

**Mission statement of McKinleyville Community Services District:**  
"Provide McKinleyville with safe and reliable water, wastewater, lighting, open space, parks and recreation, and library services in an environmentally and fiscally responsible manner."

**NOTICE IS HEREBY GIVEN THAT A REGULAR MEETING OF THE  
MCKINLEYVILLE COMMUNITY SERVICES DISTRICT BOARD OF DIRECTORS  
WILL BE HELD  
WEDNESDAY, DECEMBER 6, 2017 AT 7:00pm  
Azalea Hall, 1620 Pickett Road  
McKinleyville, California**

## **AGENDA**

### **A. CALL TO ORDER**

A.1 Roll Call

A.2 Pledge of Allegiance

A.3 Additions to the Agenda

*Items may be added to the Agenda in accordance with Section 54954.2(b)(2) of the Government Code (Brown Act), upon a determination by two-thirds vote of the members of the legislative body present at the time of the meeting, or, if less than two-thirds of the members are present, a unanimous vote of those members present, that there is a need to take immediate action and that the need for action came to the attention of the McKinleyville Community Services District after the Agenda was posted.*

A.4 Approval of the Agenda

A.5 Closed Session Discussion

*At any time during the regular session, the Board may adjourn to closed session to consider existing or anticipated litigation, liability claims, real property negotiations, license and permit determinations, threats to security, public employee appointments, personnel matters, evaluations and discipline, labor negotiations, or to discuss with legal counsel matters within the attorney-client privilege.*

**NO CLOSED SESSION SCHEDULED**

### **B. PUBLIC HEARINGS**

*These are items of a Quasi-Judicial or Legislative nature. Public comments relevant to these proceedings are invited.*

**NO PUBLIC HEARING SCHEDULED**

### **C. PUBLIC COMMENT AND WRITTEN COMMUNICATIONS**

*Any person may address the Board at this time upon any subject not identified on this Agenda but within the jurisdiction of the McKinleyville Community Services District; however, any matter that requires action will be referred to staff for a report of action at a subsequent Committee or Board meeting. As to matters on the Agenda, an opportunity will be*

given to address the Board when the matter is considered. **Comments are limited to 3 minutes.** Letters should be used for complex issues.

## **D. CONSENT CALENDAR**

*Consent Calendar items are expected to be routine and non-controversial, to be acted upon by the Board of Directors at one time without discussion. If any Board member, staff member, or interested person requests that an item be removed from the Consent Calendar, it shall be removed so that it may be acted upon separately.*

- |     |  |               |
|-----|--|---------------|
| D.1 | Consider Approval of the Minutes of the Board of Directors Regular Meeting on November 1, 2017 and Special Meeting on November 3, 2017 | <b>Pg. 4</b>  |
|     | Attachment 1 – Draft Minutes from November 1, 2017   | <b>Pg. 5</b>  |
|     | Attachment 2 – Draft Minutes from November 3, 2017   | <b>Pg. 9</b>  |
| D.2 | Consider Approval of September & October 2017 Treasurer's Report   | <b>Pg. 10</b> |
| D.3 | Compliance with State Double Check Valve (DCV) Law – Violations  | <b>Pg. 52</b> |

## **E. CONTINUED AND NEW BUSINESS**

- |     |  |                |
|-----|--|----------------|
| E.1 | 2017 California Water Environmental Association (CWEA) Awards Presentation   | <b>Pg. 53</b>  |
|     | Attachment 1 – CWEA Award Nomination Forms   | <b>Pg. 54</b>  |
| E.2 | Consider Approval of Phase 1 of the Mainline Replacement and Rehabilitation Master Plan  | <b>Pg. 56</b>  |
|     | Attachment 1 – Summary Results of Financial Analysis   | <b>Pg. 58</b>  |
|     | Attachment 2 – Sewer Mainline Replacement and Rehabilitation Master Plan   | <b>Pg. 104</b> |
|     | Attachment 3 – Water Mainline Replacement and Rehabilitation Master Plan   | <b>Pg. 201</b> |
|     | Attachment 4 – Master Plan Power Point Board Presentation  | <b>Pg. 288</b> |
| E.3 | Denial of Claim for Damages During Auto Collision  | <b>Pg. 295</b> |
|     | Attachment 1 – Claim #7120 Against MCSD for Unit 23 Collision  | <b>Pg. 296</b> |
|     | Attachment 2 – Signed Standard Notice of Rejection on Claim #7120  | <b>Pg. 298</b> |
| E.4 | Review the Draft Strategic Plan 2018-2022  | <b>Pg. 301</b> |
|     | Attachment 1 – Strategic Plan 2018-2022 Draft  | <b>Pg. 302</b> |
| E.5 | Consider Adoption of Shared Set of Core Values for the Guidance of Board of Director Behavior and Action   | <b>Pg. 345</b> |
|     | Attachment 1 – Incomplete DRAFT Shared Values Chart of MCSD Board  | <b>Pg. 346</b> |
| E.6 | Consider Authorization for Director Mayo to Attend the Association of California Water Agencies (ACWA) 2018 DC Conference in Washington D.C. February 27th – March 1st, 2018 | <b>Pg. 347</b> |

E.7	Consider Approval of Resolution 2017-27 Adding an Appendix for Board Direction for Committee Assignments to the Board Policy Manual	<b>Pg. 348</b>
	Attachment 1 – Resolution 2017-27 with Exhibit A	<b>Pg. 349</b>

## **F. REPORTS**

*No specific action is required on these items, but the Board may discuss any particular item as required.*

### **F.1 ACTIVE COMMITTEE REPORTS**

- a. Recreation Advisory Committee (Couch/Wheeler)
- b. Area Fund (John Kulstad/Burke)
- c. Redwood Region Economic Development Commission (Mayo/Corbett)
- d. McKinleyville Senior Center Advisory Committee (Burke, Wheeler)
- e. Audit (Corbett/Couch)
- f. Employee Negotiations (Couch/Corbett)
- g. Water Task Force (Wheeler/Burke)
- h. AdHoc No Drugs & Toxics Down the Drain (Wheeler/Burke)
- i. McKinleyville Municipal Advisory Committee (Corbett/Mayo)
- j. Cornerstone Committee (Couch/Wheeler)
- k. Groundwater Sustainability Committee (Corbett, Burke)
- l. Miscellaneous Advisory Committee (Mayo, Burke)

### **F.2 STAFF REPORTS**

- |   |                |
|---|----------------|
| a. Support Services Department (Colleen M.R. Trask) | <b>Pg. 356</b> |
| b. Operations Department (James Henry)              | <b>Pg. 358</b> |
| c. Parks & Recreation Department (Lesley Frisbee)   | <b>Pg. 363</b> |
| Attachment 1 – RAC Meeting Notes 11-16-2017         | <b>Pg. 365</b> |
| d. General Manager (Greg Orsini)                    | <b>Pg. 367</b> |
| Attachment 1 – WWMF Monthly Self Monitoring Report  | <b>Pg. 368</b> |

### **F.3 PRESIDENT'S REPORT**

### **F.4 BOARD MEMBER COMMENTS, ANNOUNCEMENTS, REPORTS AND AGENDA ITEMS REQUESTS**

## **G. ADJOURNMENT**

### **Posted 5:00 pm on December 1, 2017**

*Pursuant to California Government Code Section 54957.5. this agenda and complete Board packet are available for public inspection on the web at [McKinleyvillecsd.com/minutes](http://McKinleyvillecsd.com/minutes) or upon request at the MCSD office, 1656 Sutter Road, McKinleyville. A complete packet is also available for viewing at the McKinleyville Library at 1606 Pickett Road, McKinleyville. If you would like to receive the complete packet via email, free of charge, contact the Board Secretary at (707)839-3251 to be added to the mailing list.*

*McKinleyville Community Services District will, on request, make agendas available in appropriate alternative formats to persons with a disability, as required by Section 202 of the Americans with Disabilities Act of 1990 (42 U.S.C. Sec. 12132), and the federal rules and regulations adopted in implementation thereof. Individuals who need this agenda in an alternative format or who need a disability-related modification or accommodation in order to participate in the meeting should contact the Board Secretary at (707) 839-3251. Notification 48 hours prior to the meeting will enable the District to make reasonable arrangements for accommodations.*

# **McKinleyville Community Services District**

## **BOARD OF DIRECTORS**

December 6, 2017

TYPE OF ITEM: **ACTION**

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**ITEM: D.1**                      **Consider Approval of the Minutes of the Board of Directors Regular Meeting on November 1, 2017 and Special Meeting on November 3, 2017**

**PRESENTED BY:**              **Emily Abfalter, Board Secretary**

**TYPE OF ACTION:**           **Roll Call Vote – Consent Calendar**

### **Recommendation:**

Staff recommends that the Board review the draft minutes from the November 1, 2017 Regular Board Meeting and November 3, 2017 Special Meeting; recommend edits and adopt.

### **Discussion:**

The Draft Minutes are attached for the above listed meetings.

### **Alternatives:**

Staff analysis consists of the following potential alternative

- Take No Action

### **Fiscal Analysis:**

Not applicable

### **Environmental Requirements:**

Not applicable

### **Exhibits/Attachments:**

- Attachment 1 – Draft Minutes from November 1, 2017
- Attachment 2 – Draft Minutes from November 3, 2017



**MINUTES OF THE REGULAR MEETING OF THE MCKINLEYVILLE COMMUNITY SERVICES  
DISTRICT HELD ON WEDNESDAY, NOVEMBER 1, 2017 AT 7:00 PM  
AZALEA HALL, 1620 PICKETT ROAD, MCKINLEYVILLE, CA**

**AGENDA ITEM A. CALL TO ORDER:**

**A.1 Roll Call:** The regular session of the Board of Directors of McKinleyville Community Services District convened at 7:03 pm with the following Directors and staff in attendance:

Dennis Mayo, President	Gregory Orsini, General Manager
Mary Burke, Director	Colleen Trask, Finance Director
David Couch, Director	James Henry, Operations Director
George Wheeler, Director	Lesley Frisbee, Recreation Director
	Emily Abfalter, Board Secretary

**A.2 Pledge of Allegiance:** The Pledge of Allegiance was led by Director Wheeler.

President Mayo asked for a moment of silence to reflect on the tragedy in New York.

**A.3 Additions to the Agenda:** There were no additions to the agenda.

**A.4 Approval of the Agenda:**

**Motion:** It was moved to adopt the agenda.

**Motion By:** Director Couch; Second: Director Wheeler

There were no comments from the Board or Public.

**Roll Call:** Ayes: Burke, Couch, Mayo and Wheeler Nays: None Absent: Corbett

**Motion Summary:** Motion Passed

**A.5 Closed Session Discussion:** No closed session.

**AGENDA ITEM B. PUBLIC HEARINGS:** There were no public hearings scheduled.

**AGENDA ITEM C. PUBLIC COMMENT AND WRITTEN COMMUNICATIONS:** President Mayo opened the public comment portion of the meeting. There was no public comment.

**AGENDA ITEM D. CONSENT CALENDAR:**

D.1 Consider Approval of the Minutes of the Board of Directors Regular Meeting of October 4, 2017

D.2 Consider Approval of September 2017 Treasurer's Report

D.3 Compliance with State Double Check Valve (DCV) Law – Violations

D.4 Consider Approval of a Facilities Extension Agreement for the Lake Subdivision and the Bo Day/Griffith Road Subdivision

D.5 Consider Approval of a Conflict Waiver Consenting to Mitchell, Brisso, Delaney & Vrieze, LLP's concurrent representation of McKinleyville Community Services District (MCSD) and American Hospital Management Corp. in Connection with a Real Property Transaction Involving Potential Water Tank Relocation

**Motion:** It was moved to approve the consent calendar.

**Motion By:** Director Burke; Second: Director Wheeler

There were no comments from the Board or Public.

**Roll Call:** Ayes: Burke, Couch, Mayo and Wheeler Nays: None Absent: Corbett

**Motion Summary:** Motion Passed

## **AGENDA ITEM E. CONTINUED AND NEW BUSINESS:**

### **E.1 Presentation on the Current Status of the General Plan Update (GPU) as it Pertains to McKinleyville, Specifically Related to Water, Sewer, Street Lights, Parks and Recreation.**

Presented by Humboldt County Planning and Building Director, John Ford. General Manager Orsini asked Mr. Ford a list of questions compiled from the Board. Additional questions by members of the Board. President Mayo thanked Mr. Ford for his time and responses to questions. Public comment opened, no comments, public comment closed. Information only, no action taken.

**E.2 Review the Strategic Plan (Plan) for FY 2017-18.** General Manager Orsini reviewed the item. Director Burke asked General Manager Orsini to explain the strategic planning process for the public present. No additional Board comments. Public comment opened, no comments, public comment closed. Information only, no action taken.

**E.3 Consider Approval of Resolution 2017-25 Modifying “Attachment B” of the Board Policy Manual Making the Requested Revisions to the Annual Board Self Evaluation Worksheet.** Item presented by Board Secretary, Emily Abfalter. Public comment opened, no comments, public comment closed.

**Motion:** Approve Resolution 2017-25 modifying “Attachment B” of the Board Policy Manual per staff recommendation.

**Motion By:** Director Couch; Second: Director Wheeler

**Roll Call:** Ayes: Burke, Couch, Mayo and Wheeler Nays: None Absent: Corbett

**Motion Summary:** Motion Passed

**E.4 Review and Discuss the Draft Board Committee Policy.** Board Secretary, Emily Abfalter, reviewed the item. Board and staff discussion. Director Burke recommended adding an introduction section and any relevant dates, along with a brief history of the committees. Public comment opened, none received, public comment closed. A final version will return in December for Board approval. Information only, no action taken.

Director Corbett arrived at 8:31pm.

**E.5 Consider Approval of Recommended Changes to the McKinleyville Community Services District Rules and Regulations Rules 41.05a, 42.05 and 43.04.** Item presented by Recreation Director, Lesley Frisbee. Brief discussion between Board and staff. Public comment opened, none received, public comment closed.

**Motion:** Approve the recommended changes to the MCSD Rules and Regulations rules 41.05a, 42.05 and 43.04 per staff recommendation.

**Motion By:** Director Burke; Second: Director Corbett

**Roll Call:** Ayes: Burke, Corbett, Couch, Mayo and Wheeler Nays: None Absent: None

**Motion Summary:** Motion Passed

**E.6 Consider Approval of McKinleyville Community Services District (MCSD) and Kennedy/Jenks (K/J) Consultants Contract Amendment #10 for Construction Management (CM) Services for the Wastewater Management Facility (WWMF) Improvement Project and Authorize General Manager to Approve the Extension.** Item presented by General Manager Orsini. The Board asked clarifying questions to which General Manager Orsini responded. Public comment opened, none received, public comment closed. No additional Board comments.

**Motion:** Approve contract amendment #10 between MCSD and K/J and authorize General Manager to approve the extension per staff recommendation.

