective street maintenance program. Recommendations for further steps are:

- Obtain detailed subsurface information on selected sections before major rehabilitation projects are contracted. Costs for large rehabilitation projects are extremely variable and estimates can sometimes be reduced following project-level engineering analysis. It is possible that only a portion of a street recommended for reconstruction actually requires such heavy-duty repair.
- Evaluate the specific treatments and costs recommended by the PMP, and modify them to reflect the actual repairs and unit costs that are expected to be used.
- Test other budget options with varying revenues and preventive maintenance and rehabilitation splits.
- Prepare a brief memo to City Officials outlining the recommended ten-year maintenance program. The memo should include the amount of revenues available for pavement repair, a list of streets to be repaired, and the type of repair to be completed (listed in order of year of scheduled treatment), as well as any requests for specific budgetary actions.

In addition to performing cyclic pavement condition inspections, unit cost information for the applications of various maintenance and rehabilitation treatments should be updated annually in the PMP 'Decision Tree Module'. If this data is not kept current, the City runs the risk of understating actual funding requirements to adequately maintain the street network. A pavement inspection cycle that would allow for the inspection of arterial and collector streets every two years and residential streets every four to four years is recommended.

The City has completed the foundation work necessary to execute a successful pavement management plan. The street system is 'Fair' condition, indicating that the City has not consistently applied sufficient funds to maintain their large capital investment in the street system. At the current investment level, the street condition will continue to deteriorate. To improve the condition of the street system and reduce the maintenance backlog, additional revenues and support from various decision-making bodies are required.

As more 'Good' streets deteriorate into the 'Poor' and 'Very Poor' categories, the cost of deferred maintenance will continue to increase. The cost of the deferred maintenance backlog will stop increasing only when enough funds are provided to prevent streets from deteriorating into a worse condition category, or when the whole network falls into the 'Very Poor' category (i.e. can not deteriorate any further). At that time, the network would have to be replaced at a cost of \$52.4 million.

Appendix A

Definitions

The *pavement condition index*, or PCI, is a measurement of the health of the pavement network or condition and ranges from 0 to 100. A newly constructed street would have a PCI of 100, while a failed street would have a PCI of 10 or less. The PCI is calculated based on pavement distresses identified in the field.

Network is defined as a complete inventory of all streets and other pavement facilities in which the City has jurisdiction and maintenance responsibilities. To facilitate the management of streets, they are subdivided into management sections identified as a segment of street, which has the same characteristics.

Urban Arterial street system carries the major portion of trips entering and leaving the urban area, as well as the majority of through movements desiring to bypass the central City. In addition, significant intra-area-travel such as between central business districts and outlying residential areas exists.

Urban Collector Street provides land access service and traffic circulation within residential neighborhoods, commercial, and industrial areas. It differs from the arterial system in that facilities on a collector system may penetrate residential neighborhoods.

Urban Local Street system comprises all facilities not one of the higher systems. It serves primarily to provide direct access to abutting land and access to the higher systems.

Preventive Maintenance refers to repairs applied while the pavement is in “good” condition. Such repairs extend the life of the pavement at relatively low costs, and prevent the pavement from deteriorating into conditions requiring more expensive treatments. Preventive maintenance treatments include slurry seals, crack sealing, and deep patching. Treatments of this sort are applied before pavement deterioration has become severe and usually cost less than \$2.00/sq. yd.

Deferred Maintenance refers to the dollar amount of maintenance and rehabilitation work that should have been completed to maintain the street in “good” condition, but had to be deferred due to funding deficiencies for preventative maintenance and/or pavement rehabilitation programs. The actual repairs that are being deferred are often referred to as a “backlog.”

Stop Gap refers to the dollar amount of repairs applied to maintain the pavement in a serviceable condition (e.g. pothole patching). These repairs are a temporary measure to stop resident complaints, and do not extend the pavement life. Stopgap repairs are directly proportional to the amount of deferred maintenance.

Surface Types – AC is an Asphalt Concrete street that has one year’s asphalt, for example a street that has been newly constructed reconstructed. In contrast AC/AC (in reports marked as O – AC/AC) is a street that has an overlay treatment over the original asphalt construction. Streets marked as ST do not have an asphalt concrete layer, only a surface composed of layers of oil and rock (macadam or chip seal).

‘Good’ Condition Category – Roads in ‘Good’ condition have no to little distresses found on them. These roads may have some minor surface weathering or small amounts of light cracking, and generally do not yet require any maintenance.

'Satisfactory' Condition Category – Roads in 'Good' condition have no to little distresses found on them. These roads may have some minor surface weathering or light cracking, but can generally be maintained with cost-effective preventative maintenance treatments (surface seals and crack seals).

'Fair' Condition Category – Roads in 'Fair' condition show some form of distress caused by traffic load related activity or environmental distress that requires more than a life-extending treatment. The MTC Streetsaver program separates these into two condition categories for the purposes of the analysis. Category II – 'non-load' and Category III – 'load-related', based on whether a majority of the distresses found had load or environmental related causes

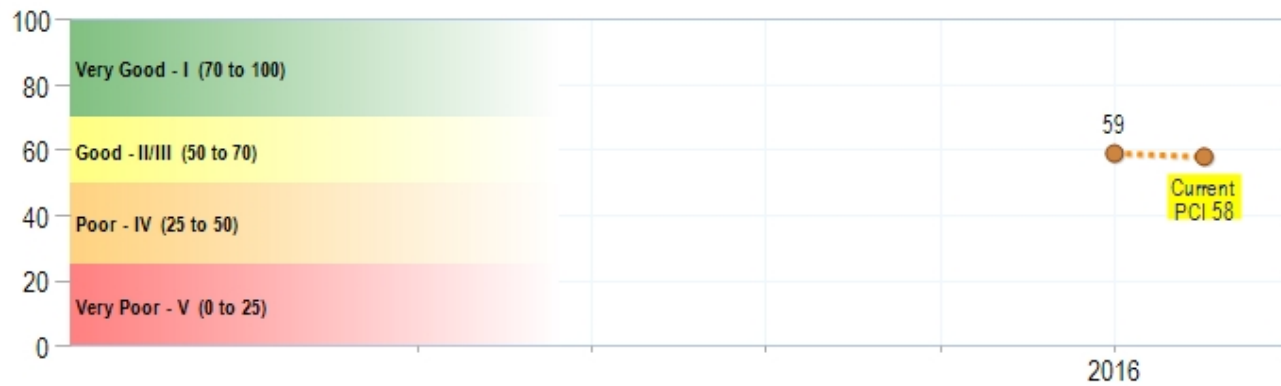
'Poor' Condition Category – Roads in 'Poor' condition are near the end of their service lives and often exhibit major forms of distress such as potholes, extensive alligator cracking, and/or pavement depressions.

'Very Poor' Condition Category - Roads in the 'Very Poor' condition category indicate that the road has failed. These pavements are at the end of their service lives and have major distresses, often indicating the failure of the sub base

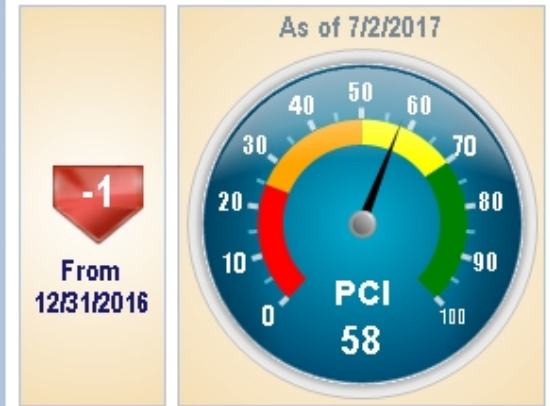
Load related distress - . Load related distresses, such as alligator cracking, rutting, and depressions are usually a sign of a sub-base issue, caused by repeated traffic loads.

Non-load related distress - Non-load (or environmental), distresses typically have environmental causes related to the pavement becoming older and less elastic (brittle). Typical non-load distresses are longitudinal or transverse cracking, block cracking, and surface weathering and raveling.

***Historical Pavement Condition Trends**



***Current PCI**



Network Inventory

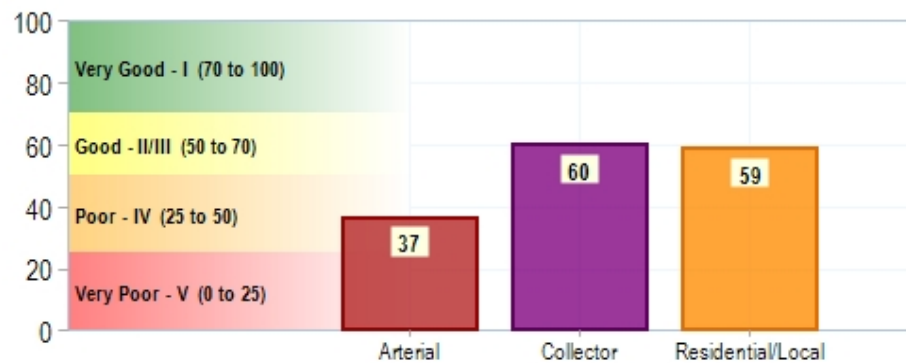
Pavement Area: **0.2**
(square miles)

Miles: **27.2**

Lane Miles: **54.3**

Sections: **208**

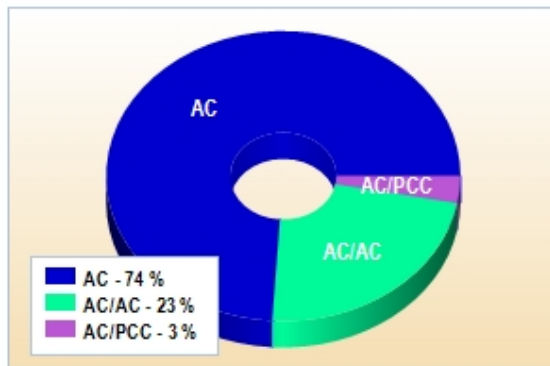
***Current PCI by Functional Class**



Remaining Service Li (years)