**Motion By:** Director Couch; Second: Director Corbett

**Roll Call:** Ayes: Burke, Corbett, Couch, Mayo and Wheeler Nays: None Absent: None

**Motion Summary:** Motion Passed

## AGENDA ITEM F. REPORTS

### F.1 ACTIVE COMMITTEE REPORTS

- a. **Recreation Advisory Committee (Couch/Wheeler):** Director Couch reported that they met and discussed the recommended changes to the Rules and Regulations, rules 41.05a, 42.05 and 43.04. Director Couch also noted that a BMX representative was present.
- b. **Area Fund (John Kulstad/Burke):** Did not meet.
- c. **Redwood Region Economic Development Commission (Mayo/Corbett):** President Mayo reported that they met and Rob Holmlund from City of Eureka spoke.
- d. **McKinleyville Senior Center Advisory Committee (Wheeler, Burke):** The Advisory Committee did not meet. Director Burke attended both the regular McKinleyville Senior Center Board meeting and the Executive Committee meeting. The Senior Center has applied for two Humboldt Area Foundation grants.
- e. **Audit (Corbett/Couch):** Did not meet.
- f. **Employee Negotiations (Couch/Corbett):** Did not meet.
- g. **Water Task Force (Wheeler/Burke):** Did not meet.
- h. **AdHoc No Drugs & Toxics Down the Drain (Wheeler/Burke):** Did not meet.
- i. **McKinleyville Municipal Advisory Committee (Corbett/Mayo):** Director Mayo noted that they met and The Center, along with ordinances around cannabis were discussed.
- j. **Cornerstone Committee (Couch/Wheeler):** Did not meet.
- k. **Groundwater Sustainability Committee (Corbett, Burke):** Did not meet.
- l. **Miscellaneous Advisory Committee (Mayo, Burke):** Director Burke reported that they met with Monica Rose of the Boys & Girls Club and discussed policy, practice and follow through on current acts of discrimination.

### F.2 STAFF REPORTS

- a. **Support Services Department (Colleen M.R. Trask):** Finance Director, Colleen Trask, had nothing further to add to her written report.
- b. **Operations Department (James Henry):** Operations Director, James Henry, had nothing further to add to his written report.
- c. **Parks & Recreation Department (Lesley Frisbee):** Recreation Director, Lesley Frisbee, had nothing further to add to her written report.
- d. **General Manager (Greg Orsini):** General Manager Orsini added that Anne Pierson left a voice message asking if MCSD was interested in the gazebo. Board and staff discussion about gazebo. General Manager Orsini also gave an update on the status of the Wastewater Management Facility. Director Burke thanked staff for their efforts executing the commissioning ceremony.

**F.3 PRESIDENT'S REPORT:** President Mayo shared the news of Robert Roscoe's (Sacramento Suburban Water District) passing.

**F.4 BOARD MEMBER COMMENTS, ANNOUNCEMENTS, REPORTS AND AGENDA ITEM**

**REQUESTS:** No additional comments, announcements, reports or agenda item requests.

**G. ADJOURNMENT: 9:46pm**

Motion to adjourn made by Director Corbett; Second: Director Burke

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Emily Abfalter, Board Secretary

DRAFT

**MINUTES OF THE SPECIAL MEETING OF THE MCKINLEYVILLE COMMUNITY SERVICES  
DISTRICT HELD ON FRIDAY, NOVEMBER 3, 2017 AT 8:30AM  
AZALEA HALL, 1620 PICKETT ROAD, MCKINLEYVILLE, CA**

**AGENDA ITEM A CALL TO ORDER:** The special meeting of the Board of Directors of McKinleyville Community Services District convened at 8:38 am with the following Directors and staff in attendance:

Dennis Mayo, President  
Mary Burke, Director  
John Corbett, Director  
David Couch, Director  
George Wheeler, Director

Gregory Orsini, General Manager  
Lesley Frisbee, Recreation Director  
Emily Abfalter, Board Secretary

The Pledge of Allegiance was led by President Mayo.

**AGENDA ITEM B PUBLIC COMMENT:** There was no public comment.

**AGENDA ITEM C KEYNOTE SPEAKER – 5TH DISTRICT SUPERVISOR RYAN SUNDBERG**

**AGENDA ITEM D BOARD RETREAT – CORE VALUES:** The Board, along with General Manager Orsini participated in a core values workshop facilitated by Recreation Director, Lesley Frisbee. This workshop was for Board development and no action was taken.

**AGENDA ITEM E LUNCH BREAK:** The Board took a brief recess for lunch at 12:02 pm.

**AGENDA ITEM F BOARD RETREAT – STRATEGIC PLANNING:** The strategic planning workshop, facilitated by Roger James, continued at 12:45 pm with the following Directors and staff in attendance:

Dennis Mayo, President  
Mary Burke, Director  
John Corbett, Director  
David Couch, Director  
George Wheeler, Director

Gregory Orsini, General Manager  
Colleen Trask, Finance Director  
James Henry, Operations Director  
Emily Abfalter, Board Secretary

President Mayo opened for public comment, no comments, public comment closed. No action taken was taken by the Board.

**AGENDA ITEM G ADJOURNMENT: 3:43 pm**

Motion to adjourn made by Director Corbett; meeting adjourned by President Mayo.

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Emily Abfalter, Board Secretary

**McKinleyville Community Services District**  
**DRAFT Treasurer's Report**  
**September 2017**

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Page 13	Cash Disbursement Report

**McKinleyville Community Services District**  
**Investments & Cash Flow Report**  
**As of September 30, 2017**

**Petty Cash & Change Funds** 8,892.60

**Cash**

**Operating & Money Market - Beginning Balance** 3,927,471.37

**Cash Receipts:**

Utility Billings & Other Receipts	583,996.46
Money Market Account Interest	570.44
Transfers from County Funds #2560, #4240, CalTRUST, Meas. B	-
Other Cash Receipts (incl. WWMF SRF Loan disbursements)	1,115,581.00

**Total Cash Receipts** 1,700,147.90

**Cash Disbursements:**

Transfers to County Funds #2560, #4240, CalTRUST	-
Payroll Related Expenditures	(227,858.62)
Debt Service	(13,695.71)
Capital & Other Expenditures	(630,058.47)

**Total Cash Disbursements** (871,612.80)

**Operating & Money Market - Ending Balance** 4,756,006.47

**Total Cash** 4,764,899.07

**Investments** (Interest and Market Valuation will be re-calculated as part of the year-end close, if material)

**LAIF - Beginning Balance** 130,253.25

Interest Income	-
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**LAIF - Ending Balance** 130,253.25

**Humboldt Co. #2560 - Beginning Balance** 611,724.22

Property Taxes and Assessments	-
Transfer to/from Operating Cash	-
Interest Income (net of adjustments)	657.60

**Humboldt Co. #2560 - Ending Balance** 612,381.82

**Humboldt Co. #4240 - Beginning Balance** 2,922,770.48

Transfer to/from Operating Cash	-
Transfer to/from Biosolids Reserve	-
Interest Income	2,384.22

**Humboldt Co. #4240 - Ending Balance** 2,925,154.70

**Humboldt Co. #9390 - Beginning Balance** 937,318.68

Reserves Recovery Deposits/Other Bal Withdrawals	-
Interest Income	-

**Humboldt Co. #9390 - Ending Balance** 937,318.68

**USDA Bond Reserve Fund - Beginning Balance** 108,196.40

Bond Reserve Payment	7,395.83
Debt Service Payment, Principal/Interest	-
Interest Adjustment	17.73

**USDA Bond Reserve Fund - Ending Balance** 115,609.96

**CalTRUST - Beginning Balance** 1,251,556.43

Net Transfer to/from Meas. B Teen Ctr Funds	-
Net Transfer to/from Water Fund Capacity Fees Acct	-
Net: Interest Income/Unrealized Gain/Loss	(657.17)

**CalTRUST - Ending Balance** 1,250,899.26

**Total Investments** 5,977,635.15

**Total Cash & Investments - Current Month** 10,742,534.22

**Total Cash & Investments - Prior Month** 9,904,200.91

**Net Change to Cash & Investments This Month** 838,333.31

**Cash & Investment Summary**

Cash & Cash Equivalents	9,857,455.83
Davis-Grunsky Loan Reserve	606,433.08
Waste Water Capital Reserve	103,035.35
USDA Bond Reserve	115,609.96
I-Bank Loan Reserve	60,000.00

**Total Cash & Investments** 10,742,534.22



**McKinleyville Community Services District**  
DRAFT Consolidated Balance Sheet by Fund  
As of September 30, 2017

	Governmental Funds			Proprietary Funds		
	Parks & General	Measure B	Streetlights	Water	Wastewater	Total (Memorandum Only)
ASSETS						
Current Assets						
Unrestricted cash & cash equivalents	\$ 911,578.52	\$ (620,020.20)	\$ (19,530.60)	\$ 3,840,102.18	\$ 5,613,618.72	\$ 9,725,748.62
Accounts receivable	3,167.55	-	4,886.31	413,931.07	375,434.71	797,419.64
Prepaid expenses & other current assets	44,971.73	-	2,209.25	112,407.11	51,441.20	211,029.29
Total Current Assets	959,717.80	(620,020.20)	(12,435.04)	4,366,440.36	6,040,494.63	10,734,197.55
Noncurrent Assets						
Restricted cash & cash equivalents	149,174.07	-	-	666,433.08	218,645.31	1,034,252.46
Other noncurrent assets	-	-	-	123,294.06	137,159.20	260,453.26
Capital assets (net)	-	-	-	8,357,832.20	25,640,141.05	33,997,973.25
Total Noncurrent Assets	149,174.07	-	-	9,147,559.34	25,995,945.56	35,292,678.97
TOTAL ASSETS	\$ 1,108,891.87	\$ (620,020.20)	\$ (12,435.04)	\$ 13,513,999.70	\$ 32,036,440.19	\$ 46,026,876.52
LIABILITIES & FUND BALANCE/NET ASSETS						
Current Liabilities						
Accounts payable & other current liabilities	\$ 68,957.37	\$ 431.66	\$ 3,154.57	\$ 282,153.37	\$ 744,290.19	\$ 1,098,987.16
Accrued payroll & related liabilities	89,765.00	-	-	59,583.48	59,721.03	209,069.51
Total Current Liabilities	158,722.37	431.66	3,154.57	341,736.85	804,011.22	1,308,056.67
Noncurrent Liabilities						
Long-term debt	-	-	-	2,723,339.59	12,293,819.40	15,017,158.99
Other noncurrent liabilities	-	-	-	1,080,846.16	1,140,357.04	2,221,203.20
Total Noncurrent Liabilities	-	-	-	3,804,185.75	13,434,176.44	17,238,362.19
TOTAL LIABILITIES	158,722.37	431.66	3,154.57	4,145,922.60	14,238,187.66	18,546,418.86
Fund Balance/Net Assets						
Fund balance	(345,541.05)	(620,451.86)	(15,589.61)	-	-	(981,582.52)
Net assets	1,295,710.55	-	-	3,733,584.49	4,451,930.88	9,481,225.92
Investment in capital assets, net of related debt	-	-	-	5,634,492.61	13,346,321.65	18,980,814.26
Total Fund Balance/Net Assets	950,169.50	(620,451.86)	(15,589.61)	9,368,077.10	17,798,252.53	27,480,457.66
TOTAL LIABILITIES & FUND BALANCE/NET ASSETS	\$ 1,108,891.87	\$ (620,020.20)	\$ (12,435.04)	\$ 13,513,999.70	\$ 32,036,440.19	\$ 46,026,876.52
Difference in Reclass from Cap Assets to Net Assets:						
Investment in General Capital Assets	\$ 3,147,357.23					
General Long-term Liabilities						
PG&E Streetlights Loan	44,625.93					
Meas. B Loan: Teen/Community Center	1,269,902.00					
OPEB Liability	506,005.70					
CalPERS Pension Liability/Deferred Inflows-Outflows	5,208,327.32					
Accrued Compensated Absences	86,838.94					
TOTAL GENERAL LONG-TERM LIABILITIES	\$ 7,115,699.89					



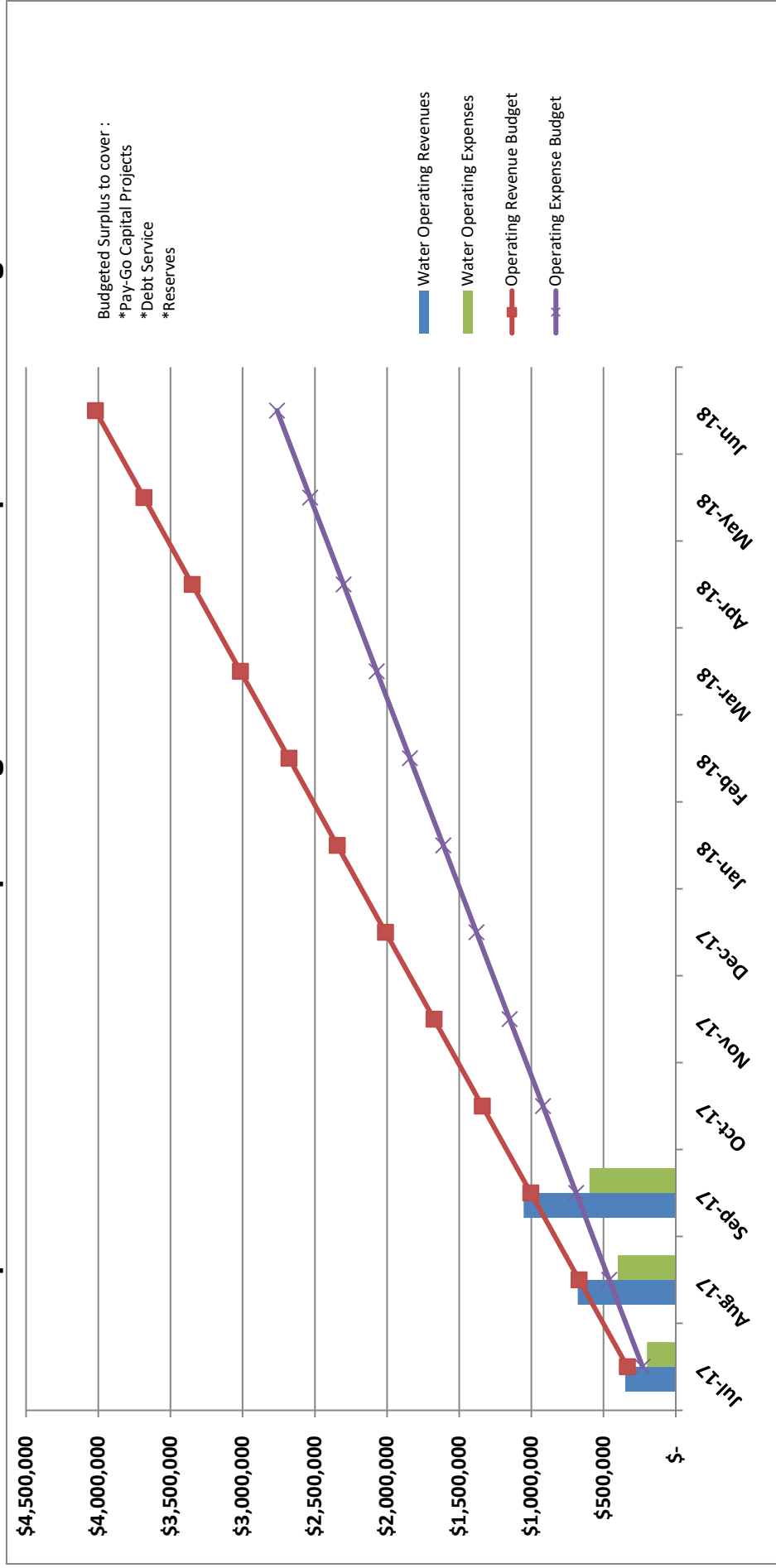
**McKinleyville Community Services District**  
**DRAFT Activity Summary by Fund, Approved Budget**  
**September 2017**

Department Summaries		September	% of Year 25.00% YTD	Original YTD Budget	Over (Under) YTD Budget	Over (Under) YTD Budget %	Notes
<b><u>Water</u></b>							
Water Sales		366,471	1,011,524	908,284	103,240	11.37%	Budget is spread evenly across 12 months, but actuals vary by month
Other Revenues		9,104	42,388	96,589	(54,201)	-56.11%	Includes YTD Capacity Fees of \$7,123. No Contrib. Construction at this time
Total Operating Revenues		375,575	1,053,912	1,004,873	49,039	4.88%	
Salaries & Benefits		67,412	214,801	231,851	(17,050)	-7.35%	
Water Purchased		74,108	220,503	251,315	(30,812)	-12.26%	Budget is spread evenly across 12 months, but actuals vary by month
Other Expenses		24,819	74,680	119,694	(45,014)	-37.61%	Budget is spread evenly across 12 months; actuals vary by month & by project
Depreciation		29,200	87,600	87,500	100	0.11%	
Total Operating Expenses		195,539	597,584	690,360	(92,776)	-13.44%	
Net Operating Income		180,036	456,328	314,513	(43,737)		
Interest Income		2,078	7,191	6,250	941	15.05%	Higher-than-estimated interest rates on the County Trust Account
Interest Expense		(5,512)	(16,658)	(16,750)	(92)	-0.55%	
<b>Net Income (Loss)</b>		<b>176,603</b>	<b>446,861</b>	<b>304,013</b>	<b>142,848</b>		
<b><u>Wastewater</u></b>							
Wastewater Service Charges		302,382	882,353	848,039	34,314	4.05%	
Other Revenues		4,799	20,711	102,075	(81,364)	-79.71%	Includes no YTD Capacity Fees yet. No Contrib. Construction at this time
Total Operating Revenues		307,181	903,065	950,114	(47,049)	-4.95%	
Salaries & Benefits		84,861	254,366	248,685	5,681	2.28%	
Other Expenses		48,445	140,836	195,810	(54,974)	-28.07%	Budget is spread evenly across 12 months, but actuals vary by month
Depreciation		41,250	123,750	123,750	-	0.00%	
Total Operating Expenses		174,556	518,953	568,245	(49,292)	-8.67%	
Net Operating Income		132,625	384,112	381,869	2,243		
Interest Income		2,275	7,569	5,500	2,069	37.62%	Higher-than-estimated interest rates on the County Trust Account
Interest Expense		(1,538)	(5,264)	(233,017)	(227,753)	-97.74%	Interest posted on the SRF WWMF loan per loan draw received
<b>Net Income (Loss)</b>		<b>133,362</b>	<b>386,417</b>	<b>154,352</b>	<b>232,065</b>		
<b>Enterprise Funds Net Income (Loss)</b>		<b>309,965</b>	<b>833,278</b>	<b>458,365</b>	<b>374,913</b>		

Treasurer's Report Page 4

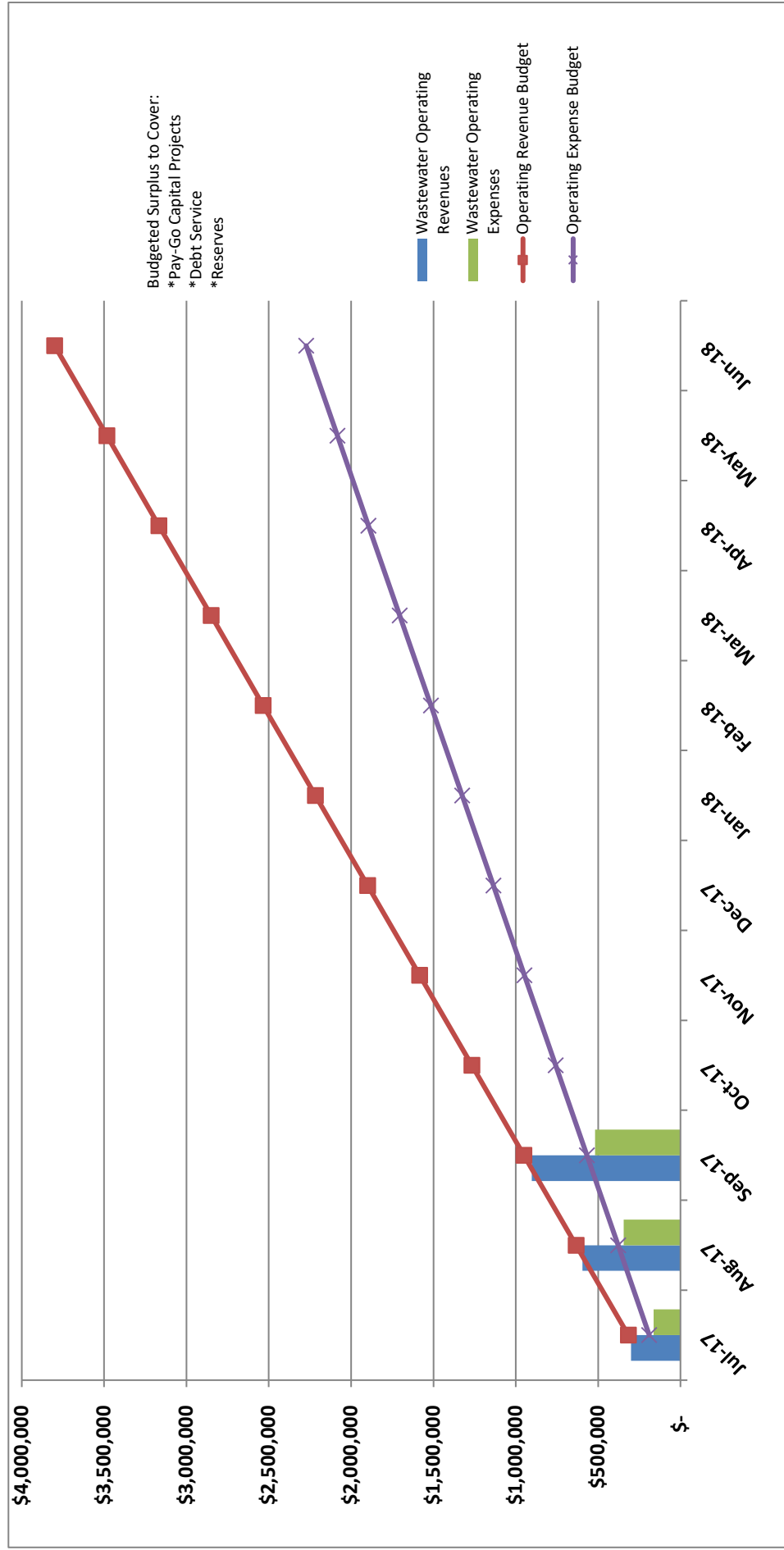
# McKinleyville Community Services District September 2017

## Comparison of Water Fund Operating Revenues & Expenses to Budget



# McKinleyville Community Services District September 2017

## Comparison of Wastewater Fund Operating Revenues & Expenses to Budget

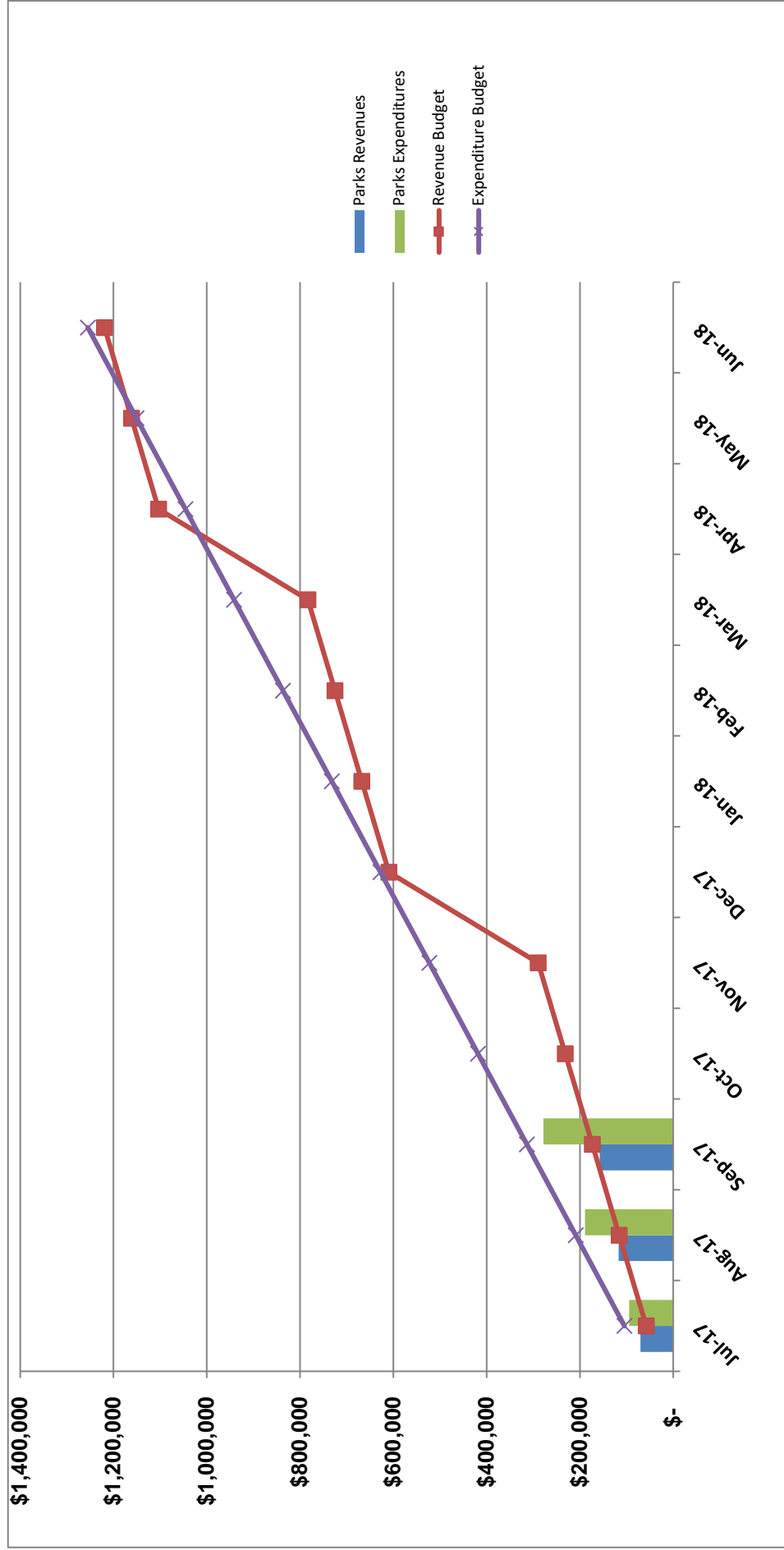


**McKinleyville Community Services District**  
**DRAFT Activity Summary by Fund, Approved Budget**  
**September 2017**

Department Summaries		September	% of Year 25.00% YTD	Original YTD Budget	Over (Under) YTD Budget	Over (Under) YTD Budget %	Notes
<b><u>Parks &amp; Recreation</u></b>							
Program Fees		25,155	98,483	104,735	(6,252)	-5.97%	Budget is spread evenly across 12 months; actuals vary by month & by event County Tax remittance December/April/June
Rents & Related Fees		5,081	18,690	29,893	(11,203)	-37.48%	
Property Taxes		-	-	131,250	(131,250)	-100.00%	
Other Revenues		9,445	37,808	36,434	1,374	3.77%	
Interest Income		790	2,536	2,500	36	1.43%	
Total Revenues		40,470	157,517	304,812	(147,295)	-48.32%	
Salaries & Benefits		74,982	224,735	235,048	(10,313)	-4.39%	Budget is spread evenly across 12 months; actuals vary by month & by project Budget is spread evenly across 12 months; actuals vary by month & by project
Other Expenditures		14,115	53,445	68,222	(14,777)	-21.66%	
Capital Expenditures		-	(112)	10,500	(10,612)	-101.07%	
Total Expenditures		89,097	278,068	313,770	(35,702)	-11.38%	
<b>Excess (Deficit)</b>		<b>(48,627)</b>	<b>(120,551)</b>	<b>(8,958)</b>	<b>(111,593)</b>		
<b><u>Measure B Assessment</u></b>							
Total Revenues		(83)	(283)	53,666	(53,949)	-100.53%	Interest & unrealized gains/losses; County Tax remittance December/April/June
Salaries & Benefits		4,282	13,118	13,616	(498)	-3.66%	Budget is spread evenly across 12 months; actuals vary by month & by project Budget is spread evenly across 12 months; actuals vary by month & by project
Other Expenditures		432	4,194	8,100	(3,906)	-48.22%	
Capital Expenditures/Loan Repayment		-	-	31,863	(31,863)	-100.00%	
Total Expenditures		4,714	17,312	53,579	(36,267)	-67.69%	
<b>Excess (Deficit)</b>		<b>(4,797)</b>	<b>(17,595)</b>	<b>87</b>	<b>(17,682)</b>		
<b><u>Street Lights</u></b>							
Total Revenues		9,299	27,085	25,313	1,772	7.00%	
Salaries & Benefits		3,150	9,209	10,887	(1,678)	-15.42%	Budget is spread evenly across 12 months; actuals vary by month & by project Budget is spread evenly across 12 months; actuals vary by month & by project
Other Expenditures		2,423	6,698	8,915	(2,217)	-24.87%	
Capital Expenditures/Loan Repayment		1,655	4,966	5,466	(500)	-9.14%	
Total Expenditures		7,229	20,873	25,268	(4,395)	-17.40%	
<b>Excess (Deficit)</b>		<b>2,070</b>	<b>6,212</b>	<b>45</b>	<b>(6,167)</b>		
<b>Governmental Funds Excess (Deficit)</b>		<b>(51,354)</b>	<b>(131,934)</b>	<b>(8,826)</b>	<b>(123,108)</b>		