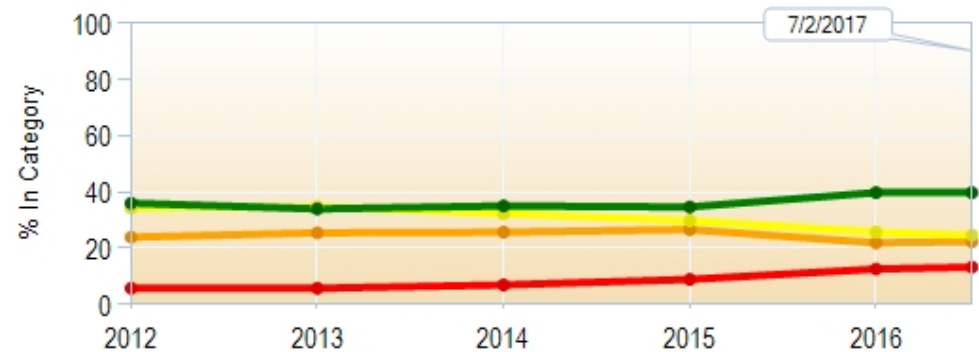


Surface Type

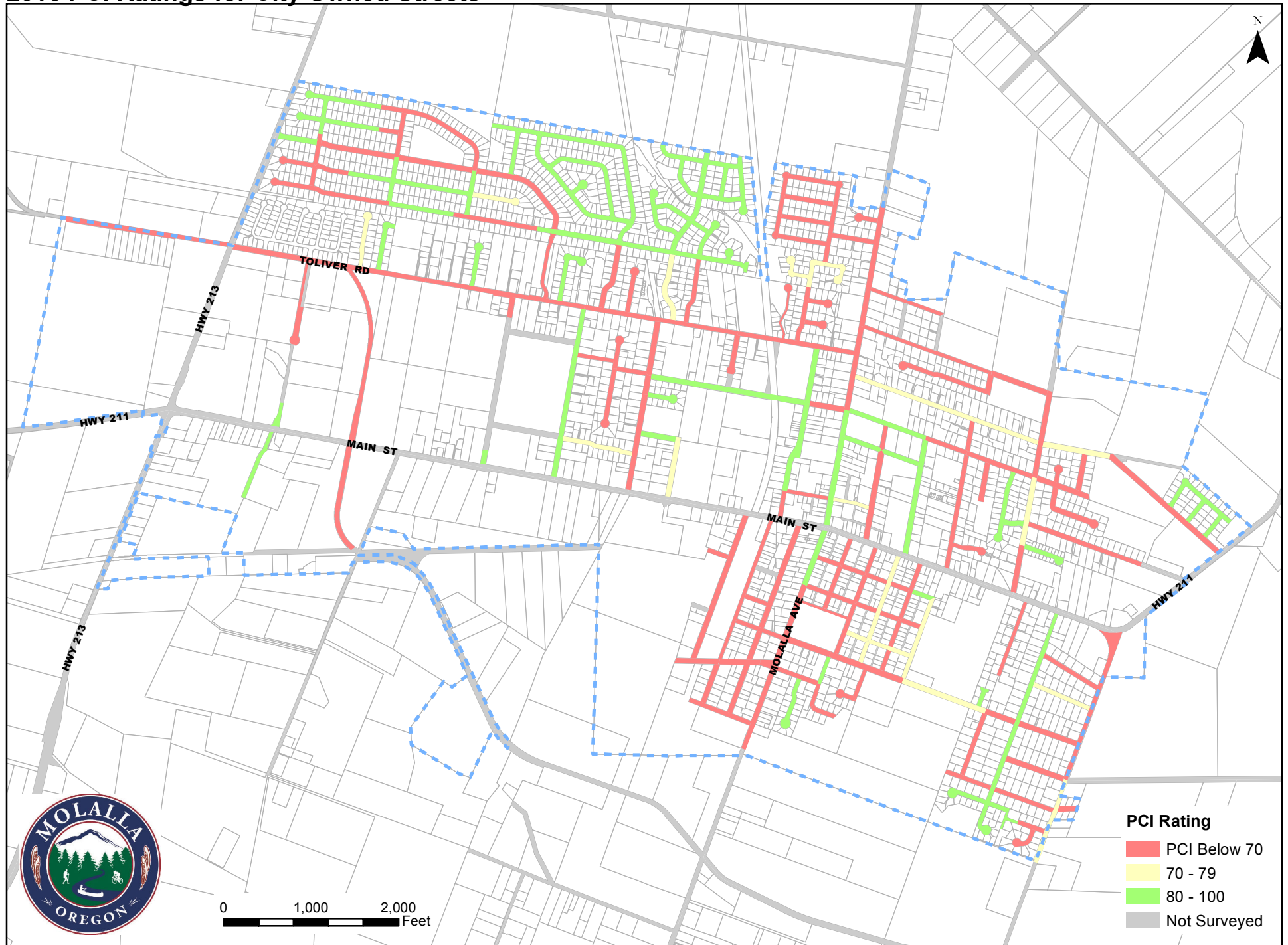


From 12/31/2016		
Very Good	40%	0
Good	25%	-1
Poor	22%	0
Very Poor	13%	0

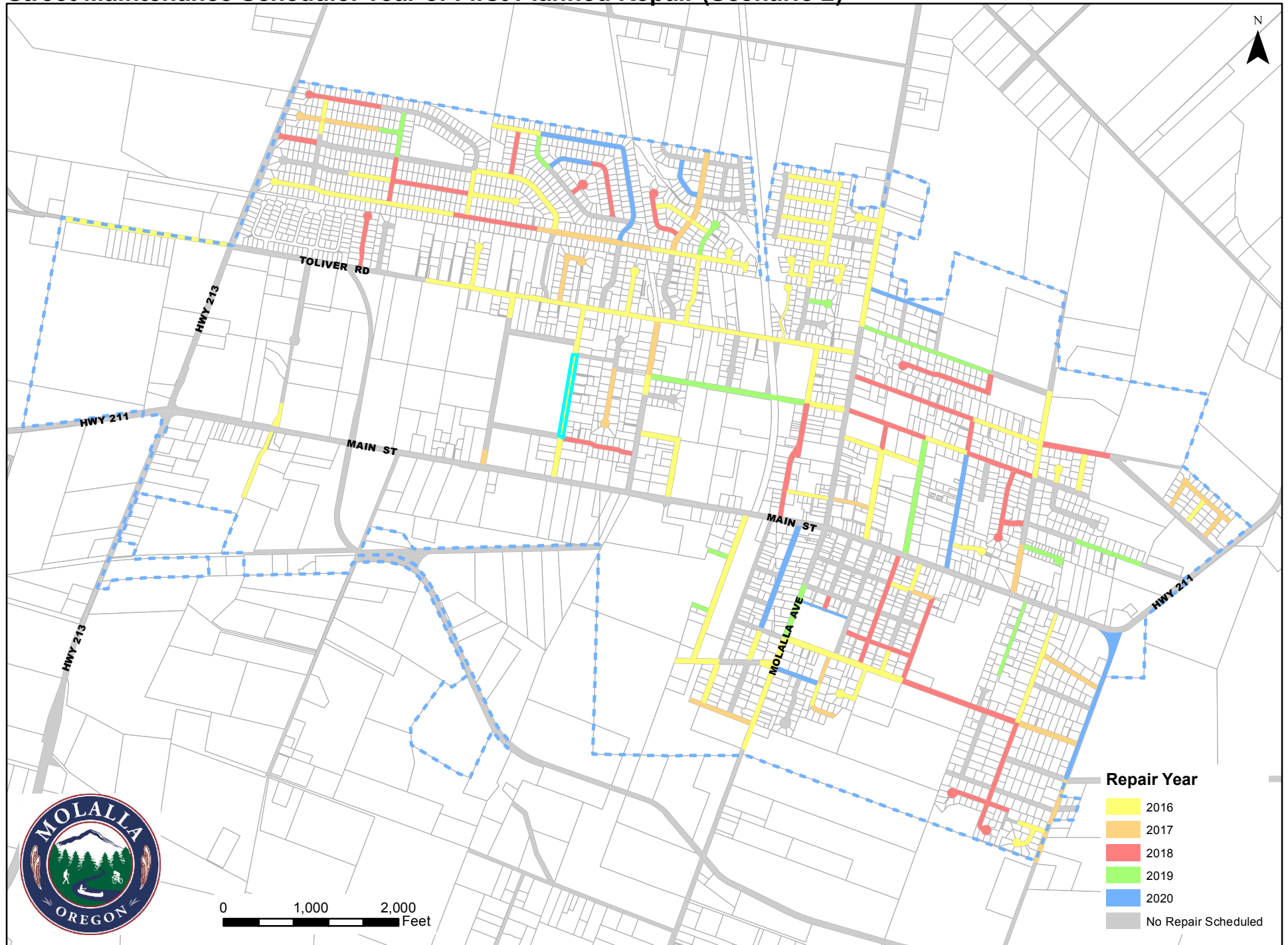
Historical Network Condition Trends



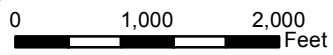
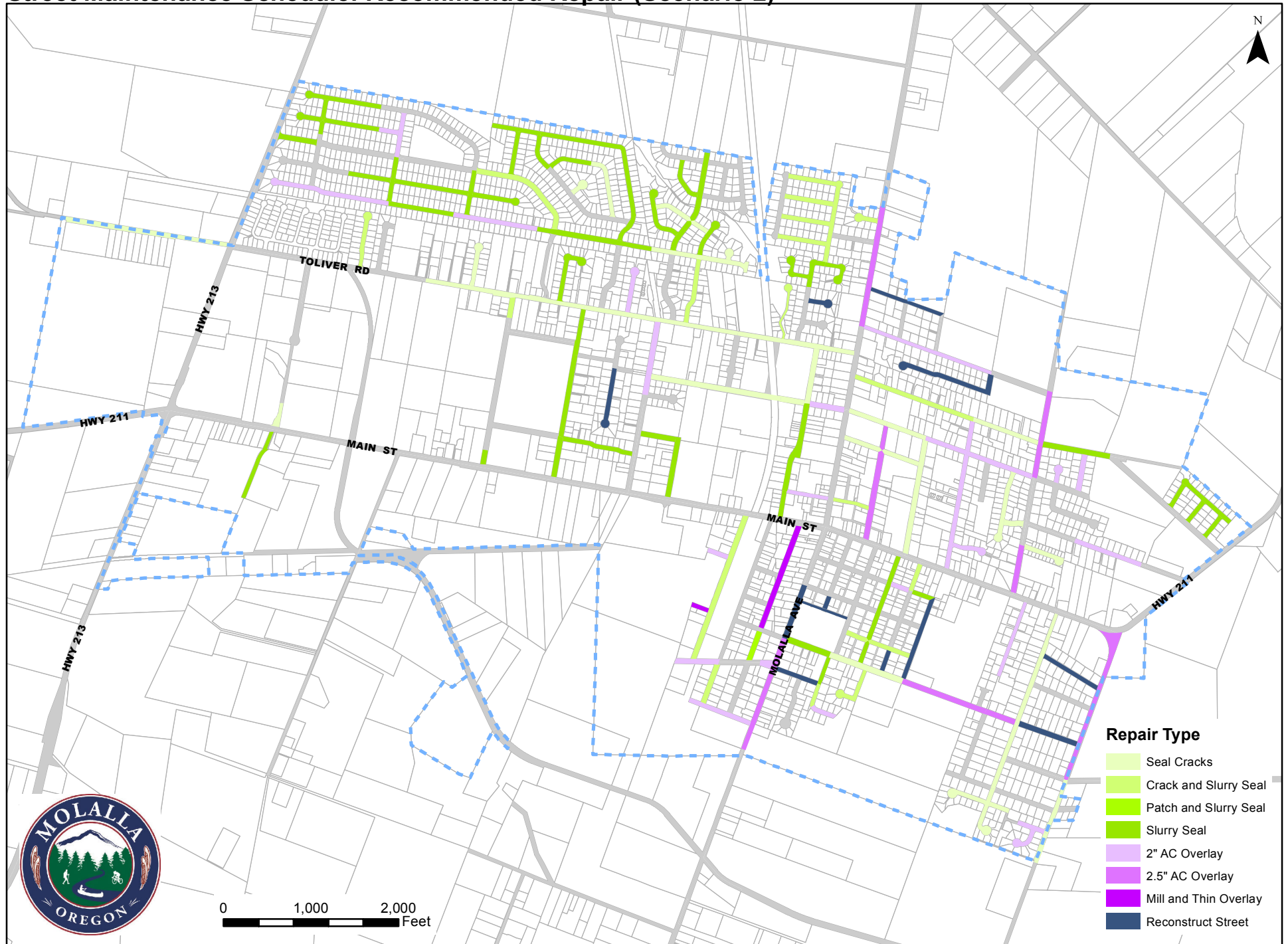
2016 PCI Ratings for City Owned Streets



Street Maintenance Schedule: Year of First Planned Repair (Scenario 2)



Street Maintenance Schedule: Recommended Repair (Scenario 2)