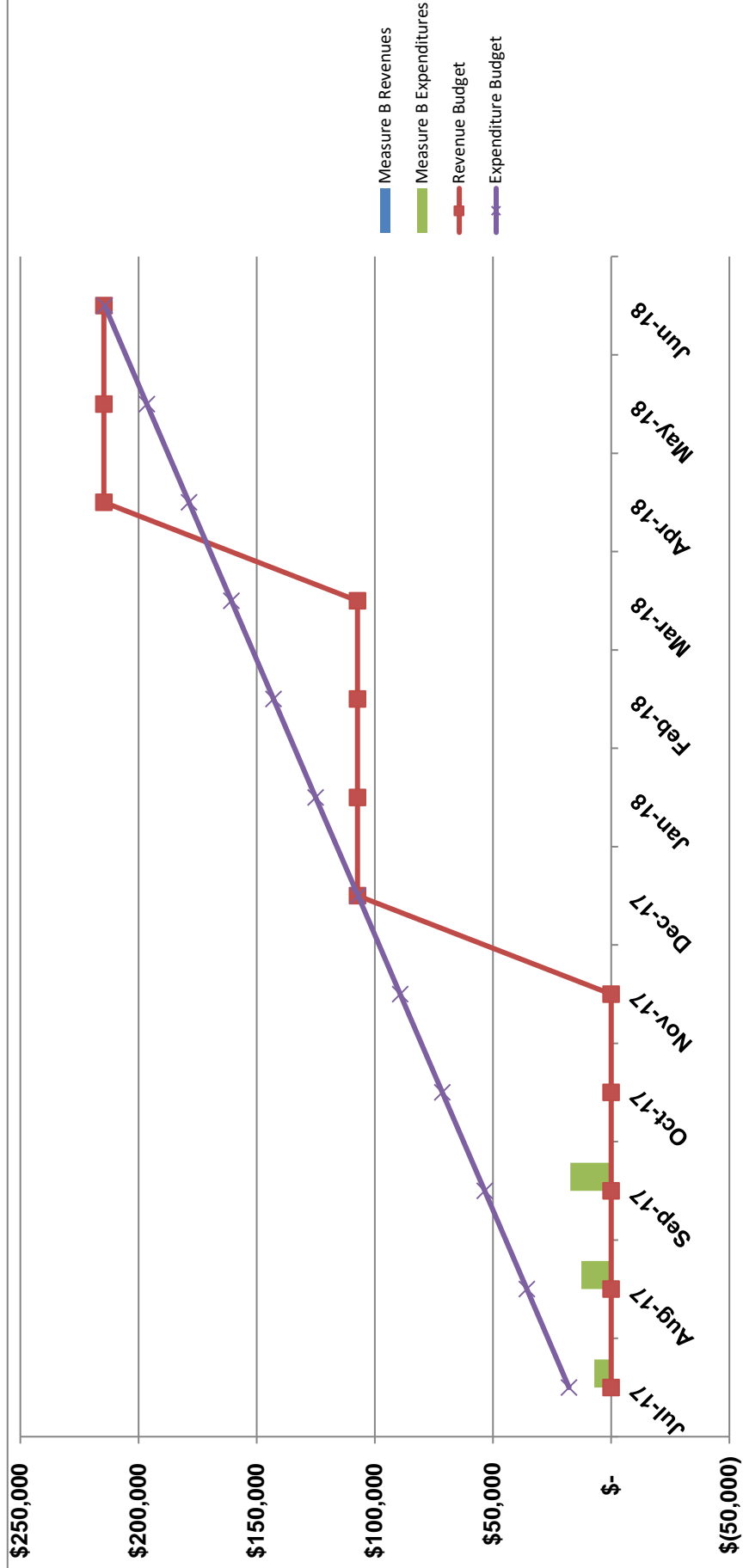
# McKinleyville Community Services District September 2017

## Comparison of Parks & Recreation Total Revenues & Expenditures to Budget



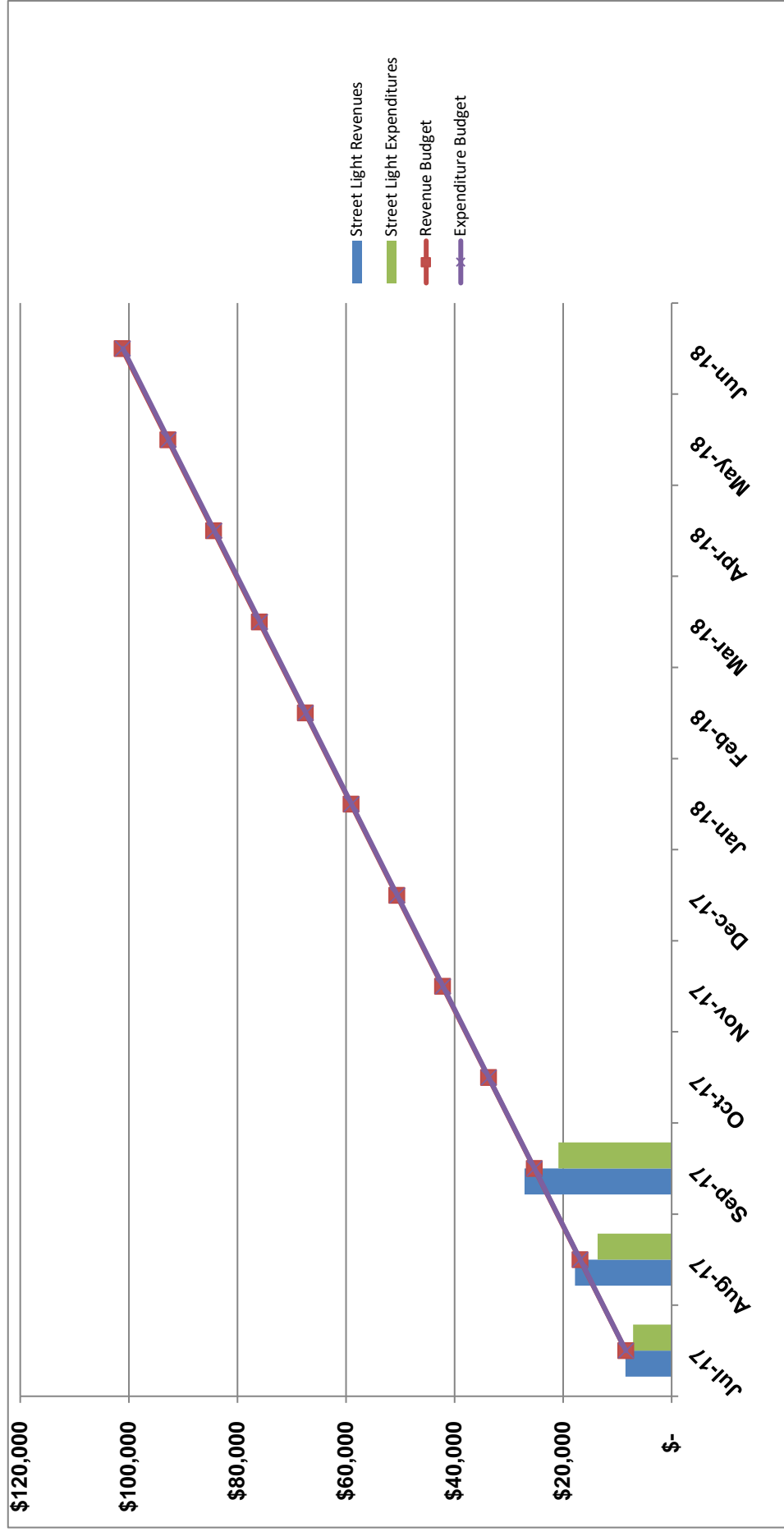
# McKinleyville Community Services District September 2017

## Comparison of Measure B Fund Total Revenues & Expenditures to Budget



# McKinleyville Community Services District September 2017

Comparison of Street Light Fund Total Revenues & Expenditures to Budget



**McKinleyville Community Services District**  
**DRAFT Capital Expenditure Report**  
**As of September 30, 2017**

	September	YTD Total	FY 17-18 Budget	Remaining		
				Budget \$	Budget %	Notes
<b>Water Department</b>						
Ramey Pump Upgrades	-	-	-	-	#DIV/0!	
Water Tank Upgrade	7,936	8,008	-	(8,008)	#DIV/0!	Cochran Tank Repainting
Alternative Energy Master Plan	-	-	50,000	50,000	100%	Alternative energy master plan
4.5m New Water Tank	-	-	700,000	700,000	100%	Drilling, LACO Assoc.
Production Meter Replacements	9,993	9,993	8,000	(1,993)	-25%	Production Meter Replacement
Emergency Water Supply	-	-	50,000	50,000	100%	Emergency Water Supply
Emergency Response Equipment	-	-	50,000	50,000	100%	Emergency Generator
Fire Hydrant System Upgrade	-	-	7,000	7,000	100%	Fire Hydrant System Upgrade
Customer Radio Meter Replacements	-	103,979	200,000	96,021	48%	Radio meters purch/install
Radio Telemetry Upgrade	-	-	150,000	150,000	100%	Radio Telemetry upgrade
Water Main Rehab & Replacement	12,713	15,438	100,000	84,562	85%	Water Main Rehab
Property Purchase & Improvements	-	-	200,000	200,000	100%	Property Purch/Improvements
<b>Subtotal</b>	<b>30,643</b>	<b>137,418</b>	<b>1,515,000</b>	<b>1,377,582</b>	<b>91%</b>	
<b>Wastewater Department</b>						
Sewer Main Rehab & Replacement	12,313	16,400	90,000	73,600	82%	Sewer Main Rehab
WWMF Sludge Disposal - next	-	-	240,000	240,000	100%	Sludge handling/disposal
WWMF/Fischer Lift Stn Grinder Upgrade	-	-	17,000	17,000	100%	Fischer Lift Stn Grinder Upgrade
Alternative Energy Master Plan	-	-	50,000	50,000	100%	Alternative energy master plan
WWMF Chlorine Injector/Controllers	-	-	10,000	10,000	100%	Chlorine Injector/Controllers
Collection System Upgrades	-	-	10,000	10,000	100%	Collection System upgrades
Fischer Lift Station Generator	-	-	50,000	50,000	100%	Fischer Lift Stn Generator
WWMF Upgrade/CEQA/Permitting	-	383,283	200,000	(183,283)	-92%	WWMF construction
Radio Telemetry Upgrade	-	-	150,000	150,000	100%	Radio Telemetry upgrade
Production Meter Replacements	9,678	9,678	-	(9,678)	#DIV/0!	Production Meter Replacement
WWMF Engr Study (next NPDES Permit)	-	427	50,000	49,573	99%	
Customer Radio Meter Replacements	-	-	200,000	200,000	100%	Radio meters purch/install
Sewer Lift Station Other Upgrades	-	-	6,000	6,000	100%	
<b>Subtotal</b>	<b>21,991</b>	<b>409,788</b>	<b>1,073,000</b>	<b>663,212</b>	<b>62%</b>	
<b>Water &amp; Wastewater Operations</b>						
Heavy Equipment	-	-	10,000	10,000	100%	Tractor attachmt
Utility Vehicles	-	86	48,000	47,914	100%	CCTV truck, 3/4 or 1-ton Pickup
Office, Corporate Yard & Shops	-	-	69,000	69,000	100%	Facilities upgrade/sealcoat
Computers & Software	353	353	11,000	10,647	97%	Server, PCs, GIS/SEMS/CADD
Fischer Ranch - Reclamation Site Upgrade (tr	-	-	30,000	30,000	100%	Match to 3rd party grant funding
Fischer Ranch - Barn & Fence upgrades, Und	-	3,504	15,000	11,496	77%	Underground valving/piping
Fischer Ranch -Disposal Site Upgrade	-	-	1,500,000	1,500,000	100%	Disposal Site Upgrade
Small Equipment & Other	-	-	35,000	35,000	100%	Emergency Eq, GPS Survey Eq
<b>Subtotal</b>	<b>353</b>	<b>3,943</b>	<b>1,718,000</b>	<b>1,714,057</b>	<b>100%</b>	
<b>Enterprise Funds Total</b>	<b>52,987</b>	<b>551,149</b>	<b>4,306,000</b>	<b>3,754,851</b>	<b>87%</b>	
<b>Parks &amp; Recreation Department</b>						
Hiller Park & Sports Complex	-	-	5,000	5,000	100%	Other Equipment & Signage
Azalea Hall Projects	-	-	27,000	27,000	100%	Flooring, Pkg Lot resurface
McKinleyville Activity Center Upgrades	-	-	2,000	2,000	100%	Roof replacement
Projects Funded by Quimby/Other Funds	-	-	15,000	15,000	100%	Covered Picnic Area
Other Parks Projects & Equipment	-	-	5,000	5,000	100%	Brush&LawnMowers/Trailer
<b>Subtotal</b>	<b>-</b>	<b>-</b>	<b>54,000</b>	<b>54,000</b>	<b>100%</b>	
<b>Streetlights</b>						
Pole Replacement	-	-	2,000	2,000	100%	Pole Replacement
<b>Subtotal</b>	<b>-</b>	<b>-</b>	<b>2,000</b>	<b>2,000</b>	<b>100%</b>	
<b>Governmental Funds Total</b>	<b>-</b>	<b>-</b>	<b>56,000</b>	<b>56,000</b>	<b>100%</b>	
<b>All Funds Total</b>	<b>52,987</b>	<b>551,149</b>	<b>4,362,000</b>	<b>3,810,851</b>	<b>87%</b>	



**McKinleyville Community Services District**  
**DRAFT Summary of Long-Term Debt Report**  
**As of September 30, 2017**

			Maturity			Balance -			Principal Maturities and Scheduled Interest	
			%	Date		August 31, 2017	30, 2017		FY-18	Thereafter
<b>Water Fund:</b>										
I-Bank Interest			3.37%	8/1/30	P	716,222.88	716,222.88	-	12,068.38	716,222.94
					I					168,053.98
State of CA Energy Commission (ARRA) Interest			1.0%	12/22/26	P	112,566.19	112,566.19	11,353.41	1,097.43	101,212.57
					I					4,619.28
State of CA (Davis Grunsky)				1/1/33	P	1,621,993.95	1,621,993.95	83,693.25		1,538,300.70
State of CA (Davis Grunsky) Deferred Interest				1/1/33	P	272,556.57	272,556.57	17,035.12		255,521.45
			2.5%		I			40,549.85		325,345.73
Total Water Fund-Principal						2,723,339.59	2,723,339.59	112,081.78		2,611,257.66
Total Water Fund-Interest								53,715.66		498,018.99
<b>Total Water Fund</b>						2,723,339.59	2,723,339.59	165,797.44		3,109,276.65
<b>Wastewater Fund:</b>										
WWMF SRF Loan Interest			1.6%	7/31/47	P	10,762,484.00	11,878,065.00	-	-	12,845,944.73
					I					-
State of CA WRCB (SCEP II) Interest			2.6%	3/27/18	P	27,175.60	27,175.60	27,176.10	706.57	-
					I					-
Umpqua Bank Interest			5.5%	12/4/17	P	18,160.93	13,578.80	13,450.25		-
					I			173.26		-
USDA (Sewer Bond) Interest			5.0%	8/1/22	P	375,000.00	375,000.00	-	9,375.00	375,000.00
					I					46,375.00
Total Wastewater Fund-Principal						11,182,820.53	12,293,819.40	40,626.35		13,220,944.73
Total Wastewater Fund-Interest								10,254.83		46,375.00
<b>Total Sewer Fund</b>						11,182,820.53	12,293,819.40	50,881.18		13,267,319.73
<b>Meas. B Fund: Teen/Comm Center Loan</b>										
			3.55%	11/1/29	P	1,269,902.00	1,269,902.00	82,831.00		1,194,394.00
					I			44,619.29		270,762.12
<b>Streetlights Fund: LED Proj Loan, PG&amp;E</b>										
			0.0%		P	47,936.73	46,281.33	16,254.00		30,396.95
					I					-
Total Principal						15,223,998.85	16,333,342.32	251,793.13		17,056,993.34
Total Interest								108,589.78		815,156.11
<b>Total</b>						<b>15,223,998.85</b>	<b>16,333,342.32</b>	<b>360,382.91</b>		<b>17,872,149.45</b>