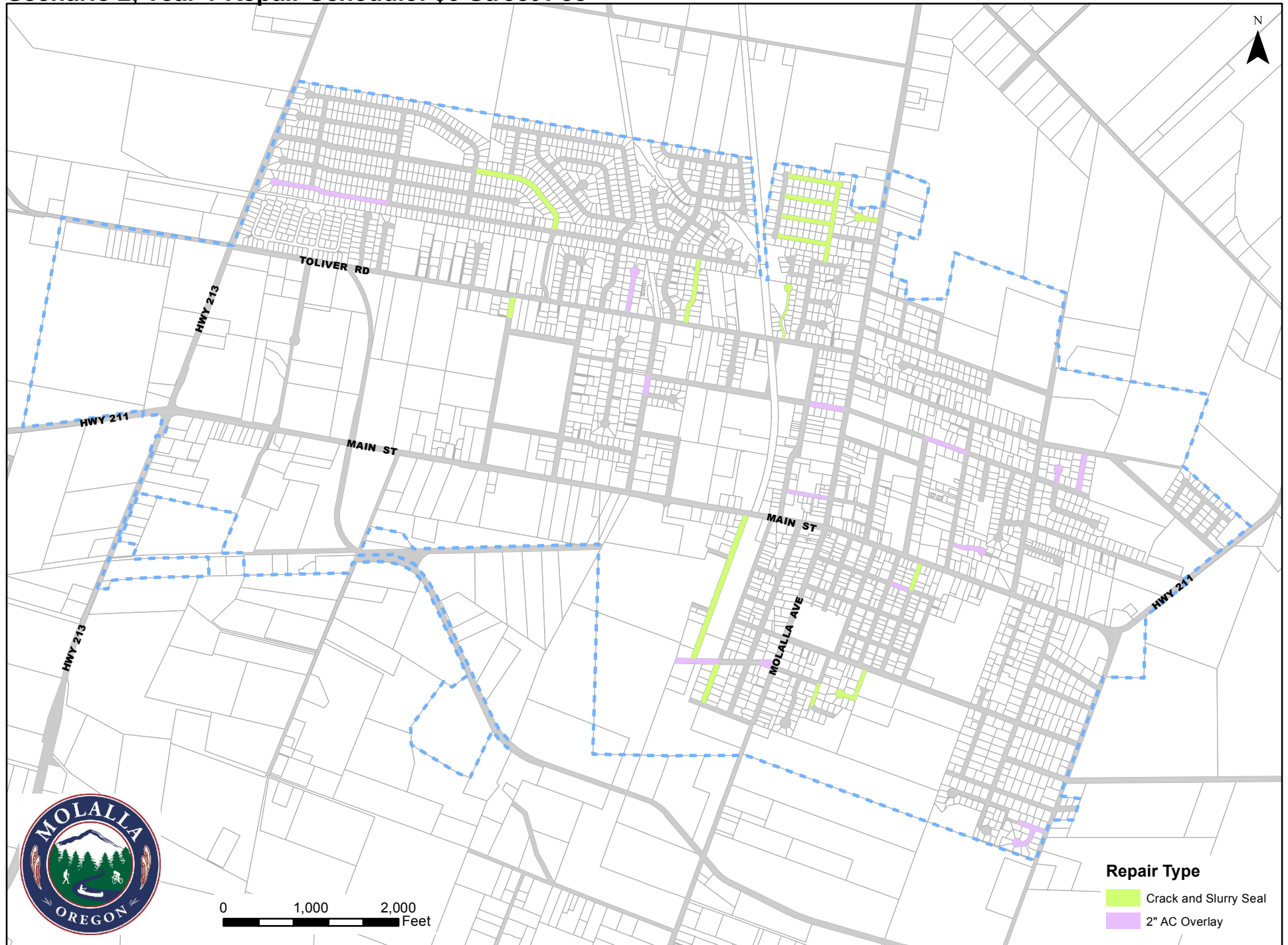
Scenario 2, Year 1 Repair Schedule: \$5 Street Fee



Scenario 2, Year 1 Repair Schedule: \$7 Street Fee



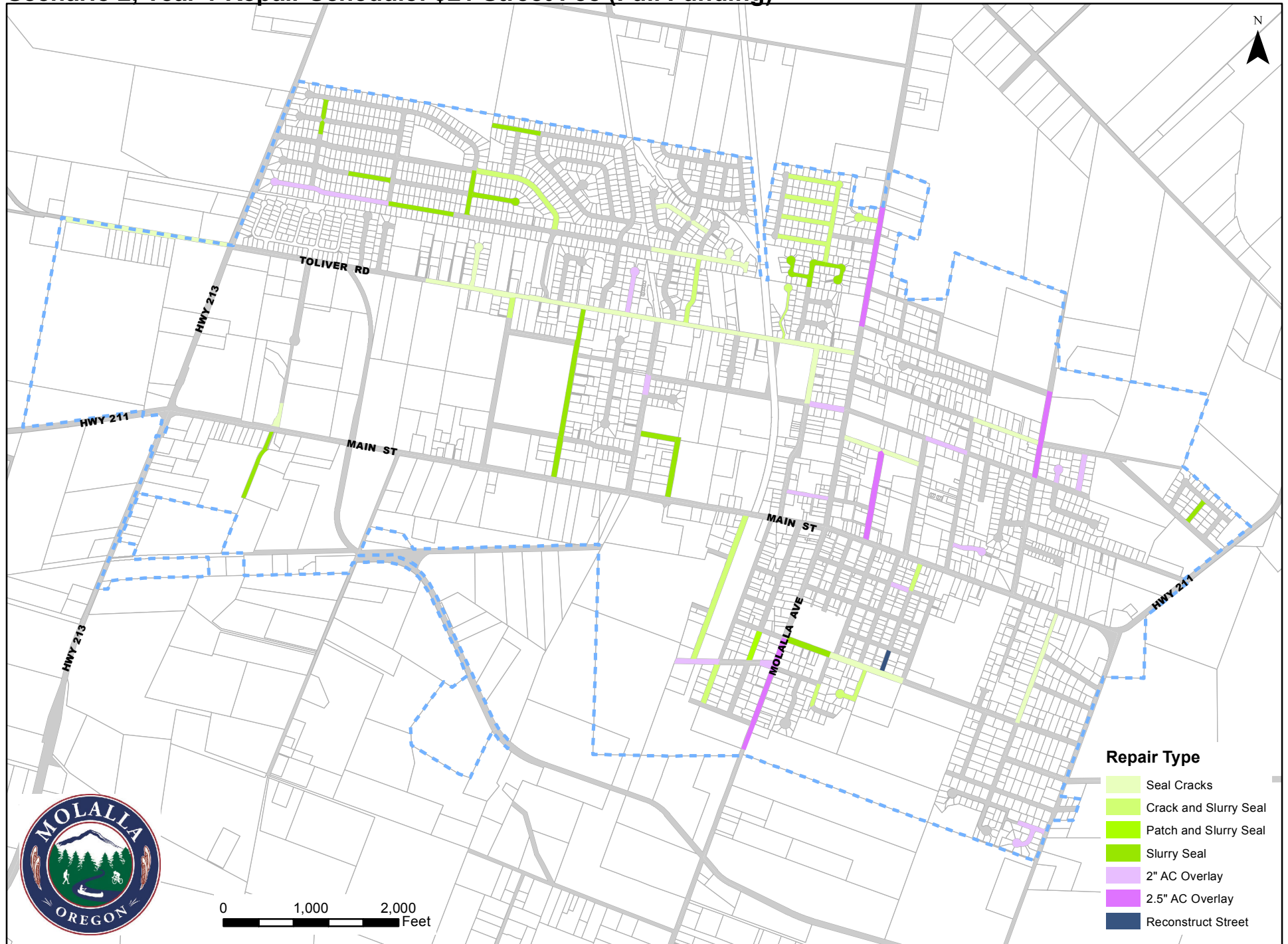
Scenario 2, Year 1 Repair Schedule: \$9 Street Fee



Scenario 2, Year 1 Repair Schedule: \$11 Street Fee



Scenario 2, Year 1 Repair Schedule: \$21 Street Fee (Full Funding)



City Of Molalla

City Council Meeting



Agenda Category: New Business – Contract Award

Subject: Wastewater Facilities and Infrastructure Master Plan – Contract Award

Recommendation: Council Approval

Date of Meeting to be Presented: August 09, 2017

Fiscal Impact: Capital Projects Fund

Background:

The last Wastewater System Master Plan was completed 17 years ago. This project will update the master plan including review of biosolids management plan, recycled water use plan, effluent discharge, and infiltration/inflow. Staff requested a scope of work from our on-call engineering company (Project Delivery Group) and their wastewater subconsultant (Dyer Partnership) to perform this work. Staff recommends City Council authorize the City Manager to execute a contract modification with PDG to work with Dyer Partnership to perform this work.

SUBMITTED BY: Gerald Fisher, Public Works Director
APPROVED BY: Dan Huff, City Manager

CITY OF MOLALLA

WASTEWATER FACILITY & COLLECTION SYSTEM MASTER PLAN

SCOPE OF ENGINEERING SERVICES

SCOPE OF SERVICES

The Wastewater Facility and Collection System Master Plan (Plan) will be completed in accordance with the guidelines prepared by the four main funding sources: United States Department of Agriculture (USDA), Rural Community Assistance Corporation (RCAC), Oregon Department of Environmental Quality (DEQ) and Business Oregon Infrastructure Finance Authority (IFA), and titled “Preparing Wastewater Planning Documents and Environmental Reports for Public Utilities”. Appendix C – Planning Document Outlines is included at the end of this scope of services.

The work tasks itemized below describe the major tasks for preparation of the Plan.

Task 1 – Collect Background and Planning Information

This task will include compiling and documenting background information about the historical and current operation of the City’s wastewater facilities, study area characteristics, historical and current population, and applicable regulatory regulations.

A Project Kick-off Meeting will be held so that all participants will become acquainted and the responsibilities of each will be established during the progress of the project. The criteria and source of all information that forms the basis of the Plan will be discussed and agreed to. The work tasks will also be reviewed, modified if required, and agreed upon.

Task 2 - Basis of Planning

Under this task, the basis for the Plan is established. Applicable regulatory requirements are identified and addressed, including management plans, mutual agreement orders, discharge permits, current and future treatment criteria, and discharge standards. The basis for cost estimates is identified and the general design criteria are described.

The projected wastewater characteristics developed under Task 4 will be used to determine if any mass load limitations exist or will exist in the future.

Task 3 – Study Area Characteristics

Background information required for the Plan will be documented and verified from past work. The need for the Plan and relevant background system history will be documented and include the following information.

- A. Summary of previous studies and improvements.
- B. Recorded violations and deficiencies.
- C. Permit-related documents (i.e. Mutual Agreement of Order, MAO).

Information on the Study Area to be assembled includes general physical descriptions, environmental documentation, and socioeconomic conditions and trends. An overview of environmental information will be assembled on receiving waters, wetlands, floodplains, agricultural lands, fish and wildlife, threatened and endangered species, historic and cultural resources, and other unique or sensitive resources.

The City's population growth will be projected for a 25-year planning period. The guidelines referenced above require a planning period of 20 years from the expected date of initiation of operations of the proposed project. The 25-year planning period takes into consideration a 20-year planning period and five years to finance, design and construct any proposed improvements. The population projections will be reviewed with the City to establish concurrence before proceeding further.

Task 4 – Future Design Conditions and Considerations

For this task, historical and physical characteristics of the wastewater generated in the City will be compiled and examined based on operation records and Daily Monitoring Reports (DMRs) filed with DEQ for the past five years. Existing and projected influent wastewater flows will be determined using DEQ's current flow projection guidelines for Western Oregon and population projections developed under Task 3.

Influent wastewater strength and loading will be identified for both dry and wet period conditions, and unit design values will be established. Future wastewater characteristics will be projected over the 25-year planning period, the derived unit design values, and the population projections developed under Task 3. This task is considered critical in the Plan process as the ultimate treatment plant and collection system capacity is based on the values projected in this section.

Other design issues to be examined include biosolids management, disinfection requirements and effluent discharge regulations, including mass load requirements.

Task 5 – Existing System Evaluation

The focus of this task is to complete a technical description and evaluation of the City's wastewater facilities with emphasis on its collection system, pump stations, Wastewater Treatment Plant (WWTP), biosolids management and effluent disposal, including recycled water sites. Data will be reviewed on the existing wastewater facilities from sources such as operating records, conversations with City staff, onsite investigations, maps, as-built records, and other pertinent documentation.