# McKinleyville Community Services District

## Cash Disbursement Report

For the Period September 1 through September 30, 2017

Check Number	Check Date	Vendor Number	Name	Net Amount	Invoice #	Description
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### Accounts Payable Disbursements

33037	9/5/2017	*0027	REC PROGRAM REFUND AV	112.00	B70905	REC PROGRAM REFUND AV
33038	9/5/2017	*0028	AZALEA HALL DEPOSIT REFUND CB	100.00	B70905	AZALEA HALL DEPOSIT REFUND CB
33039	9/5/2017	*0029	REC PROGRAM DEPOSIT REFUND CD	262.00	B70905	REC PROGRAM DEPOSIT REFUND CD
33040	9/5/2017	BTM01	BT METAL SALES & FABRICATION	86.16	27501	CAMERA TRAILER
33041	9/5/2017	BUR01	MARY C. BURKE	250.00	B70905	BOARD MTG 8/2 & 8/14
33042	9/5/2017	COA01	COASTAL BUSINESS SYSTEMS	368.01	21176808	COPIER MONTHLY PMT
33043	9/5/2017	COR01	CORBIN WILLITS SYSTEMS, INC	888.42	B70905	MOMS MONTHLY PMT
33044	9/5/2017	HAR13	The Hartford - Priority A	392.98	B70905	GRP LIFE INSURANCE
33045	9/5/2017	MAY02	DENNIS MAYO	250.00	B70905	BOARD MTG 8/2 & 8/14
33046	9/5/2017	MAY03	DENNIS MAYO	72.75	B70905	ACWA REGION 3 & 4 JOINT PWRS MTG
33047	9/5/2017	PER01	REC PROGRAM REIMBURSEMENT AP	42.15	B70905	REC PROGRAM REIMBURSEMENT AP
33048	9/5/2017	PGE05	PG&E	1,971.52	B70905	STRLT LOAN AGMT 4190997497
33049	9/5/2017	PGE08	PG&E STREETLIGHTS	13.79	B70905	GAS & ELECTRIC S.L.- ZONE
33050	9/5/2017	PGE11	PG&E STREETLIGHTS	26.38	B70905	STREETLIGHTS
33051	9/5/2017	PGE12	PG&E	263.98	B70905	STREETLIGHTS

Check Number	Check Date	Vendor Number	Name	Net Amount	Invoice #	Description
33052	9/5/2017	PGE13	PG&E	10.51	B70905	STREETLIGHTS
33053	9/5/2017	PHI01	PHILADELPHIA INSURANCE CO	1,418.00	B70905	WWMF UPGRADE-INSURANCE
33054	9/5/2017	STE03	DONNY STEELE	250.00	B70905	CONTRACT SOFTBALL UMPIRE
33055	9/5/2017	SUD01	SUDDENLINK	325.29	B70905	INTERNET SERVICES
33056	9/5/2017	USB01	U.S. BANK TRUST N.A.	7,395.83	B70905	SEWER BOND PMT
33057	9/5/2017	VER01	VERIZON WIRELESS	54.32	B70905	CELL PHONES FOR AUG 2017
33058	9/5/2017	\B037	MQ CUSTOMER REFUND FOR BA	74.62	000B70901	MQ CUSTOMER REFUND FOR BA
33059	9/5/2017	\E003	MQ CUSTOMER REFUND FOR EN	4.65	000B70901	MQ CUSTOMER REFUND FOR EN
33060	9/5/2017	\G009	MQ CUSTOMER REFUND FOR GU	91.97	000B70901	MQ CUSTOMER REFUND FOR GU
33061	9/5/2017	\J009	MQ CUSTOMER REFUND FOR JE	16.45	000B70901	MQ CUSTOMER REFUND FOR JE
33062	9/5/2017	\L015	MQ CUSTOMER REFUND FOR LA	31.67	000B70901	MQ CUSTOMER REFUND FOR LA
33063	9/5/2017	\P010	MQ CUSTOMER REFUND FOR PA	81.34	000B70901	MQ CUSTOMER REFUND FOR PA
33064	9/5/2017	\R001	MQ CUSTOMER REFUND FOR RO	51.79	000B70901	MQ CUSTOMER REFUND FOR RO
33065	9/5/2017	\S014	MQ CUSTOMER REFUND FOR SE	66.07	000B70901	MQ CUSTOMER REFUND FOR SE
33066	9/5/2017	\S036	MQ CUSTOMER REFUND FOR SE	90.36	000B70901	MQ CUSTOMER REFUND FOR SE
33067	9/5/2017	\S037	MQ CUSTOMER REFUND FOR SU	48.06	000B70901	MQ CUSTOMER REFUND FOR SU
33068	9/5/2017	\S038	MQ CUSTOMER REFUND FOR SW	79.58	000B70901	MQ CUSTOMER REFUND FOR SW
33069	9/5/2017	\W019	MQ CUSTOMER REFUND FOR WI	34.42	000B70901	MQ CUSTOMER REFUND FOR WI
33070	9/11/2017	ACW01	CB&T/ACWA-JPIA	9,513.30	B70908	GRP. HEALTH INS

Check Number	Check Date	Vendor Number	Name	Net Amount	Invoice #	Description
33071	9/11/2017	ADV04	ADVANCED DISPLAY AND SIGN	154.97	513865	REPAIRS/SUPPLY
33072	9/11/2017	AIR01	AIRGAS USA, LLC.	103.42	906276324	SAFETY SUPPLIES
33073	9/11/2017	BAN01	BANKCARD CENTER	1,724.04	B70908	SUPPLIES PURCHASED IN AUG
33074	9/11/2017	COS03	CAPITAL ONE COMMERCIAL (COSTCO)	291.55	B70906	SUPPLIES PURCHASED
33075	9/11/2017	FER01	FERGUSON WW#1423	3,552.88	1291954	REPAIRS/ SUPPLIES
33076	9/11/2017	GRA02	GRAINGER	76.86	953743572	REPAIRS/ SUPPLIES
33077	9/11/2017	HEL01	KEVIN HELD	450.00	B70908	JR HIGH SCHOOL DANCE DJ
33078	9/11/2017	HUM01	HUMBOLDT BAY MUNICIPAL WATER DISTRICT	73,728.47	B70908	WTR PURCHASED
33079	9/11/2017	HUM08	HUMBOLDT SANITATION	1,503.60	B70908	TRASH SERVICE
33080	9/11/2017	IND01	INDEPENDENT BUS. FORMS	1,086.73	B70908	OFFICE SUPPLIES
33081	9/11/2017	IND02	INDUSTRIAL ELECTRIC SERVICE	10.74	IN24491	REPAIRS/SUPPLY
33082	9/11/2017	KER01	KERNEN CONSTRUCTION	564.39	B70908	REPAIRS/ SUPPLIES
33083	9/11/2017	MCK03	MCKINLEYVILLE OFFICE SUPPLY	46.33	B70908	SHIPMENT
33084	9/11/2017	MCK04	MCK ACE HARDWARE	243.54	B70908	REPAIRS/SUPPLY
33085	9/11/2017	MEN01	MENDES SUPPLY CO.	995.19	B70908	REPAIRS/SUPPLY
33086	9/11/2017	MIL01	Miller Farms Nursery	350.12	B70908	REPAIRS/SUPPLY
			Check Total:	388.95	B070909	REPAIRS/SUPPLY
				739.07		
33087	9/11/2017	NAP02	NAPA AUTO PARTS	212.78	B70908	REPAIRS/ SUPPLIES
33088	9/11/2017	NOR01	NORTH COAST LABORATORIES	5,769.00	B70908	LAB TESTS

Check Number	Check Date	Vendor Number	Name	Net Amount	Invoice #	Description
33089	9/11/2017	NOR35	NORTHERN HUMBOLDT	1,123.40	B70908	OPEN SPACE/ CENTRAL AVE MAINT
33090	9/11/2017	ORE01	O'REILLY AUTOMOTIVE, INC.	20.02	B70908	REPAIRS/SUPPLY
33091	9/11/2017	PGE01	PG & E (Office & Field)	34,137.77	B70911	GAS & ELECTRIC
33092	9/11/2017	POL01	POLETSKI'S APPLIANCE CENTER	270.32	B70908	REPAIRS/ SUPPLIES
33093	9/11/2017	REN01	RENNER PETROLEUM	2,699.46	B70908	GAS/OIL/LUBE
33094	9/11/2017	SIE02	SIERRA CHEMICAL CO.	1,937.49	B70908	CHLORINE/ CONTAINER DEPOSIT
33095	9/11/2017	SPO02	SPORT & CYCLE INC	79.18	207441	REC PROGRAM SUPPLIES
33096	9/11/2017	THO02	Thomas Home Center	589.46	B70908	REPAIRS/SUPPLY
33097	9/18/2017	*0030	CHILDCARE DEPOSIT REFUND MS	200.00	B70914	CHILDCARE DEPOSIT REFUND MS
33098	9/18/2017	*0031	AZALEA HALL DEPOSIT REFUND DM	100.00	B70914	AZALEA HALL DEPOSIT REFUND DM
33099	9/18/2017	*0032	AZALEA HALL DEPOSIT REFUND DB	100.00	B70914	AZALEA HALL DEPOSIT REFUND DB
33100	9/18/2017	*0033	KIDS CLUB DEPOSIT REFUND TA	224.00	B70914	KIDS CLUB DEPOSIT REFUND TA
33101	9/18/2017	ARC02	Arcata Stationers	133.64	B70905	OFFICE SUPPLIES
33102	9/18/2017	ATT01	AT&T	617.00	B70915	PHONE SERVICE
33103	9/18/2017	ATT04	AT&T	909.98	B70918	SWITCHED ETHERNET SERVICE
33104	9/18/2017	ATT05	AT&T	91.15	B70915	TELEPHONE TEEN/FAM CTR
33105	9/18/2017	ATT06	AT&T	133.48	B70915	TELEPHONE AZALEA HALL
33106	9/18/2017	AUB01	AUBURN CONSTRUCTORS, INC.	270,942.85	18	WWMF UPGRADE
33107	9/18/2017	BAS01	BASIC LABORATORY INC.	188.50	1707880	LAB TESTING

Check Number	Check Date	Vendor Number	Name	Net Amount	Invoice #	Description
33108	9/18/2017	BOR01	BORGES & MAHONEY CO.	341.60	139218	REPAIRS/ SUPPLIES
33109	9/18/2017	CAR03	CARPET WIZARD SERVICES	315.00	13513	PROFESSIONAL SERVICES
33110	9/18/2017	COA01	COASTAL BUSINESS SYSTEMS	978.13	21259094	COPIER MONTHLY PMT
33111	9/18/2017	COU02	HUMBOLDT COUNTY ASSESSOR	12.80	B70908	MEASURE B MAPS
33112	9/18/2017	DEP05	DEPARTMENT OF JUSTICE	160.00	253616	FINGERPRINTING
33113	9/18/2017	DEP06	DEPT OF TOXIC SUBSTANCES	7.50	B70915	VQ#201720243 HAZARDOUS MA
33114	9/18/2017	DON01	DON'S RENT-ALL	426.95	164302	PROFESSIONAL SERVICES
33115	9/18/2017	GAN01	GAN CONFERENCING	9.49	31999	AUDIO CONFERNECESS
33116	9/18/2017	HAC01	HACH COMPANY	65.06	10593338	REPAIRS/SUPPLY
33117	9/18/2017	HAR03	HARPER MOTORS CO.	278.91	B70908	VEHICLE REPAIRS
33118	9/18/2017	IBS01	IBS OF THE REDWOODS	87.15	180013833	REPAIRS/ SUPPLIES
33119	9/18/2017	KEE01	KEENAN SUPPLY	71.52	B70908	REPAIRS/ SUPPLIES
33120	9/18/2017	KEN03	KEN'S AUTO PARTS	60.30	B70908	REPAIRS/ SUPPLIES
33121	9/18/2017	KER01	KERNEN CONSTRUCTION	492.16	B70915	REISSUE OF CHECK
33122	9/18/2017	MAY03	DENNIS MAYO	195.00	B70908	2017 CSDA ANNUAL CONFERENCE
			Check Total:	55.50	B70909	ACWA BOARD OF DIRECTORS MTG
				250.50		
33123	9/18/2017	MCK11	MCKINLEYVILLE SENIOR CENTER	37.93	B70915	PARKS DEPT. SHARE OF INTERNET
33124	9/18/2017	MIL03	THE MILL YARD	314.72	B70908	REPAIRS/ SUPPLIES
33125	9/18/2017	MIT01	Mitchell, Brisso, Delaney	311.50	40065	LEGAL SERVICES

Check Number	Check Date	Vendor Number	Name	Net Amount	Invoice #	Description
33126	9/18/2017	MUD01	MUDDY WATERS COFFEE CO.,INC	120.00	B70915	OFFICE SUPPLIES
33127	9/18/2017	NAT06	NATIONAL METER & AUTOMATION	103,978.76	S1087472	RADIO READ METERS
33128	9/18/2017	NOR13	NORTHERN CALIFORNIA SAFETY CONSORTIUM	80.00	23653	SAFETY TRAINING
33129	9/18/2017	NYL01	NYLEX.NET	525.00	3965	PROFESSIONAL SERVICES
				1,232.18	3993	OFFICE SUPPLIES
				210.00	4023	PROFESSIONAL SERVICES
			Check Total:	<u>1,967.18</u>		
33130	9/18/2017	ORS01	GREG ORSINI	195.00	B70908	2017 CSDA ANNUAL CONFERENCE
33131	9/18/2017	OSC01	OSCAR LARSON & ASSOCIATES	191.94	9007	COCHRAN TANK RECOATING
33132	9/18/2017	SAF04	SAFEWAY INC. FILE # 72905	41.07	B70908	SUPPLIES PURCHASED
33133	9/18/2017	SLO01	FLEX SPENDING REIMBURSEMENT DS	124.37	B70915	FLEX SPENDING REIMBURSEMENT DS
33134	9/18/2017	STA01	STATEWIDE TRAFFIC	69.79	9002773	REPAIRS/ SUPPLIES
33135	9/18/2017	STA11	STAPLES CREDIT PLAN	1,023.39	B70915	OFFICE SUPPLIES
33136	9/18/2017	SUP02	SUPERIOR INSTALLS	993.56	1193	REPAIRS/ SUPPLIES
33137	9/18/2017	THR01	THRIFTY SUPPLY COMPANY	2,258.03	B70908	REPAIRS/ SUPPLIES
33138	9/18/2017	TIM01	TIMES-STANDARD	719.36	B70908	ADVERTISEMENT
33139	9/18/2017	USA01	USA BLUEBOOK	237.11	B70908	LAB TESTING SUPPLIES
33140	9/18/2017	USB02	US BANK	1,100.00	4740707	ANNUAL FEE-ADMIN 1982 SEW
33141	9/18/2017	WHE03	GEORGE WHEELER	195.00	B70908	2017 CSDA ANNUAL CONFERENCE
				55.50	B70909	ACWA BOARD OF DIRECTORS MTG
			Check Total:	<u>250.50</u>		