The operation, performance, capacity, and deficiencies of the existing wastewater treatment facilities will be identified and discussed in detail. With respect to the wastewater collection system, the system's condition, capacity, overflows and bypasses will be addressed. Infiltration and Inflow (I/I) issues for the collection system will be identified as part of Task 6.

The operation, performance, capacity, service life and deficiencies of the existing WWTP will be identified and discussed in detail. Existing design data and description of previous plant modifications will be summarized.

The City's current biosolids management, effluent discharge and recycle water program will be reviewed and evaluated. Maps and/or drawings of the existing wastewater facilities will be developed and/or provided in the Plan's documentation.

Task 6 – Infiltration and Inflow Study

Under this task, a comprehensive I/I Identification program will be performed to determine the quantities and sources of extraneous water that remain in the wastewater collection system. This task will primarily consist of a review of existing WWTP influent flow records and existing television video recordings, and include the flow mapping and smoke testing of the City's collection system. These items are discussed in more detail below.

A. Review of Existing Flow and Other Records

The existing flow records on the WWTP Influent along with pump run times for the City's pump stations will be compiled to determine any flow trends with respect to such variables as rainfall, high groundwater, and location within the collection system.

Historical flow data for the wet season months will be evaluated to determine if I/I within the City's system is considered "non-excessive" using EPA guidelines. If I/I is not considered "non-excessive", a capital improvement plan will be developed to address extraneous flows.

In addition to the above efforts, the following pertinent records will also be reviewed and evaluated: television inspection tapes and the City's actions to eliminate inflow sources.

B. Flow Mapping

This task consists of taking instantaneous flow measurements at selected manholes within the City. Instantaneous flows will either be measured using "Flow Poke" equipment (<12-inch diameter pipe) or estimated based on liquid levels in the incoming pipe segments and pipe slope (> 15-inch diameter pipe). Typically, two crews, three men each, including one man from the City's staff, move from manhole to manhole in as short as time as possible between 11:00 pm and 6:00 am when domestic and commercial sewage contributions are minimal.

Flow-mapping will be performed during a major storm and during a winter dry period. Dry period mapping will be used to verify the effectiveness of the recently completed I/I work, if any.

C. Smoke Testing

A three man crew, including one man from City's staff, will pump smoke in selected manholes throughout the City in an effort to identify inflow sources. Inflow sources provide a direct link to the collection system and are typically the most cost effective to eliminate. Instance reductions of extraneous flows are typically observed during rainfall events after these sources are eliminated.

D. Summary

The results of the I/I Identification Program will be organized and presented in the Plan. The Plan will summarize the findings, conclusions, recommended corrective work and expected results of any additional proposed improvements. It will also contain a system

map, the measured data and photographs of deficiencies noted during the smoke testing exercise.

Task 7 - Evaluate Improvement Alternatives

We believe the key to a successful Plan is the thorough analysis of alternatives. Alternatives, including the no-action option, will be identified and compared for the City's wastewater collection (I/I reduction), and treatment system. Alternatives to be explored for the collection system are: 1) no-action alternative, 2) upsizing of lines, 3) replacing lines, and 4) inversion lining of lines. Alternatives to be explored for the treatment system are: 1) no-action alternative, 2) upgrade existing system, 3) conversion of existing facilities, and 4) construct a new treatment facility. Potential biological processes to be considered for secondary treatment include: 1) upgrading the existing system, 2) enhanced lagoon treatment without the Dissolved Air Flootation (DAF) units, 3) Sequencing Batch Reactor (SBR), and 4) Integrated Fixed-film Activated Sludge (IFAS). Potential processes to be considered for tertiary treatment include: 1) upgrading existing gravity filters, 2) disc filters, and 3) moving bridge filters. Potential alternatives to be considered for disinfection include: 1) updating the existing tablet system, 2) hypochloride system, and 3) ultraviolet system.

Options for effluent disposal and/or reuse will be identified in addition to the cost and long term effects of each evaluated. We will examine the capacity of the existing recycle water disposal facilities and determine if additional fields will be required. The existing outfall will be analyzed for capacity.

Biosolids treatment of the existing system consists of periodically removing sludge from the primary lagoon. There is no other biological treatment of the waste streams coming from the DAF units or tertiary filters. Alternatives to be explored for biosolids treatment are: 1) no-action, 2) aerobic digesters with dewatering facilities, 3) anaerobic digesters with dewatering facilities, and 4) drying beds.

Each viable alternative for the collection system and WWTP will be further developed and evaluated in detail including a description, flow schematic, and the estimated capital and operation and maintenance (O&M) costs will be provided. A present worth analysis of the most cost effective alternatives will be developed taking into consideration the estimated capital and O&M costs, and salvage value for a 25-year planning period. Viable alternatives will also be evaluated with respect to such factors as flexibility, reliability, operability, durability, ability to construct, environmental factors, and energy efficiency. Feasibility and potential ramifications of the no-action alternative will also be described and evaluated.

The alternatives evaluated will be presented to the City for information and gathering feedback.

Task 8 – Recommendations and Capital Improvement Plan

The most viable alternatives identified in Task 7 will be more fully discussed and developed into the Capital Improvement Plan under this task. This Plan will include a discussion of the recommended facility improvements, preliminary design data, capital improvement and O&M costs, a preliminary layout of recommended facilities, the fate of the existing facilities, a recommended staging of improvements, and a project schedule.

The information compiled and documented under this task will serve as an excellent basis for the Pre-Design Report required by DEQ as the first step in designing wastewater improvements.

Preliminary cost estimates were developed in Task 7 above to compare alternatives. A final cost estimate and proposed scheduling of the Recommended Plan improvements will be developed. The Recommended Plan, including the final cost and schedule, will be presented to the City for information and gathering feedback.

Task 9 – Funding and Implementation

For this task, a financing plan will be formulated for funding the preferred WWTP alternative and collection system capital improvement plan. This financing plan will take into consideration the anticipated capital and O&M costs for the preferred alternative, local funding sources (e.g. user rates, bonds), existing funds available for future capital projects, Federal and State grant and loan programs, and private financing. The most cost effective and viable combination of funding sources will be identified. The process for application and processing the necessary funding source applications will be identified.

An approximate sewer cost (annual cost & monthly cost per equivalent dwelling unit, EDU) for the proposed capital improvement plans will be developed based on the compiled financing plan. The estimated sewer use charges will include anticipated O&M, existing debt service, anticipated new debt service, debt reserve and interim financing costs, if required.

Task 10 – Meetings

We cannot overemphasize the importance of having good communication with the City Council, City staff, and the public to ensure that the Plan is developed in the best interests and support of the community. We plan to meet with City staff and the City Council, as needed and requested, to facilitate the development of the Plan and inform the City on the findings and progress of the Plan. The meetings with staff are likely to be informal; updates or presentations for the Council will likely be made at the monthly Council meetings, unless otherwise requested. In addition to the above meetings, we proposed to have a minimum of two public workshops to periodically present the Plan findings to and solicit comment from public. We anticipate that individual workshops would be needed to address the following three subject matters: 1) projected growth and future wastewater flows, 2) identified alternatives, and 3) the Recommended Plan. The draft Plan will also be presented to the Planning Commission.

Meetings between the City and DEQ will also be required throughout the duration of the study. A minimum of two meetings with City staff and DEQ are anticipated prior to developing the Draft Report. At least one meeting with DEQ will be required after the Draft Report is submitted for approval.

Task 11 - Draft and Final Report

The information generated in the tasks above will be assembled in a Draft Report and presented to the City for review. The Draft Report will also be submitted to DEQ after Council Approval.

Comments from the review of the Draft Report as well as any required modifications will be incorporated into a Final Report. Drawings, graphs and charts will be finalized. An Executive Summary of the report will be prepared and included. Copies of the Final Report will be prepared and submitted to the City and DEQ.

WORK PRODUCT:

Five hardbound copies and one electronic copy, in Word format, on CD of the Wastewater Facilities and Collection System Mater Plan will be delivered to the City after final Department of Environmental Quality approval.

- START DATE:** August 17, 2017
- DRAFT COMPLETION DATE:** April 16, 2018
- FINAL COMPLETION DATE:** June 18, 2018
- CONTRACTOR’S CONSIDERATION:** \$183,000 per attached Estimate of Man Hours and Costs.
- PAYMENT METHOD:** Monthly progress payments based on work completed.

ESTIMATE OF MAN HOURS AND COSTS

DATE: 06-05-17 PROJECT: Molalla Wastewater Facility and Collections System Master Plan

TASK	MAN HOURS						CLERICAL
	PRINC MNG	PROJ MNGR	PROJ ENGR	ENG TECH	CAD DRAFTER		
1 Collect Background & Planning Info	16	32	0	8	8	6	
2 Basis of Planning	8	36	40	8	0	0	
3 Study Area Characteristics	8	34	24	32	8	4	
4 Wastewater Characteristics	12	40	24	24	0	0	
5 Existing System Evaluation	24	80	40	60	40	2	
6 I/I Flow Mapping	8	40	40	40	40	0	
7 Development & Eval of Alternatives	60	125	40	24	40	4	
8 Recommended & Capital Improvement Plan	12	40	24	16	24	4	
9 Funding & Implementation	12	23	8	0	0	2	
10 Meetings	56	64	0	0	0	4	
11 Draft & Final Reports	20	40	24	24	24	12	
TOTAL ESTIMATED HOURS	236	554	264	236	184	0	38

MATERIAL COSTS	DESCRIPTION OR UNIT	QUANTITY	UNIT COST	TOTAL COST
PHOTOGRAPHS	NA	0	\$0.00	0.00
FLOW POKE EQUIPMENT	EA	0	\$0.00	0.00
PLANS AND PRINTS	EA	0	\$2.00	0.00
DRAFT REPORT COPIES	EA	5	\$100.00	500.00
FINAL REPORT COPIES	EA	5	\$100.00	500.00
TOTAL MATERIAL COSTS				\$1,000.00

TRAVEL AND PER DIEM	DETAIL	QUANTITY	UNIT COST	TOTAL COST
MILEAGE	Mile	1200	\$0.57	684.00
COMMERCIAL	NA			0.00
PER DIEM	NA			0.00
LOCAL TRANSPORTATION	NA			0.00
LODGING	NA			0.00
TOTAL TRAVEL AND PER DIEM				\$684.00

OTHER SIGNIFICANT COSTS	DETAIL	NUMBER	COST	TOTAL
SUBCONSULTANTS	BOB DILLARD CONSULTING	1	\$5,500.00	5,500.00
PROJECT MANAGEMENT AND REVIEW	PROJECT DELIVERY GROUP	1	\$5,500.00	5,500.00
TOTAL OTHER SIGNIFICANT COSTS				\$11,000.00

SUMMARY				
BREAKDOWN OF PROPOSED FEE				
DATE:	06-05-17	PROJECT:	Molalla Wastewater Facility and Collections System Master Plan	
			LABOR	
			RATE	---- -1- ----
			\$/HR.	HRS. AMOUNT
DIRECT LABOR COSTS:				
			135.00	236
			125.00	554
			115.00	264
			95.00	236
			80.00	184
			49.00	0
			45.00	38
				<u>1,710</u>
				170,320
DIRECT PROJECT EXPENSES				
				1,000
				684
				11,000
			\$0	% OF A,B,&C
				<u>0</u>
				12,684
TOTAL LABOR AND EXPENSES				\$183,004
			1:	Molalla Wastewater Facility and Collections System
				Master Plan
				\$183,004
				<u>183,004</u>
			TOTAL FEES	\$183,004

PREPARED BY: SBM

Appendix C – Planning Document Outlines

The following outlines of a preliminary engineering report are from an interagency memorandum dated January 16, 2013:

C.1: GENERAL OUTLINE

- 1) PROJECT PLANNING
 - a) Location
 - b) Environmental Resources Present
 - c) Population Trends
 - d) Community Engagement
- 2) EXISTING FACILITIES
 - a) Location Map
 - b) History
 - c) Condition of Existing Facilities
 - d) Financial Status of any Existing Facilities
 - e) Water/Energy/Waste Audits
- 3) NEED FOR PROJECT
 - a) Health, Sanitation, and Security
 - b) Aging Infrastructure
 - c) Reasonable Growth
- 4) ALTERNATIVES CONSIDERED
 - a) Description
 - b) Design Criteria
 - c) Map
 - d) Environmental Impacts
 - e) Land Requirements
 - f) Potential Construction Problems
 - g) Sustainability Considerations
 - i) Water and Energy Efficiency
 - ii) Green Infrastructure
 - iii) Other
 - h) Cost Estimates
- 5) SELECTION OF AN ALTERNATIVE
 - a) Life Cycle Cost Analysis
 - b) Non-Monetary Factors
- 6) PROPOSED PROJECT (RECOMMENDED ALTERNATIVE)
 - a) Preliminary Project Design
 - b) Project Schedule
 - c) Permit Requirements
 - d) Sustainability Considerations
 - i) Water and Energy Efficiency
 - ii) Green Infrastructure
 - iii) Other
 - e) Total Project Cost Estimate (Engineer's Opinion of Probable Cost)
 - f) Annual Operating Budget
 - i) Income
 - ii) Annual O&M Costs
 - iii) Debt Repayments
 - iv) Reserves
- 7) CONCLUSIONS AND RECOMMENDATIONS

C.2: DETAILED OUTLINE

1) PROJECT PLANNING

Describe the area under consideration. Service may be provided by a combination of central, cluster, and/or centrally managed individual facilities. The description should include information on the following:

- a) Location. Provide scale maps and photographs of the project planning area and any existing service areas. Include legal and natural boundaries and a topographical map of the service area.
- b) Environmental Resources Present. Provide maps, photographs, and/or a narrative description of environmental resources present in the project planning area that affect design of the project. Environmental review information that has already been developed to meet requirements of NEPA or a state equivalent review process can be used here.
- c) Population Trends. Provide U.S. Census or other population data (including references) for the service area for at least the past two decades if available. Population projections for the project planning area and concentrated growth areas should be provided for the project design period. Base projections on historical records with justification from recognized sources.
- d) Community Engagement. Describe the utility's approach used (or proposed for use) to engage the community in the project planning process. The project planning process should help the community develop an understanding of the need for the project, the utility operational service levels required, funding and revenue strategies to meet these requirements, along with other considerations.

2) EXISTING FACILITIES

Describe each part (e.g. processing unit) of the existing facility and include the following information:

- a) Location Map. Provide a map and a schematic process layout of all existing facilities. Identify facilities that are no longer in use or abandoned. Include photographs of existing facilities.
- b) History. Indicate when major system components were constructed, renovated, expanded, or removed from service. Discuss any component failures and the cause for the failure. Provide a history of any applicable violations of regulatory requirements.
- c) Condition of Existing Facilities. Describe present condition; suitability for continued use; adequacy of current facilities; and their conveyance, treatment, storage, and disposal capabilities. Describe the existing capacity of each component. Describe and reference compliance with applicable federal, state, and local laws. Include a brief analysis of overall current energy consumption. Reference an asset management plan if applicable.
- d) Financial Status of any Existing Facilities. (Note: Some agencies require the owner to submit the most recent audit or financial statement as part of the application package.) Provide information regarding current rate schedules, annual O&M cost (with a breakout of current energy costs), other capital improvement programs, and tabulation of users by monthly usage categories for the most recent typical fiscal year. Give status of existing debts and required reserve accounts.
- e) Water/Energy/Waste Audits. If applicable to the project, discuss any water, energy, and/or waste audits which have been conducted and the main outcomes.

3) NEED FOR PROJECT

Describe the needs in the following order of priority:

- a) Health, Sanitation, and Security. Describe concerns and include relevant regulations and correspondence from/to federal and state regulatory agencies. Include copies of such correspondence as an attachment to the Report.
- b) Aging Infrastructure. Describe the concerns and indicate those with the greatest impact. Describe water loss, inflow and infiltration, treatment or storage needs, management adequacy, inefficient designs, and other problems. Describe any safety concerns.
- c) Reasonable Growth. Describe the reasonable growth capacity that is necessary to meet needs during the planning period. Facilities proposed to be constructed to meet future growth needs should generally be supported by additional revenues. Consideration should be given to designing for phased capacity increases. Provide number of new customers committed to this project.

4) ALTERNATIVES CONSIDERED

This section should contain a description of the alternatives that were considered in planning a solution to meet the identified needs. Documentation of alternatives considered is often a Report weakness. Alternative approaches to ownership and management, system design (including resource efficient or green alternatives), and sharing of services, including various forms of partnerships, should be considered. In addition, the following alternatives should be considered, if practicable: building new centralized facilities, optimizing the current facilities (no construction), developing centrally managed decentralized systems, including small cluster or individual systems, and developing an optimum combination of centralized and decentralized systems. Alternatives should be consistent with those considered in the NEPA, or state equivalent, environmental review. Technically infeasible alternatives that were considered should be mentioned briefly along with an explanation of why they are infeasible, but do not require full analysis. For each technically feasible alternative, the description should include the following information:

- a) Description. Describe the facilities associated with every technically feasible alternative. Describe source, conveyance, treatment, storage and distribution facilities for each alternative. A feasible system may include a combination of centralized and decentralized (on-site or cluster) facilities.
- b) Design Criteria. State the design parameters used for evaluation purposes. These parameters should comply with federal, state, and agency design policies and regulatory requirements.
- c) Map. Provide a schematic layout map to scale and a process diagram if applicable. If applicable, include future expansion of the facility.
- d) Environmental Impacts. Provide information about how the specific alternative may impact the environment. Describe only those unique direct and indirect impacts on floodplains, wetlands, other important land resources, endangered species, historical and archaeological properties, etc., as they relate to each specific alternative evaluated. Include generation and management of residuals and wastes.
- e) Land Requirements. Identify sites and easements required. Further specify whether these properties are currently owned, to be acquired, leased, or have access agreements.
- f) Potential Construction Problems. Discuss concerns such as subsurface rock, high water table, limited access, existing resource or site impairment, or other conditions which may affect cost of construction or operation of facility.

- g) **Sustainability Considerations.** Sustainable utility management practices include environmental, social, and economic benefits that aid in creating a resilient utility.
1. **Water and Energy Efficiency.** Discuss water reuse, water efficiency, water conservation, energy efficient design (i.e. reduction in electrical demand), and/or renewable generation of energy, and/or minimization of carbon footprint, if applicable to the alternative. Alternatively, discuss the water and energy usage for this option as compared to other alternatives.
 2. **Green Infrastructure.** Discuss aspects of project that preserve or mimic natural processes to manage stormwater, if applicable to the alternative. Address management of runoff volume and peak flows through infiltration, evapotranspiration, and/or harvest and use, if applicable.
 3. **Other.** Discuss any other aspects of sustainability (such as resiliency or operational simplicity) that are incorporated into the alternative, if applicable.
- h) **Cost Estimates.** Provide cost estimates for each alternative, including a breakdown of the following costs associated with the project: construction, non- construction, and annual O&M costs. A construction contingency should be included as a non-construction cost. Cost estimates should be included with the descriptions of each technically feasible alternative. O&M costs should include a rough breakdown by O&M category (see example below) and not just a value for each alternative. Information from other sources, such as the recipient's accountant or other known technical service providers, can be incorporated to assist in the development of this section. The cost derived will be used in the life cycle cost analysis described in Section 5 a.

Example O&M Cost Estimate

<i>Item</i>	<i>Cost Estimate</i>
Personnel (i.e. Salary, Benefits, Payroll Tax, Insurance, Training)	
Administrative Costs (e.g. office supplies, printing, etc.)	
Water Purchase or Waste Treatment Costs	
Insurance	
Energy Cost (Fuel and/or Electrical)	
Process Chemical	
Monitoring & Testing	
Short Lived Asset Maintenance/Replacement*	
Professional Services	
Residuals Disposal	
Miscellaneous	
Total	

* See Appendix C3 for example list

5) SELECTION OF AN ALTERNATIVE

Selection of an alternative is the process by which data from the previous section, "Alternatives Considered" is analyzed in a systematic manner to identify a recommended alternative. The analysis should include consideration of both life cycle costs and non- monetary factors (i.e. triple bottom line analysis: financial, social, and environmental). If water reuse or conservation, energy efficient design, and/or renewable generation of energy components are included in the proposal provide an explanation of their cost effectiveness in this section.

a) **Life Cycle Cost Analysis.** A life cycle present worth cost analysis (an engineering economics technique to evaluate present and future costs for comparison of alternatives) should be completed to compare the technically feasible alternatives. Do not leave out alternatives because of anticipated costs; let the life cycle cost analysis show whether an alternative may have an acceptable cost. This analysis should meet the following requirements and should be repeated for each technically feasible alternative. Several analyses may be required if the project has different aspects, such as one analysis for different types of collection systems and another for different types of treatment.

1. The analysis should convert all costs to present day dollars;
2. The planning period to be used is recommended to be 20 years, but may be any period determined reasonable by the engineer and concurred on by the state or federal agency;
3. The discount rate to be used should be the "real" discount rate taken from Appendix C of OMB circular A-94 and found at (www.whitehouse.gov/omb/circulars/a094/a94_appx-c.html);
4. The total capital cost (construction plus non-construction costs) should be included;
5. Annual O&M costs should be converted to present day dollars using a uniform series present worth (USPW) calculation;
6. The salvage value of the constructed project should be estimated using the anticipated life expectancy of the constructed items using straight line depreciation calculated at the end of the planning period and converted to present day dollars;
7. The present worth of the salvage value should be subtracted from the present worth costs;
8. The net present value (NPV) is then calculated for each technically feasible alternative as the sum of the capital cost (C) plus the present worth of the uniform series of annual O&M (USPW (O&M)) costs minus the single payment present worth of the salvage value (SPPW(S)):

$$NPV = C + USPW (O\&M) - SPPW (S)$$

9. A table showing the capital cost, annual O&M cost, salvage value, present worth of each of these values, and the NPV should be developed for state or federal agency review. All factors (major and minor components), discount rates, and planning periods used should be shown within the table;
10. Short lived asset costs (See Appendix C.3 for examples) should also be included in the life cycle cost analysis if determined appropriate by the consulting engineer or agency. Life cycles of short lived assets should be tailored to the facilities being constructed and be based on generally accepted design life. Different features in the system may have varied life cycles.

b) **Non-Monetary Factors.** Non-monetary factors, including social and environmental aspects (e.g. sustainability considerations, operator training requirements, permit issues, community objections, reduction of greenhouse gas emissions, wetland relocation) should also be considered in determining which alternative is recommended and may be factored into the calculations.

6) PROPOSED PROJECT (RECOMMENDED ALTERNATIVE)

The engineer should include a recommendation for which alternative(s) should be implemented. This section should contain a fully developed description of the proposed project based on the preliminary description under the evaluation of alternatives. Include a schematic for any treatment processes, a layout of the system, and a location map of the proposed facilities. At least the following information should be included as applicable to the specific project:

a) Preliminary Project Design

1. **Wastewater/Reuse:**

Collection System/Reclaimed Water System Layout. Identify general location of new pipe, replacement or rehabilitation: lengths, sizes, and key components.

Pumping Stations. Identify size, type, site location, and any special power requirements. For rehabilitation projects, include description of components upgraded.

Storage. Identify size, type, location and frequency of operation.