Check Number	Check Date	Vendor Number	Name	Net Amount	Invoice #	Description
33142	9/26/2017	CWE01	CWEA	180.00	B70908	CERT RENEWAL
33143	9/26/2017	CWE02	CWEA	180.00	B70908	CERT RENEWAL
33144	9/26/2017	LES01	LES SCHWAB TIRE CENTER	651.81	B70925	VEHICLE REPAIRS
33145	9/26/2017	MAD01	MAD RIVER ROTARY	175.00	100	ANNUAL DUES
33146	9/26/2017	PGE06	PG&E-STREETLIGHTS	14.41	B70926	GAS & ELECTRIC S.L.- ZONE
33147	9/26/2017	PGE08	PG&E-STREETLIGHTS	13.79	B70926	GAS & ELECTRIC S.L.- ZONE
33148	9/26/2017	PGE09	PG&E-STREETLIGHTS	70.25	B70926	GAS & ELECTRIC S.L.- ZONE
33149	9/26/2017	PGE10	PG&E-STREETLIGHTS	2.97	B70925	GAS & ELECTRIC S.L.- ZONE
33150	9/26/2017	STE03	DONNY STEELE	250.00	B70925	CONTRACT SOFTBALL UMPIRE
33151	9/26/2017	TEL01	TELE-WORKS, INC	2,025.00	9261	SUBSCRIPTION & IVR MINUTE
33152	9/27/2017	KEN02	KENNEDY/JENKS CONSULTANTS	66,870.78	114381P	WWMF UPGRADE
D00013	9/5/2017	SCA01	SCADA SUPPORT GROUP	17,640.00	1709	WWMF Upgrade
D00013	9/5/2017	COR07	John W. Corbett	250.00	B70905	BOARD MTG 8/2 & 8/14
D00013	9/5/2017	COU09	David R. Couch	250.00	B70905	BOARD MTG 8/2 & 8/14
D00013	9/5/2017	WHE02	George Wheeler	125.00	B70905	BOARD MTG 8/2/17
<b>Total Disbursements, Accounts Payable:</b>				636,759.92		
				<b>636,759.92</b>		

### Payroll Related Disbursements

14818-14848	9/7/2017	Various Employees	15,406.29	Employee Paychecks
14849	9/7/2017	CalPERS 457 Plan	6,641.44	RETIREMENT
			508.70	PERS 457 LOAN PMT



Check Number	Check Date	Vendor Number	Name	Net Amount	Invoice #	Description
Check Total:				7,150.14		
14850	9/7/2017	DIR01	DIRECT DEPOSIT VENDOR- US	34,783.38	B70907	Direct Deposit
14851	9/7/2017	EMP01	Employment Development	-	B70830	STATE INCOME TAX
14851	9/7/2017	EMP01	Employment Development	1,956.56	B70907	STATE INCOME TAX
				23.50	1B70830	SDI
				636.09	1B70907	SDI
			Check Total:	2,616.15		
14852	9/7/2017	HEA01	HEALTH EQUITY, ATTN: CLINT	92.00	B70907	HSA
14853	9/7/2017	HUM29	UMPQUA BANK--PAYROLL DEP.	-	B70830	FEDERAL INCOME TAX
				6,546.57	B70907	FEDERAL INCOME TAX
				323.76	1B70830	FICA
				8,745.46	1B70907	FICA
				75.72	2B70830	MEDICARE
				2,045.32	2B70907	MEDICARE
			Check Total:	17,736.83		
14854	9/7/2017	ACW01	CB&T/ACWA-JPIA	52,709.80	B70831	MED-DENTAL-EAP INSUR
14855	9/7/2017	PUB01	Public Employees PERS	17,743.30	B70831	PERS PAYROLL REMITTANCE
14856-14858	9/11/2017		Various Employees	3,722.15		Vacation Buyout
14859-14888	9/21/2017		Various Employees	14,969.42		Payroll Checks
14889	9/21/2017	CAL12	CalPERS 457 Plan	6,619.74	B70921	RETIREMENT
				508.70	1B70921	PERS 457 LOAN PMT
			Check Total:	7,128.44		
14890	9/21/2017	DIR01	DIRECT DEPOSIT VENDOR- US	32,487.88	B70921	Direct Deposit
14891	9/21/2017	EMP01	Employment Development	328.85	B70911	STATE INCOME TAX
				1,726.78	B70921	STATE INCOME TAX
				48.21	1B70911	SDI
				603.52	1B70921	SDI

Check Number	Check Date	Vendor Number	Name	Net Amount	Invoice #	Description
Check Total:				2,707.36		
14892	9/21/2017	HEA01	HEALTH EQUITY, ATTN: CLINT	92.00	B70921	HSA
14893	9/21/2017	HUM29	UMPQUA BANK--PAYROLL DEP.	895.55	B70911	FEDERAL INCOME TAX
				6,314.07	B70921	FEDERAL INCOME TAX
				664.18	1B70911	FICA
				8,316.26	1B70921	FICA
				155.36	2B70911	MEDICARE
				1,944.94	2B70921	MEDICARE
Check Total:				18,290.36		
14894-14895	9/26/2017		Various Employees	312.05		Seasonal and correction pay
14896	9/26/2017	EMP01	Employment Development	0.38	B70926	STATE INCOME TAX
				0.05	1B70926	SDI
				-	2B70926	STATE INCOME TAX
				3.29	3B70926	SDI
Check Total:				3.72		
14897	9/26/2017	HUM29	UMPQUA BANK--PAYROLL DEP.	1.45	B70926	FEDERAL INCOME TAX
				0.72	1B70926	FICA
				0.16	2B70926	MEDICARE
14897	9/26/2017	HUM29	UMPQUA BANK--PAYROLL DEP.	26.96	3B70926	FEDERAL INCOME TAX
				45.32	4B70926	FICA
				10.60	5B70926	MEDICARE
Check Total:				85.21		
Total Disbursements, Payroll:				228,036.48		
Total Check Disbursements:				864,796.40		

**McKinleyville Community Services District  
DRAFT Treasurer's Report  
October 2017**

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Page 2	Investments & Cash Flow Report
Page 3	Consolidated Balance Sheet by Fund
Page 4	Activity Summary by Fund with Selected Graphic Comparisons
Page 11	Capital Expenditure Report
Page 12	Summary of Long-Term Debt Report
Page 13	Cash Disbursement Report

**McKinleyville Community Services District**  
**Investments & Cash Flow Report**  
**As of October 31, 2017**

**Petty Cash & Change Funds** 8,892.60

**Cash**

**Operating & Money Market - Beginning Balance** 4,756,006.47

**Cash Receipts:**

Utility Billings & Other Receipts	754,053.68
Money Market Account Interest	787.81
Transfers from County Funds #2560, #4240, CalTRUST, Meas. B	-
Other Cash Receipts (incl. WWMF SRF Loan disbursements)	-

**Total Cash Receipts** 754,841.49

**Cash Disbursements:**

Transfers to County Funds #2560, #4240, CalTRUST	-
Payroll Related Expenditures	(211,609.46)
Debt Service	(78,380.47)
Capital & Other Expenditures	(1,133,453.82)

**Total Cash Disbursements** (1,423,443.75)

**Operating & Money Market - Ending Balance** 4,087,404.21

**Total Cash** 4,096,296.81

**Investments** *(Interest and Market Valuation will be re-calculated as part of the year-end close, if material)*

**LAIF - Beginning Balance** 130,253.25

Interest Income	352.54
-----------------	--------

**LAIF - Ending Balance** 130,605.79

**Humboldt Co. #2560 - Beginning Balance** 312,381.82

Property Taxes and Assessments	-
Transfer to/from Operating Cash	-
Interest Income (net of adjustments)	658.31

**Humboldt Co. #2560 - Ending Balance** 313,040.13

**Humboldt Co. #4240 - Beginning Balance** 2,925,154.70

Transfer to/from Operating Cash	-
Transfer to/from Biosolids Reserve	-
Interest Income	2,384.72

**Humboldt Co. #4240 - Ending Balance** 2,927,539.42

**Humboldt Co. #9390 - Beginning Balance** 937,318.68

Reserves Recovery Deposits/Other Bal Withdrawals	-
Interest Income	-

**Humboldt Co. #9390 - Ending Balance** 937,318.68

**USDA Bond Reserve Fund - Beginning Balance** 115,609.96

Bond Reserve Payment	7,395.83
Debt Service Payment, Principal/Interest	-
Interest Adjustment	18.56

**USDA Bond Reserve Fund - Ending Balance** 123,024.35

**CalTRUST - Beginning Balance** 1,250,899.26

Net Transfer to/from Meas. B Teen Ctr Funds	-
Net Transfer to/from Water Fund Capacity Fees Acct	-
Net: Interest Income/Unrealized Gain/Loss	(486.82)

**CalTRUST - Ending Balance** 1,250,412.44

**Total Investments** 5,687,958.29

**Total Cash & Investments - Current Month** 9,784,255.10

**Total Cash & Investments - Prior Month** 10,742,534.22

**Net Change to Cash & Investments This Month** (958,279.12)

**Cash & Investment Summary**

Cash & Cash Equivalents	8,891,651.56
Davis-Grunsky Loan Reserve	606,433.08
Waste Water Capital Reserve	103,146.11
USDA Bond Reserve	123,024.35
I-Bank Loan Reserve	60,000.00

**Total Cash & Investments** 9,784,255.10

**McKinleyville Community Services District**  
**DRAFT Consolidated Balance Sheet by Fund**  
**As of October 31, 2017**

	Governmental Funds			Proprietary Funds		
	Parks & General	Measure B	Streetlights	Water	Wastewater	Total (Memorandum Only)
ASSETS						
Current Assets						
Unrestricted cash & cash equivalents	\$ 980,850.71	\$ (642,666.34)	\$ (19,523.94)	\$ 4,007,818.06	\$ 4,881,245.68	\$ 9,207,724.17
Accounts receivable	2,781.25	-	4,354.53	345,604.69	342,581.57	695,322.04
Prepaid expenses & other current assets	39,652.98	-	1,963.78	109,952.39	48,986.48	200,555.63
Total Current Assets	1,023,284.94	(642,666.34)	(13,205.63)	4,463,375.14	5,272,813.73	10,103,601.84
Noncurrent Assets						
Restricted cash & cash equivalents	149,174.07	-	-	666,433.08	226,170.46	1,041,777.61
Other noncurrent assets	-	-	-	140,234.93	157,264.74	297,499.67
Capital assets (net)	-	-	-	8,383,844.54	26,555,691.25	34,939,535.79
Total Noncurrent Assets	149,174.07	-	-	9,190,512.55	26,939,126.45	36,278,813.07
TOTAL ASSETS	\$ 1,172,459.01	\$ (642,666.34)	\$ (13,205.63)	\$ 13,653,887.69	\$ 32,211,940.18	\$ 46,382,414.91
LIABILITIES & FUND BALANCE/NET ASSETS						
Current Liabilities						
Accounts payable & other current liabilities	\$ 70,916.31	\$ 4,415.60	\$ 550.62	\$ 305,046.90	\$ 789,775.94	\$ 1,170,705.37
Accrued payroll & related liabilities	98,017.29	-	-	59,583.48	59,721.03	217,321.80
Total Current Liabilities	168,933.60	4,415.60	550.62	364,630.38	849,496.97	1,388,027.17
Noncurrent Liabilities						
Long-term debt	-	-	-	2,723,339.59	12,289,298.81	15,012,638.40
Other noncurrent liabilities	-	-	-	1,122,138.16	1,181,649.04	2,303,787.20
Total Noncurrent Liabilities	-	-	-	3,845,477.75	13,470,947.85	17,316,425.60
TOTAL LIABILITIES	168,933.60	4,415.60	550.62	4,210,108.13	14,320,444.82	18,704,452.77
Fund Balance/Net Assets						
Fund balance	(109,179.87)	(647,081.94)	(13,756.25)	-	-	(770,018.06)
Net assets	1,112,705.28	-	-	3,783,274.61	3,625,102.92	8,521,082.81
Investment in capital assets, net of related debt	-	-	-	5,660,504.95	14,266,392.44	19,926,897.39
Total Fund Balance/Net Assets	1,003,525.41	(647,081.94)	(13,756.25)	9,443,779.56	17,891,495.36	27,677,962.14
TOTAL LIABILITIES & FUND BALANCE/NET ASSETS	\$ 1,172,459.01	\$ (642,666.34)	\$ (13,205.63)	\$ 13,653,887.69	\$ 32,211,940.18	\$ 46,382,414.91
Difference in Reclass from Cap Assets to Net Assets:						
Investment in General Capital Assets	\$ 3,147,357.23					
General Long-term Liabilities						
PG&E Streetlights Loan	42,970.53					
Meas. B Loan: Teen/Community Center	1,227,758.00					
OPEB Liability	506,005.70					
CalPERS Pension Liability/Deferred Inflows-Outflows	566,518.95					
Accrued Compensated Absences	86,838.94					
TOTAL GENERAL LONG-TERM LIABILITIES	\$ 2,430,092.12					