Treatment. Describe process in detail (including whether adding, replacing, or rehabilitating a process) and identify location of any treatment units and site of any discharges (end use for reclaimed water). Identify capacity of treatment plant (i.e. Average Daily Flow).

ii) Stormwater:

Collection System Layout. Identify general location of new pipe, replacement or rehabilitation: lengths, sizes, and key components.

Pumping Stations. Identify size, type, location, and any special power requirements.

Treatment. Describe treatment process in detail. Identify location of treatment facilities and process discharges. Capacity of treatment process should also be addressed.

Storage. Identify size, type, location and frequency of operation.

Disposal. Describe type of disposal facilities and location.

Green Infrastructure. Provide the following information for green infrastructure alternatives:

- Control Measures Selected. Identify types of control measures selected (e.g., vegetated areas, planter boxes, permeable pavement, rainwater cisterns).
- Layout: Identify placement of green infrastructure control measures, flow paths, and drainage area for each control measure.
- Sizing: Identify surface area and water storage volume for each green infrastructure control measure. Where applicable, soil infiltration rate, evapotranspiration rate, and use rate (for rainwater harvesting) should also be addressed.
- Overflow: Describe overflow structures and locations for conveyance of larger precipitation events.

- b) Project Schedule. Identify proposed dates for submittal and anticipated approval of all required documents, land and easement acquisition, permit applications, advertisement for bids, loan closing, contract award, initiation of construction, substantial completion, final completion, and initiation of operation.
- c) Permit Requirements. Identify any construction, discharge and capacity permits that will/may be required as a result of the project.
- d) Sustainability Considerations (if applicable).
 1. Water and Energy Efficiency. Describe aspects of the proposed project addressing water reuse, water efficiency, and water conservation, energy efficient design, and/or renewable generation of energy, if incorporated into the selected alternative.

2. Green Infrastructure. Describe aspects of project that preserve or mimic natural processes to manage stormwater, if applicable to the selected alternative. Address management of runoff volume and peak flows through infiltration, evapotranspiration, and/or harvest and use, if applicable.
 3. Other. Describe other aspects of sustainability (such as resiliency or operational simplicity) that are incorporated into the selected alternative, if incorporated into the selected alternative.
- e) Total Project Cost Estimate (Engineer's Opinion of Probable Cost). Provide an itemized estimate of the project cost based on the stated period of construction. Include construction, land and right-of-ways, legal, engineering, construction program management, funds administration, interest, equipment, construction contingency, refinancing, and other costs associated with the proposed project. The construction subtotal should be separated out from the non-construction costs. The non-construction subtotal should be included and added to the construction subtotal to establish the total project cost. An appropriate construction contingency should be added as part of the non-construction subtotal. For projects containing both water and waste disposal systems, provide a separate cost estimate for each system as well as a grand total. If applicable, the cost estimate should be itemized to reflect cost sharing including apportionment between funding sources. The engineer may rely on the owner for estimates of cost for items other than construction, equipment, and engineering.
- f) Annual Operating Budget. Provide itemized annual operating budget information. The owner has primary responsibility for the annual operating budget, however, there are other parties that may provide technical assistance. This information will be used to evaluate the financial capacity of the system. The engineer will incorporate information from the owner's accountant and other known technical service providers.
1. Income. Provide information about all sources of income for the system including a proposed rate schedule. Project income realistically for existing and proposed new users separately, based on existing user billings, water treatment contracts, and other sources of income. In the absence of historic data or other reliable information, for budget purposes, base water use on 100 gallons per capita per day. Water use per residential connection may then be calculated based on the most recent U.S. Census, American Community Survey, or other data for the state or county of the average household size. When large agricultural or commercial users are projected, the Report should identify those users and include facts to substantiate such projections and evaluate the impact of such users on the economic viability of the project.
 2. Annual O&M Costs. Provide an itemized list by expense category and project costs realistically. Provide projected costs for operating the system as improved. In the absence of other reliable data, base on actual costs of other existing facilities of similar size and complexity. Include facts in the Report to substantiate O&M cost estimates. Include personnel costs, administrative costs, water purchase or treatment costs, accounting and auditing fees, legal fees, interest, utilities, energy costs, insurance, annual repairs and maintenance, monitoring and testing, supplies, chemicals, residuals disposal, office supplies, printing, professional services, and miscellaneous as applicable. Any income from renewable energy generation which is sold back to the electric utility should also be included, if applicable. If applicable, note the operator grade needed.
 3. Debt Repayments. Describe existing and proposed financing with the estimated amount of annual debt repayments from all sources. All estimates of funding should be based on loans, not grants.
 4. Reserves. Describe the existing and proposed loan obligation reserve requirements for the following:

Debt Service Reserve - For specific debt service reserve requirements consult with individual funding sources. If General Obligation bonds are proposed to be used as loan security, this section may be omitted, but this should be clearly stated if it is the case.

Short-Lived Asset Reserve- A table of short lived assets should be included for the system (See Appendix C.3 for examples). The table should include the asset, the expected year of replacement, and the anticipated cost of each. Prepare a recommended annual reserve deposit to fund replacement of short-lived assets, such as pumps, paint, and small equipment. Short-lived assets include those items not covered under O&M, however, this does not include facilities such as a water tank or treatment facility replacement that are usually funded with long-term capital financing.

7) CONCLUSIONS AND RECOMMENDATIONS

Provide any additional findings and recommendations that should be considered in development of the project. This may include recommendations for special studies, highlighting of the need for special coordination, a recommended plan of action to expedite project development, and any other necessary considerations.

C.3: Example List of Short-Lived Asset Infrastructure

Estimated Repair, Rehab, Replacement Expenses by Item (within up to 20 years from installation):

- Wastewater Utilities
- Treatment Related
- Pump
- Pump Controls Pump Motors Chemical feed pumps
- Membrane Filters Fibers
- Field & Process Instrumentation Equipment
- UV lamps Centrifuges Aeration blowers
- Aeration diffusers and nozzles
- Trickling filters, RBCs, etc. Belt presses & driers
- Sludge Collecting and Dewatering Equipment
- Level Sensors Pressure Transducers Pump Controls
- Back-up power generator
- Chemical Leak Detection Equipment
- Flow meters
- SCADA Systems

Collection System Related:

- Pump
- Pump Controls
- Pump Motors
- Trash racks/bar screens
- Sewer line rodding equipment
- Air compressors
- Vaults, lids, and access hatches Security devices and fencing Alarms & Telemetry
- Chemical Leak Detection Equipment

City Of Molalla

City Council Meeting



Agenda Category: New Business – Contract Award

Subject: TMDL Implementation Plan Review & Update – Contract Award

Recommendation: Council Approval

Date of Meeting to be Presented: August 09, 2017

Fiscal Impact: Sewer Fund

Background:

Every 5 years a report for the stormwater system Total Maximum Daily Load (TMDL) 5 year plan must be submitted to DEQ listing accomplishments for the previous 5 years and planned improvements for the next 5 years. Staff requested a scope of work from our on-call engineering company (Project Delivery Group) and their wastewater subconsultant (Dyer Partnership) to perform this work. Staff recommends City Council authorize the City Manager to execute a contract modification with PDG to work with Dyer Partnership to perform this work.

SUBMITTED BY: Gerald Fisher, Public Works Director
APPROVED BY: Dan Huff, City Manager

**CITY OF MOLALLA
TMDL IMPLEMENTATION PLAN
FIVE YEAR PLAN REVIEW & IMPLEMENTATION PLAN UPDATE
SCOPE OF ENGINEERING SERVICES**

SCOPE OF SERVICES

The Oregon Department of Environmental Quality (DEQ) established a Total Maximum Daily Load (TMDL) for the Willamette Basin in an order signed on September 21, 2006. The TMDL requires designated agencies and municipalities to implement actions to improve water quality.

The TMDL requires Designated Management Agencies (DMAs), including the City of Molalla, to implement the TMDL through both National Pollutant Discharge and Elimination System (NPDES) permitted and non-permitted programs. Each DMA is required to prepare an individualized Implementation Plan that provides a description of the management strategies necessary to prevent, control, and/or treat specific sources of the TMDL pollutants. Periodic reviews and revisions of the Implementation Plan are also required.

The City of Molalla created, and submitted to DEQ, a modified Implementation plan in December, 2011. A five year review of this Implementation Plan must be completed and submitted to DEQ by October 20, 2017 and an updated Implementation Plan must be completed and submitted to DEQ by January 15, 2018.

The five year review will be completed in accordance with the DEQ Molalla-Pudding Subbasin DMA 5th Year Review Report Guidance Template and the Implementation Plan Update will be completed per the TMDL Implementation Guidance prepared by DEQ. The work tasks itemized below describe the major tasks required for both the five year review and Implementation Plan Update.

Task 1 – Kick-off Meeting

A Project Kick-off Meeting will be held so the responsibilities of each party during the progress of the project will be established. The criteria and source of all information required to complete the Implementation Plan review and the Implementation Plan Update will be discussed and agreed to. The work tasks will also be reviewed modified if required, and agreed upon.

Task 2 – Existing Implementation Plan Review

Under this task, the 2011 Implementation Plan will be reviewed and discussed with the City in order to establish what TMDL implementation measures discussed in the implementation tracking matrices have been addressed or completed. Progress for each strategy will be documented and the approach, timeline and budgetary costs for each will be updated.

Task 3 – Complete 5th Year Review Guidance Template – Draft

This task will include the completion and draft submittal to DEQ of the 5th Year Review Guidance Template covering the 2011 Molalla TMDL Implementation Plan. The completed template will include the work and background information on the following:

1. TMDL geographic and demographic information
2. TMDL annual reporting and implementation information
3. TMDL tracking matrix update
4. Discussion on successful plan elements
5. Discussion on impediments to the existing plan
6. Discussion on the effectiveness of public participation and involvement
7. Discussion on effective implementation and proposed solutions to overcome previous impediments
8. Discussion on plan for future annual reporting

Task 4 – Complete 5th Year Review Guidance Template - Final

This task will include the coordination with DEQ and revisions based on their review of the 5th Year Review draft. A final draft will be completed and provided to the City for certification and submittal to DEQ.

Task 5 – Collect Basin/Subbasin Background Information

The existing Implementation Plan did not contain the necessary plan aspects as required by DEQ. Therefore, this and the following tasks will provide a more detailed look at the City's TMDL requirements and implementation strategies, as required for Implementation Plans.

Task 5 will include compiling and documenting background information about TMDL requirements and pollutant parameters for the Willamette Basin, specifically the Molalla-Pudding subbasin.

This will include a review of the Water Quality Management Plan for the Willamette Basin and Oregon Administrative Rule (OAR) 340-042 and how they relate specifically to the City of Molalla and the Molalla-Pudding subbasin.

Task 6 – Study Area Characteristics

For this Task, background information required for the Implementation Plan will be documented and verified from past work. Information on the Study Area to be assembled includes general physical descriptions, municipal system infrastructure, environmental documentation, municipal code, and City planning elements. Relevant storm drain system and waste water discharge information will be detailed and include the following:

1. Location in the watershed
2. Watershed characteristics
3. Storm and waste water infrastructure and discharge locations
4. Relevant Municipal Code/Comprehensive Plan elements
5. NPDES Permit discharge requirements

Task 7 – Water Quality Efforts

Under this task, the management strategies (Task 2) that the City previously identified and has implemented will be as discussed and detailed. Other water quality efforts, not previously reported, will also be reviewed and covered in this section of the Implementation Plan Update. Timelines and cost implications will be updated and included in this section as well.

Task 8 – Implementation Strategies & Matrix

The emphasis of this task is to update and revise, as necessary, the City's implementation management strategies. Those efforts that have been completed or are in progress will be noted (Task 7) and existing and new strategies will be revised and included in the Implementation Plan Update. The implementation management strategies will focus on reducing contributions of heat, bacteria, mercury and toxins to surface waters within the City's jurisdiction. Timelines for implementing management strategies and a schedule for completing measurable milestones will be incorporated.

Task 9 – Monitoring, Reporting and Compliance

Under this task, the Implementation Plan will outline the requirements for monitoring and reporting on the progress made toward implementing management strategies. This section will also detail the steps necessary for future reviews, evaluations and updates of the Implementation Plan.

Task 10 - Draft and Final Report

The information generated in the tasks above will be assembled into a Draft of the Implementation Plan Update and presented to the City for review. The Draft will also be submitted to DEQ for review and comment.

Comments from the review of the Draft, as well as any required modifications, will be incorporated into a Final document. Drawings, graphs and charts will be finalized. Copies of the Final Implementation Plan will be prepared and submitted to the City and DEQ.

Task 11 – Meetings

We cannot overemphasize the importance of having good communication with the City Council, City staff, and the public to ensure that the Implementation Plan review and update are developed in the best interests and support of the community. Much of the required information pertaining to water quality management strategies (existing and proposed) will come from City staff; therefore a good communication base will need to be established.

We plan to meet with City staff and the City Council, as needed and requested, to facilitate the development of the Implementation Plan and inform the City on the findings and progress of the work. The meetings with staff are likely to be informal; updates or presentations for the Council will likely be made at the monthly Council meetings, unless otherwise requested.

Coordination between the City and DEQ will also be required throughout the duration of the study. A meeting with City staff and DEQ is anticipated following DEQ's review of the Draft Implementation Plan Update.

WORK PRODUCT:

Five hardbound copies and one electronic copy, in Word format, on CD of the TMDL Implementation Plan Update will be delivered to the City after final Department of Environmental Quality approval.

START DATE: July 1, 2017

DRAFT COMPLETION DATE: 5th Year Implementation Plan Review – September 20, 2017
TMDL Implementation Plan Update – December 15, 2017

FINAL COMPLETION DATE: 5th Year Implementation Plan Review – October 20, 2017
TMDL Implementation Plan Update – January 15, 2018

CONTRACTOR’S CONSIDERATION: \$40,700 per attached Estimate of Man Hours and Costs.

PAYMENT METHOD: Monthly progress payments based on work completed.

ESTIMATE OF MAN HOURS AND COSTS

DATE: 06-12-17 PROJECT: TMDL Implementation Plan Phase 1: 5th Year Plan Review

TASK	MAN HOURS							CLERICAL
	PRINC. MGR	PROJ MNGR	PROJ ENGR	ENG TECH	CAD DRAFT			
1: Kick-off Meeting	4	4						
2: Existing Implementation Plan Review	2	16						
3: Review Guidance Template (draft)	2	16						
4: Review Guidance Template (final)	2	4						2
11: Meetings		6						
TOTAL ESTIMATED HOURS	10	46	0	0	0	0	0	2

MATERIAL COSTS	DESCRIPTION OR UNIT	QUANTITY	UNIT COST	TOTAL COST
REPORT				0.00
PHOTOGRAPHS				0.00
COST ESTIMATE				0.00
PLANS AND PRINTS				0.00
SPECIFICATIONS				0.00
OTHER				0.00
				0.00
TOTAL MATERIAL COSTS -----				\$0.00

TRAVEL AND PER DIEM	DETAIL	UNIT COST	TOTAL COST
MILEAGE	373	\$0.54	199.56
COMMERCIAL PER DIEM			0.00
LOCAL TRANSPORTATION			
LODGING			0.00
TOTAL TRAVEL AND PER DIEM -----			\$200

OTHER SIGNIFICANT COSTS	DETAIL	TOTAL COST
SHIPPING		
REPRODUCTION		
OTHER		
TOTAL OTHER SIGNIFICANT COSTS -----		\$0

PREPARED BY: RHQ

ESTIMATE OF MAN HOURS AND COSTS

DATE: 06-12-17 *PROJECT:* TMDL Implementation Plan *Phase 2:* Implementation Plan Update

TASK	MAN HOURS							CLERICAL
	PRINC. MGR	PROJ MGR	PROJ ENGR	ENG TECH	CAD DRAFT			
1: Kick-off Meeting	4	4						
5: Collect Basin/Subbasin Background Info	4	28						
6: Study Area Characteristics	4	40				8		
7: Water Quality Efforts	4	42						
8: Implementation Strategies & Matrix	4	42						
9: Monitoring, Reporting & Compliance		12						
10: Draft & Final Report	4	28				12		8
11: Meetings		16						
TOTAL ESTIMATED HOURS	24	212	0	0	20	0	0	8

MATERIAL COSTS	DESCRIPTION OR UNIT	QUANTITY	UNIT COST	TOTAL COST
REPORT	Copies	5.00	\$50.00	250.00
PHOTOGRAPHS				0.00
COST ESTIMATE				0.00
PLANS AND PRINTS				0.00
SPECIFICATIONS				0.00
OTHER				0.00
TOTAL MATERIAL COSTS -----				\$250.00

TRAVEL AND PER DIEM	DETAIL		UNIT COST	TOTAL COST
MILEAGE	576		\$0.54	308.16
COMMERCIAL PER DIEM				0.00
LOCAL TRANSPORTATION				
LODGING				
TOTAL TRAVEL AND PER DIEM -----				\$308

OTHER SIGNIFICANT COSTS	DETAIL	NUMBER	COST	TOTAL COST
PROJECT MANAGEMENT AND REVIEW	PROJECT DELIVERY GROUP	1	\$1,500	1,500.00
TOTAL OTHER SIGNIFICANT COSTS -----				\$1,500

PREPARED BY: RHQ

SUMMARY

BREAKDOWN OF PROPOSED FEE

DATE: 06-12-17 PROJECT: TMDL Implementation Plan

	LABOR		PROJECT	
	RATE	-----1-----	-----2-----	
	\$/HR.	HRS. AMOUNT	HRS. AMOUNT	
DIRECT LABOR COSTS:				
PRINCIPLE MANAGER-----	\$135	10 \$1,350	24 \$3,240	
PROJECT MANAGER	\$125	46 \$5,750	212 \$26,500	
PROJECT ENGINEER	\$115	0 \$0	0 \$0	
ENGINEER TECH	\$95	0 \$0	0 \$0	
CAD/DRAFTER	\$80	0 \$0	20 \$1,600	
OFFICE MANAGER	\$49	0 \$0	0 \$0	
CLERICAL	\$45	0 \$0	0 \$0	
TOTAL DIRECT LABOR COSTS:		\$7,100	\$31,338	

DIRECT PROJECT EXPENSES			
A. MATERIAL COSTS (BREAKDOWN ATTACHED)		\$0	\$250
B. TRAVEL & PER DIEM (BREAKDOWN ATTACHED)		\$200	\$308
C. OTHER SIGNIFICANT COSTS (BREAKDN ATTACHED)		\$0	\$1,500
D. ADMINISTRATIVE FEE	10 % OF A,B,&C	\$0	\$0
TOTAL OF: A THROUGH D		\$200	\$2,058

TOTAL FEE (PER PHASE): \$7,300 \$33,396

- 1: 5th Year Plan Review \$7,300
- 2: Implementation Plan Update \$33,396

TOTAL FEES
\$40,700

PREPARED BY: RHQ

City Of Molalla

City Council Meeting



Agenda Category: New Business – Contract Award

Subject: WWTP Headworks Rebuild – Contract Award

Recommendation: Council Approval

Date of Meeting to be Presented: August 09, 2017

Fiscal Impact: Capital Projects Fund

Background:

This project will rebuild and replace worn parts, chain, and other mechanisms on the WWTP headworks screen. This is the only screen installed as part of the last WWTP upgrade and failure of this unit would have a significant impact on the treatment plants. Because this is a sole source manufacturer, Enviro-Care Company is the only authorized group to work on this piece of machinery and warrantee the work. This project was budgeted as part of FY 17-18 and once the rebuild is completed the City will begin design and construction of a second headworks screen.

SUBMITTED BY: Gerald Fisher, Public Works Director
APPROVED BY: Dan Huff, City Manager

ENVIRO-CARE COMPANY

1570 ST. PAUL AVE.
 GURNEE, IL 60031
 USA

INVOICE

Invoice Number: PART17066fsm-PL
 Invoice Date: Aug 4, 2017
 Page: 1

Voice: 815.636.8306
 Fax: 815.636.8302

Duplicate

Bill To:
CITY of MOLALLA, OR WWTP PO BOX 248 Molalla, OR 97038 USA

Ship to:
Molalla WWTP 12424 S. Toliver Rd Molalla, OR 97038

Customer ID	Customer PO	Payment Terms	
MOLALLA, OR	JASON CLIFFORD	Net 30 Days	
Sales Rep ID	Shipping Method	Ship Date	Due Date
TREATMENT EQUIPMENT	UPS Ground	8/4/17	9/3/17

Quantity	Item	Description	Remaining Items	Unit Price	Amount
1.00		REBUILD PACKAGE FOR FRS 1000/75x6			
2.00	FSMP-102273	Bottom sprocket 1.4122 (FRS)		700.00	1,400.00
2.00	FSMP-102287	Bearing Journal 106,5mm 1.4301, for FRSII unit		262.00	524.00
8.00	FSMP-100420	Hex Head Screw, M12 x 25mm, V2A, FSM p/n 100420		1.00	8.00
8.00	FSMP-100052	Lock Washer, M12, V2A, FSM p/n 100052		0.20	1.60
2.00	FSMP-103252	O Ring, lower sprocket on FRS		10.70	21.40
2.00	FSMP-100937	V-Ring. lower sprocket on FRS		12.45	24.90
2.00	FSMP-100870	Cover for bottom sprocket assy, FRS		110.00	220.00
6.00	FSMP-100066	Lock Washer, M8, V2A, FSM p/n 100066		0.15	0.90
6.00	FSMP-100600	Hex Head Screw, M8 x 30mm, V2A, FSM p/n 100600		0.50	3.00
2.00	FSMP-100844	Snap Ring, lower sprocket on FRS, D-50 VA		12.45	24.90
2.00	FSMP-104849	Straight screwed coupling GE10-PLR-1/4"		12.45	24.90
2.00	FSMP-102260	Top sprocket disc (2 pc) D-60 a 80		900.00	1,800.00
10.00	FSMP-100029	Flat Washer, M16, V2A, FSM p/n 100029		0.35	3.50
10.00	FSMP-102031	Bolt, special M16x45, V2A		20.00	200.00
10.00	FSMP-100680	Nut, self locking M16, V2A, FSM p/n 100680		0.85	8.50
2.00	FSMP-102264	Hub for the sprocket diameter 60 1.4301 (FRS)		450.00	900.00

Subtotal	Continued
Sales Tax	Continued
Freight	Continued
Total Invoice Amount	Continued
Payment/Credit Applied	
TOTAL	Continued

Check/Credit Memo No:

A 1.5% Monthly Late Fee will apply to pmts rec'd more than 30 days after shipm.