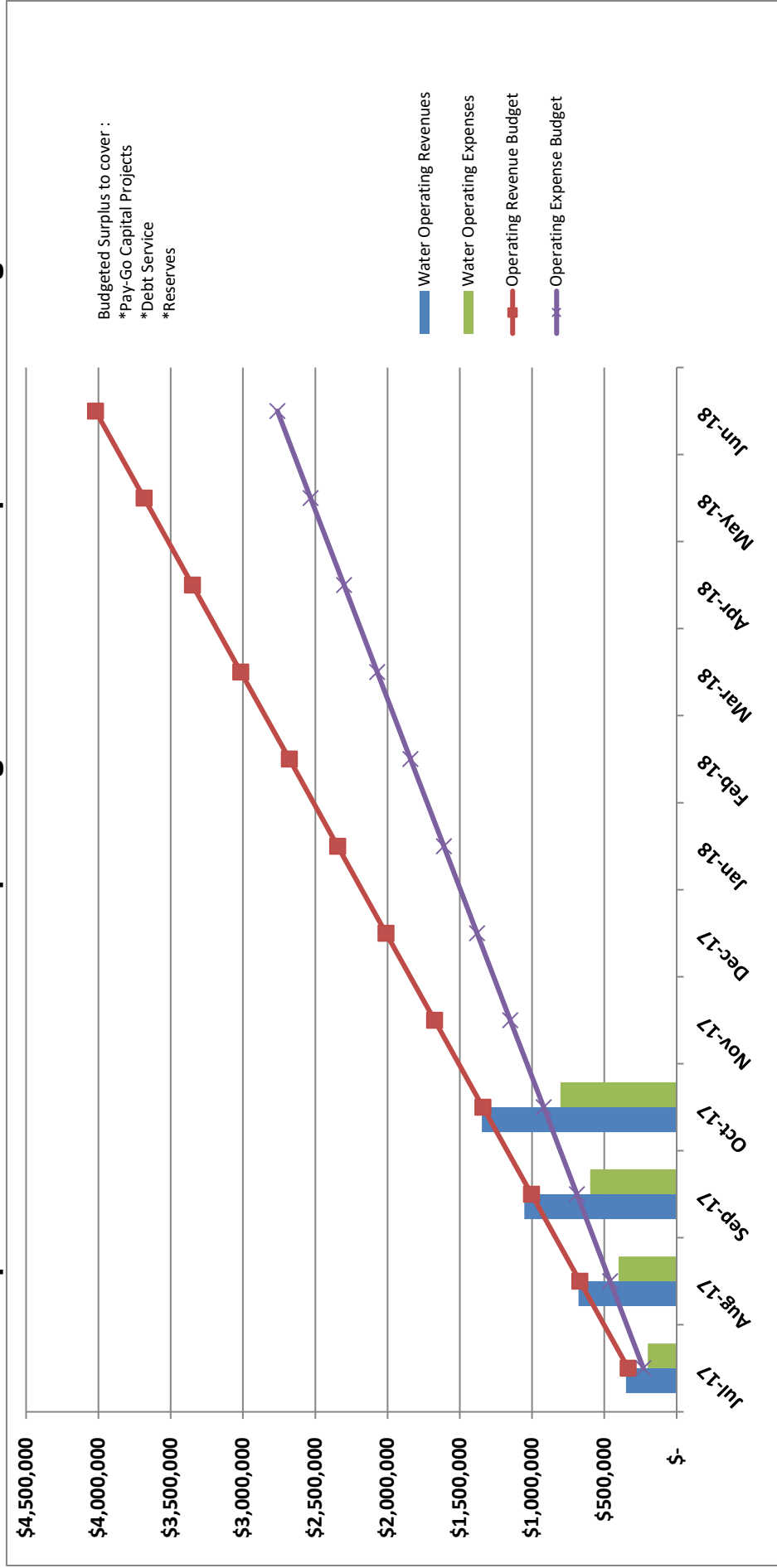
**McKinleyville Community Services District**  
**DRAFT Activity Summary by Fund, Approved Budget**  
**October 2017**

Department Summaries		October	% of Year 33.33% YTD	Original YTD Budget	Over (Under) YTD Budget	Over (Under) YTD Budget %	Notes
<b>Water</b>							
Water Sales		272,533	1,284,057	1,211,046	73,011	6.03%	Budget is spread evenly across 12 months, but actuals vary by month Includes YTD Capacity Fees of \$17,728. No Contrib. Construction at this time
Other Revenues		21,842	64,230	128,785	(64,555)	-50.13%	
Total Operating Revenues		294,375	1,348,287	1,339,831	8,456	0.63%	
Salaries & Benefits		66,507	281,309	309,134	(27,825)	-9.00%	Budget is spread evenly across 12 months, but actuals vary by month Budget is spread evenly across 12 months; actuals vary by month & by project
Water Purchased		70,410	290,913	335,087	(44,174)	-13.18%	
Other Expenses		40,622	115,302	159,592	(44,290)	-27.75%	
Depreciation		29,200	116,800	116,667	133	0.11%	
Total Operating Expenses		206,739	804,323	920,480	(116,157)	-12.62%	
Net Operating Income		87,635	543,963	419,351	(107,701)		
Interest Income		2,251	9,441	8,333	1,108	13.30%	Higher-than-estimated interest rates on the County Trust Account
Interest Expense		(5,512)	(22,169)	(22,333)	(164)	-0.73%	
<b>Net Income (Loss)</b>		<b>84,374</b>	<b>531,235</b>	<b>405,351</b>	<b>125,884</b>		
<b>Wastewater</b>							
Wastewater Service Charges		275,603	1,157,956	1,130,719	27,237	2.41%	Includes YTD Capacity Fees of \$20,770. No Contrib. Construction at this time
Other Revenues		28,744	49,455	136,100	(86,645)	-63.66%	
Total Operating Revenues		304,346	1,207,411	1,266,819	(59,408)	-4.69%	
Salaries & Benefits		82,707	337,074	331,580	5,494	1.66%	Budget is spread evenly across 12 months; actuals vary by month & by project
Other Expenses		51,233	192,069	261,079	(69,010)	-26.43%	
Depreciation		41,250	165,000	165,000	-	0.00%	
Total Operating Expenses		175,190	694,143	757,659	(63,516)	-8.38%	
Net Operating Income		129,156	513,268	509,160	4,108		
Interest Income		2,844	10,413	7,333	3,080	42.00%	Higher-than-estimated interest rates on the County Trust Account Capitalizing Interest posted on the SRF WWMF loan per loan draw received
Interest Expense		(1,891)	(7,155)	(310,690)	(303,535)	-97.70%	
<b>Net Income (Loss)</b>		<b>130,109</b>	<b>516,525</b>	<b>205,803</b>	<b>310,722</b>		
<b>Enterprise Funds Net Income (Loss)</b>		<b>214,483</b>	<b>1,047,761</b>	<b>611,154</b>	<b>436,607</b>		

Treasurer's Report Page 4

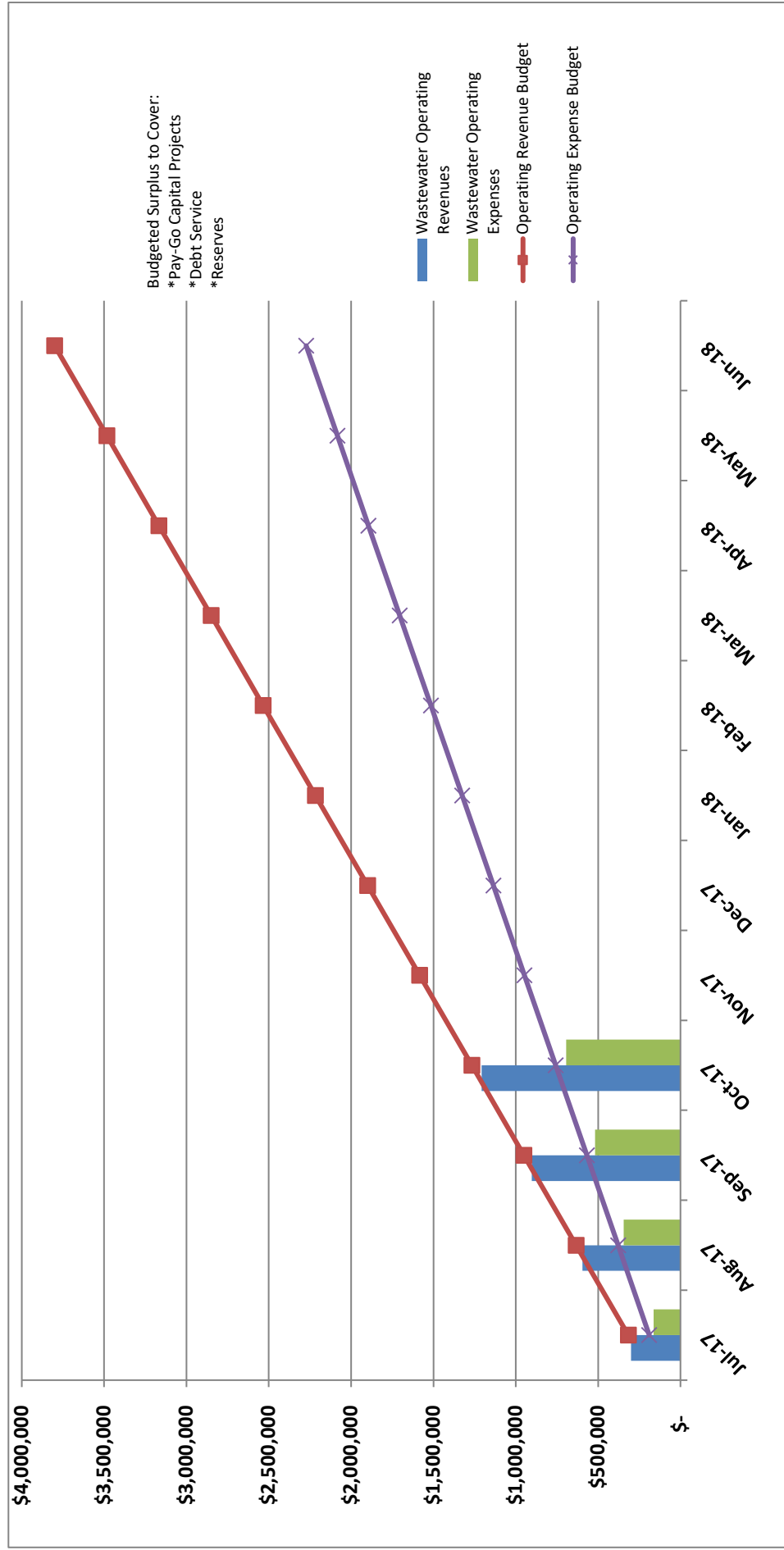
# McKinleyville Community Services District October 2017

## Comparison of Water Fund Operating Revenues & Expenses to Budget



# McKinleyville Community Services District October 2017

## Comparison of Wastewater Fund Operating Revenues & Expenses to Budget



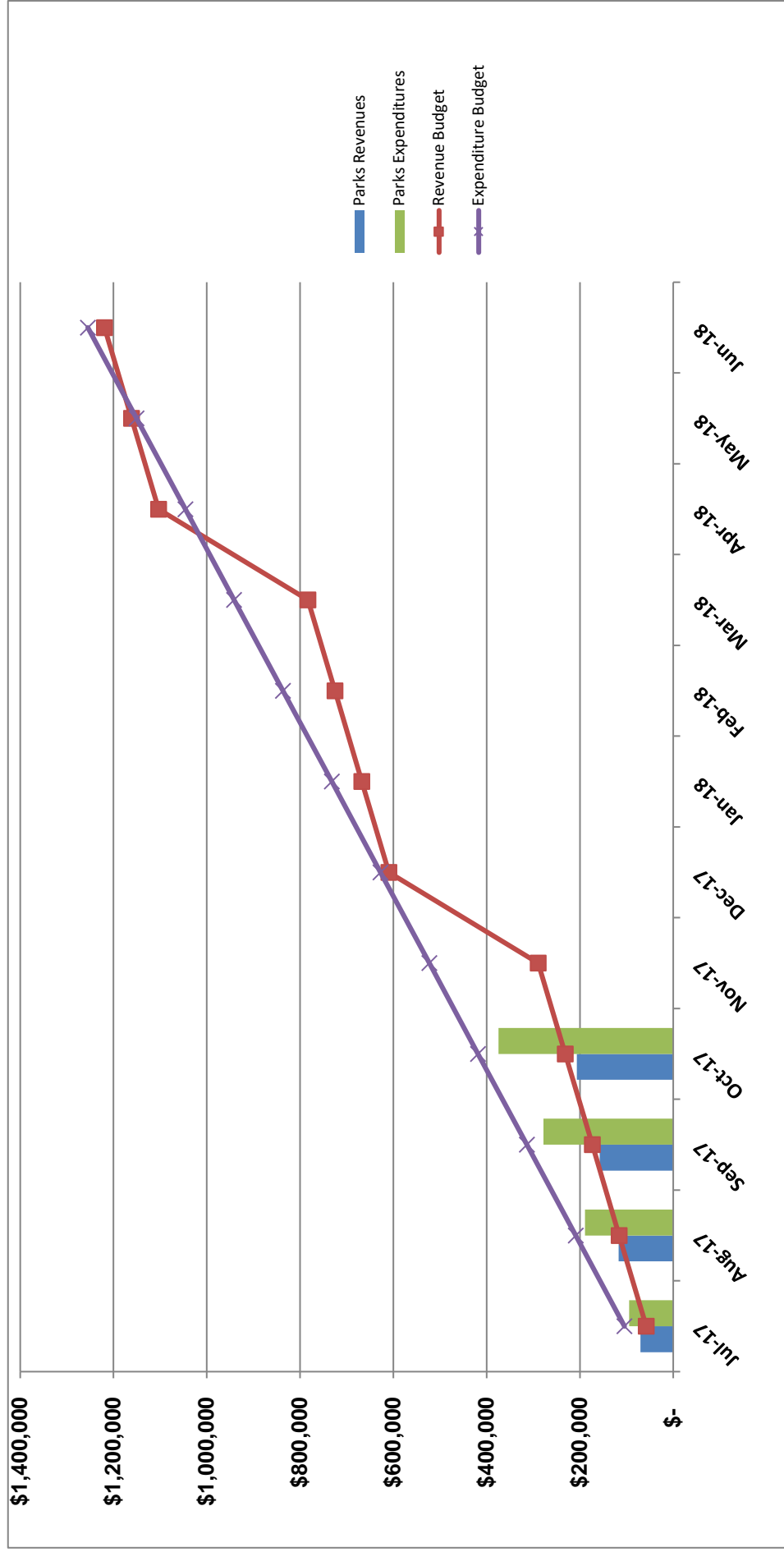


**McKinleyville Community Services District**  
**DRAFT Activity Summary by Fund, Approved Budget**  
**October 2017**

Department Summaries		October	% of Year 33.33% YTD	Original YTD Budget	Over (Under) YTD Budget	Over (Under) YTD Budget %	Notes
<b><u>Parks &amp; Recreation</u></b>							
Program Fees		32,373	130,857	139,646	(8,789)	-6.29%	Budget is spread evenly across 12 months; actuals vary by month & by event County Tax remittance December/April/June Budget is spread evenly across 12 months; actuals vary by month & by event
Rents & Related Fees		13,148	31,838	39,857	(8,019)	-20.12%	
Property Taxes		-	-	175,000	(175,000)	-100.00%	
Other Revenues		2,769	40,577	48,579	(8,002)	-16.47%	
Interest Income		823	3,359	3,333	26	0.77%	
Total Revenues		49,113	206,630	406,415	(199,785)	-49.16%	
Salaries & Benefits		77,311	302,046	313,398	(11,352)	-3.62%	Budget is spread evenly across 12 months; actuals vary by month & by project Budget is spread evenly across 12 months; actuals vary by month & by project
Other Expenditures		19,204	72,649	90,962	(18,313)	-20.13%	
Capital Expenditures		-	(112)	14,000	(14,112)	-100.80%	
Total Expenditures		96,515	374,583	418,360	(43,777)	-10.46%	
<b>Excess (Deficit)</b>		<b>(47,402)</b>	<b>(167,953)</b>	<b>(11,945)</b>	<b>(156,008)</b>		
<b><u>Measure B Assessment</u></b>							
Total Revenues		(111)	(395)	71,554	(71,949)	-100.55%	Interest & unrealized gains/losses; County Tax remittance December/April/June
Salaries & Benefits		3,720	16,838	18,155	(1,317)	-7.25%	Budget is spread evenly across 12 months; actuals vary by month & by project Loan pmts occur in October and April. Budget is spread evenly across 12 months
Other Expenditures		4,485	8,679	10,800	(2,121)	-19.64%	
Capital Expenditures/Loan Repayment		64,685	64,685	42,483	22,202	52.26%	
Total Expenditures		72,890	90,202	71,438	18,764	26.27%	
<b>Excess (Deficit)</b>		<b>(73,001)</b>	<b>(90,596)</b>	<b>116</b>	<b>(90,712)</b>		
<b><u>Street Lights</u></b>							
Total Revenues		8,836	35,920	33,750	2,170	6.43%	
Salaries & Benefits		3,054	12,263	14,516	(2,253)	-15.52%	Budget is spread evenly across 12 months; actuals vary by month & by project Budget is spread evenly across 12 months; actuals vary by month & by project
Other Expenditures		2,929	9,627	11,887	(2,260)	-19.01%	
Capital Expenditures/Loan Repayment		1,655	6,622	7,288	(666)	-9.14%	
Total Expenditures		7,638	28,511	33,691	(5,180)	-15.38%	
<b>Excess (Deficit)</b>		<b>1,197</b>	<b>7,409</b>	<b>59</b>	<b>(7,350)</b>		
<b>Governmental Funds Excess (Deficit)</b>		<b>(119,206)</b>	<b>(251,140)</b>	<b>(11,770)</b>	<b>(239,370)</b>		