ENVIRO-CARE COMPANY

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TREATMENT EQUIPMENT	UPS Ground	8/4/17	9/3/17

Quantity	Item	Description	Remaining Items	Unit Price	Amount
2.00	FSMP-101401	Tension set adjustment assy, Dia. 60 (FRS)		132.00	264.00
2.00	FSMP-102317	Tension adjustment assy with bearing, Dia 60		240.00	480.00
4.00	FSMP-105075	Rubber sealing plate 60 for bearing (FRS)		10.60	42.40
1.00	FSMP-109233	Drive shaft for FRS. SA 87 RB=1000		590.00	590.00
16.00	FSM-FRS Chain 16m	Chain for FRS - 16m length (304)		166.00	2,656.00
2.00	FSMP-102188	Masterlink cranked without bolt and ring, FRS, 1.430/1.4057		80.00	160.00
4.00	FSMP-104924	Bolt 1.4057 (chain) FRS		30.00	120.00
8.00	FSMP-102198	Ring 1.4571 (chain)		5.30	42.40
164.00	FSMP-100675	Self Locking Nut, M10, V2A, FSM p/n 100675		0.35	57.40
164.00	FSMP-100050	Spring lock washer, b10 V2A		0.15	24.60
82.00	FSMP-100185	Sockethead Cap Bolt M10 x 30mm, V2A, FSM p/n 100185		0.50	41.00
82.00	FSMP-100187	Sockethead Cap Bolt M10 x 35mm, V2A, FSM p/n 100187		0.60	49.20
82.00	FSMP-102320	Plastic disc spacer 014		0.60	49.20
4.00	FSMP-104393	Brush shaft flange rotating assembly - with grease nipple		72.00	288.00
4.00	FSMP-100932	V-Ring 40-S		3.00	12.00
4.00	FSMP-103450	Plastic disk 0 40		1.50	6.00
1.00	FSMP-105210	Curve plastic sealing foe screen, left		67.00	67.00

Subtotal	Continued
Sales Tax	Continued
Freight	Continued
Total Invoice Amount	Continued
Payment/Credit Applied	
TOTAL	Continued

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Sales Rep ID	Shipping Method	Ship Date	Due Date
TREATMENT EQUIPMENT	UPS Ground	8/4/17	9/3/17

Quantity	Item	Description	Remaining Items	Unit Price	Amount
1.00	FSMP-105211	Curve plastic sealing for screens, right		67.00	67.00
8.00	FSMP-100183	Countersunk head screw with hexagon socket, M10x25 V2A		0.50	4.00
1.00	Assy FRS 1000 Rbbr P	Bottom Rubber Plate for FRS, 1000mm		93.00	93.00
1.00	Assy FSM FRS 1000	Buttom brush for FRS, 1000mm		94.00	94.00
6.00	FSMP-109934	Side plastic sealing 900		70.00	420.00
2.00	FSMP-107967	Side plastic sealing 800		62.00	124.00
36.00	FSMP-100617	Hex Head Screw, M8 x 70mm, V2A, FSM p/n 100617		1.35	48.60
36.00	FSMP-100266	Large Diameter Washer, M8, OD 23.6mm, V2A, FSM p/n 100266		0.25	9.00
36.00	FSMP-100066	Lock Washer, M8, V2A, FSM p/n 100066		0.20	7.20
36.00	FSMP-100343	Grub Screw, M8, V2A, FSM p/n 100343		0.40	14.40
10.00	FSMP-102438	Round Brush system 2 S(STD)		98.00	980.00
10.00	FSMP-102440	Additional brush over the top sprocket, FRS		23.00	230.00
10.00	FSMP-107708	Chain support 900		40.00	400.00
4.00	fsmp-112643	Chain support 400		23.40	93.60
60.00	FSMP-100233	Flat head screw, V2A		0.30	18.00
5.00		Service person on site. NTE\$1300 per day		1,300.00	6,500.00
5.00		Hotel, car, meals. NTE \$250 per day		250.00	1,250.00
1.00		Round trip airfare NTE \$600		600.00	600.00

Subtotal	Continued
Sales Tax	Continued
Freight	Continued
Total Invoice Amount	Continued
Payment/Credit Applied	
TOTAL	Continued

Check/Credit Memo No:

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Sales Rep ID	Shipping Method	Ship Date	Due Date
TREATMENT EQUIPMENT	UPS Ground	8/4/17	9/3/17

Quantity	Item	Description	Remaining Items	Unit Price	Amount
		Subtotal			21,067.60
		Sales Tax			
		Freight			347.85
		Total Invoice Amount			21,415.45
		Payment/Credit Applied			
		TOTAL			21,415.45

Check/Credit Memo No:

A 1.5% Monthly Late Fee will apply to pmts rec'd more than 30 days after shipm.

CITY OF MOLALLA

RESOLUTION 2017-11

A RESOLUTION INITIATING STREET VACATION PROCEEDINGS

WHEREAS, the City of Molalla desires to initiate street vacation proceedings for all or a portion of a public right of way located within the city limits and being a portion Shirley Street as described on Exhibit A attached to this Resolution; and

WHEREAS, the City Council is authorized to initiate street vacation proceedings pursuant to ORS 271.110 upon action by the City Council; and

WHEREAS, the City Council desires to set a time and place for a public hearing to be held on the proposed street vacation on August 23, 2017; and

WHEREAS, public notice of such public hearing is required to be given in accordance with the provisions of ORS 271.080.

NOW THEREFORE, BE IT RESOLVED by the City Council of the City of Molalla, Oregon, as follows:

1. That proceedings for vacation of all or a portion of the streets described on Exhibit A attached hereto are hereby initiated by the City Council in accordance with the procedures and requirements of Chapter 271.110 of Oregon Revised Statutes.
2. That a public hearing be scheduled on August 23, 2017 at 7:00PM to invite public comment and testimony before the City Council regarding said proposed street vacation, and that notice of said public hearing be given substantially in the form set forth on Exhibit B to this Resolution.

Passed by the City Council of the City of Molalla, Oregon this 9th day of August, 2017, by the following vote: Aye: _____ Nay: _____ Abstain _____

By: _____
Jimmy Thompson, Mayor

ATTEST:

By: _____
Sadie Cramer, City Recorder

A TRACT OF LAND LOCATED IN THE SOUTHWEST QUARTER OF SECTION 9, TOWNSHIP 5 SOUTH, RANGE 2 EAST, CITY OF MOLALLA, CLACKAMAS COUNTY, OREGON BEING A PORTION OF CLACKAMAS COUNTY DEED DOCUMENT NUMBER 76-22179 AND A PORTION OF CLACKAMAS COUNTY DEED DOCUMENT NUMBER 22-22176 MORE PARTICULARLY DESCRIBED AS;

COMMENCING AT THE POINT OF INTERSECTION OF THE CENTERLINE OF COLE STREET WITH THE EASTERLY EXTENDED SOUTHERLY RIGHT-OF-WAY LINE OF SHIRLEY STREET IN J.V.HARLESS ADDITION TO MOLALLA;

THENCE ALONG SAID SOUTHERLY RIGHT-OF-WAY, SOUTH 79°41'55" EAST, A DISTANCE OF 923.21 FEET TO THE POINT OF BEGINNING;

THENCE NORTH 48°13'55" WEST, A DISTANCE OF 114.94 FEET;

THENCE SOUTH 79°41'55" EAST, A DISTANCE OF 822.73 FEET;

THENCE SOUTH 31°53'54" WEST, A DISTANCE OF 32.27 FEET;

THENCE NORTH 79°41'55" WEST, A DISTANCE OF 636.24 FEET;

THENCE SOUTH 10°18'47" WEST, A DISTANCE OF 30.00 FEET;

THENCE NORTH 79°41'55" WEST, A DISTANCE OF 76.57 FEET TO THE POINT OF BEGINNING.

THE ABOVE DESCRIBED TRACT CONTAINS 26,801 SQUARE FEET OF LAND, MORE OR LESS. BEARINGS ARE BASED ON OREGON REAL TIME GNSS NETWORK, NAD 83(2011), OREGON NORTH ZONE (3601).

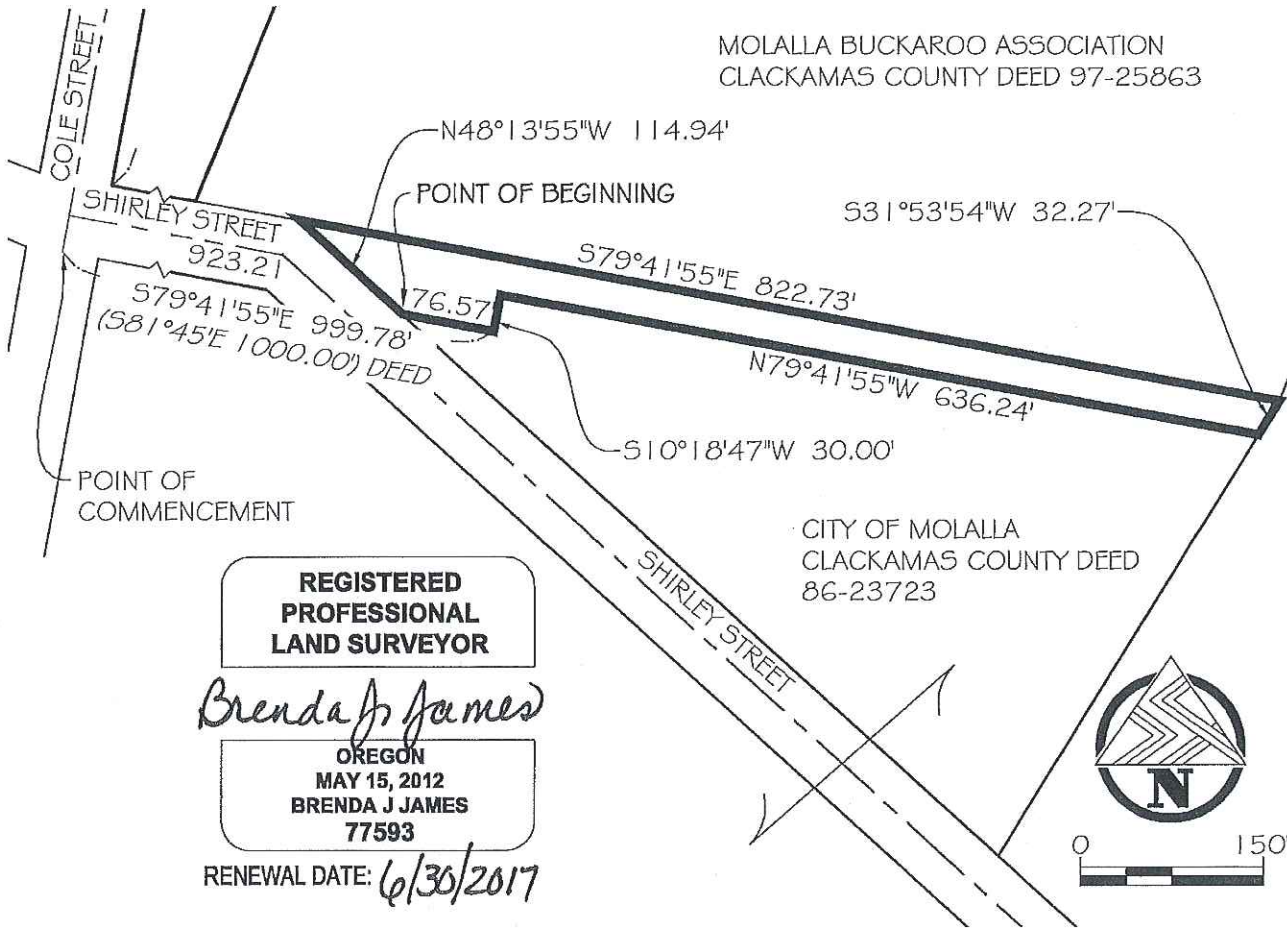


EXHIBIT "A"

MOLALLA STREET VACATION

NOTICE OF PROPOSED STREET VACATION

www.cityofMolalla.com

NOTICE IS HEREBY GIVEN that at 7:00 p.m. on the 23rd day of August, 2017, at the Molalla Adult Center, 315 Kennel Ave, in the City of Molalla, Oregon, there shall be a public hearing before the City Council of said city on the question of the vacation of unimproved portions of public right-of-ways on Shirley Street. A complete legal description depicting the streets to be vacated are available from the City Recorder.

Any objection or remonstrance made in writing and filed with the City Recorder will be accepted up to and during the public hearing. This vacation proceeding was initiated by Resolution of the City Council on August 9, 2017. (Resolution 2017-11)

Sadie Cramer
City Recorder, City of Molalla

Molalla Pioneer Publish Dates: August 16, 2017 and August 23, 2017
Public Posting Dates on Street: August 10 - 23, 2017.