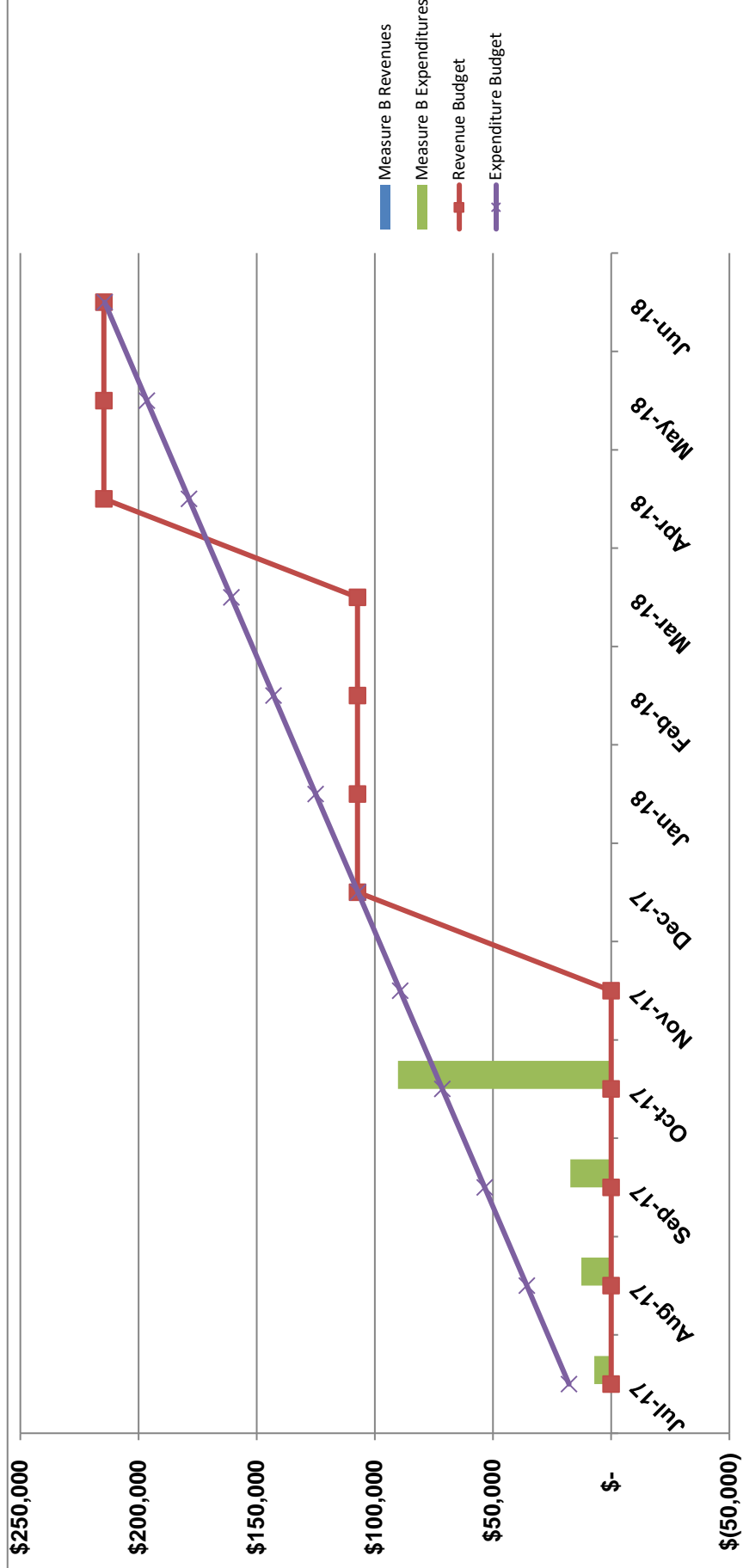
# McKinleyville Community Services District October 2017

Comparison of Parks & Recreation Total Revenues & Expenditures to Budget



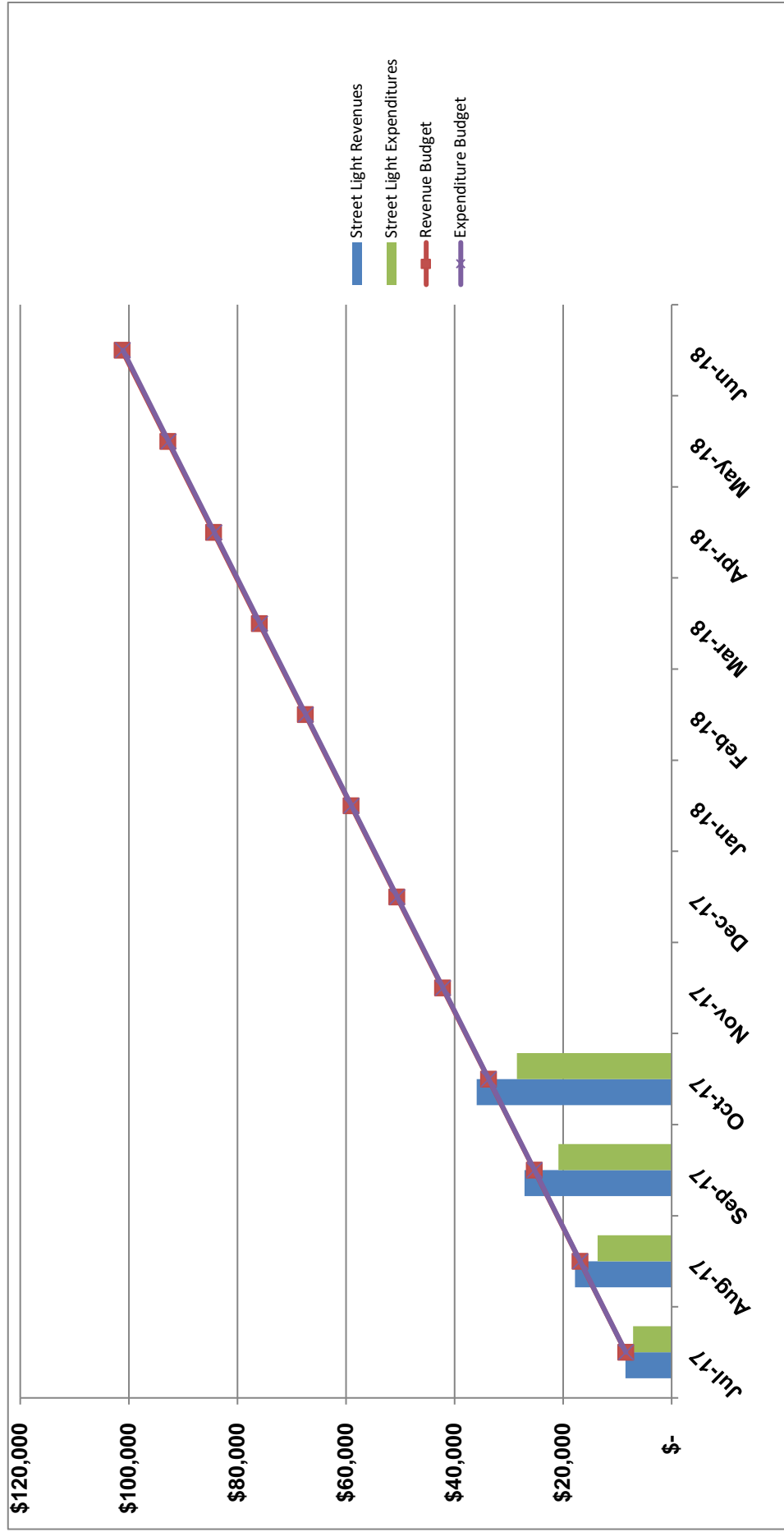
# McKinleyville Community Services District October 2017

## Comparison of Measure B Fund Total Revenues & Expenditures to Budget



# McKinleyville Community Services District October 2017

Comparison of Street Light Fund Total Revenues & Expenditures to Budget



**McKinleyville Community Services District**  
**DRAFT Capital Expenditure Report**  
**As of October 31, 2017**

	October	YTD Total	FY 17-18 Budget	Remaining		
				Budget \$	Budget %	Notes
<b><u>Water Department</u></b>						
Ramey Pump Upgrades	-	-	-	-	#DIV/0!	
Water Tank Upgrade	-	8,008	-	(8,008)	#DIV/0!	Cochran Tank Repainting
Alternative Energy Master Plan	-	-	50,000	50,000	100%	Alternative energy master plan
4.5m New Water Tank	-	-	700,000	700,000	100%	Drilling, LACO Assoc.
Production Meter Replacements	-	9,993	8,000	(1,993)	-25%	Production Meter Replacement
Emergency Water Supply	-	-	50,000	50,000	100%	Emergency Water Supply
Emergency Response Equipment	-	-	50,000	50,000	100%	Emergency Generator
Fire Hydrant System Upgrade	-	-	7,000	7,000	100%	Fire Hydrant System Upgrade
Customer Radio Meter Replacements	52,284	156,263	200,000	43,737	22%	Radio meters purch/install
Radio Telemetry Upgrade	864	864	150,000	149,136	99%	Radio Telemetry upgrade
Water Main Rehab & Replacement	1,556	16,994	100,000	83,006	83%	Water Main Rehab
Property Purchase & Improvements	-	-	200,000	200,000	100%	Property Purch/Improvements
<b>Subtotal</b>	<b>54,703</b>	<b>192,121</b>	<b>1,515,000</b>	<b>1,322,879</b>	<b>87%</b>	
<b><u>Wastewater Department</u></b>						
Sewer Main Rehab & Replacement	5,515	21,915	90,000	68,085	76%	Sewer Main Rehab
WWMF Sludge Disposal - next	-	-	240,000	240,000	100%	Sludge handling/disposal
WWMF/Fischer Lift Stn Grinder Upgrade	-	-	17,000	17,000	100%	Fischer Lift Stn Grinder Upgrade
Alternative Energy Master Plan	-	-	50,000	50,000	100%	Alternative energy master plan
WWMF Chlorine Injector/Controllers	-	-	10,000	10,000	100%	Chlorine Injector/Controllers
Collection System Upgrades	-	-	10,000	10,000	100%	Collection System upgrades
Fischer Lift Station Generator	-	-	50,000	50,000	100%	Fischer Lift Stn Generator
WWMF Upgrade/CEQA/Permitting	899,987	1,283,269	200,000	(1,083,269)	-542%	WWMF construction
Radio Telemetry Upgrade	836	836	150,000	149,164	99%	Radio Telemetry upgrade
Production Meter Replacements	-	9,678	-	(9,678)	#DIV/0!	Production Meter Replacement
WWMF Engr Study (next NPDES Permit)	-	427	50,000	49,573	99%	
Customer Radio Meter Replacements	50,637	50,637	200,000	149,363	75%	Radio meters purch/install
Sewer Lift Station Other Upgrades	-	-	6,000	6,000	100%	
<b>Subtotal</b>	<b>956,976</b>	<b>1,366,764</b>	<b>1,073,000</b>	<b>(293,764)</b>	<b>-27%</b>	
<b><u>Water &amp; Wastewater Operations</u></b>						
Heavy Equipment	-	-	10,000	10,000	100%	Tractor attachmt
Utility Vehicles	-	86	48,000	47,914	100%	CCTV truck, 3/4 or 1-ton Pickup
Office, Corporate Yard & Shops	-	-	69,000	69,000	100%	Facilities upgrade/sealcoat
Computers & Software	-	353	11,000	10,647	97%	Server, PCs, GIS/SEMS/CADD
Fischer Ranch - Reclamation Site Upgrade (tr	-	-	30,000	30,000	100%	Match to 3rd party grant funding
Fischer Ranch - Barn & Fence upgrades, Und	-	3,504	15,000	11,496	77%	Underground valving/piping
Fischer Ranch -Disposal Site Upgrade	-	-	1,500,000	1,500,000	100%	Disposal Site Upgrade
Small Equipment & Other	-	-	35,000	35,000	100%	Emergency Eq, GPS Survey Eq
<b>Subtotal</b>	<b>-</b>	<b>3,943</b>	<b>1,718,000</b>	<b>1,714,057</b>	<b>100%</b>	
<b>Enterprise Funds Total</b>	<b>1,011,679</b>	<b>1,562,827</b>	<b>4,306,000</b>	<b>2,743,173</b>	<b>64%</b>	
<b><u>Parks &amp; Recreation Department</u></b>						
Hiller Park & Sports Complex	-	-	5,000	5,000	100%	Other Equipment & Signage
Azalea Hall Projects	-	-	27,000	27,000	100%	Flooring, Pkg Lot resurface
McKinleyville Activity Center Upgrades	-	-	2,000	2,000	100%	Roof replacement
Projects Funded by Quimby/Other Funds	-	-	15,000	15,000	100%	Covered Picnic Area
Other Parks Projects & Equipment	-	-	5,000	5,000	100%	Brush&LawnMowers/Trailer
<b>Subtotal</b>	<b>-</b>	<b>-</b>	<b>54,000</b>	<b>54,000</b>	<b>100%</b>	
<b><u>Streetlights</u></b>						
Pole Replacement	-	-	2,000	2,000	100%	Pole Replacement
<b>Subtotal</b>	<b>-</b>	<b>-</b>	<b>2,000</b>	<b>2,000</b>	<b>100%</b>	
<b>Governmental Funds Total</b>	<b>-</b>	<b>-</b>	<b>56,000</b>	<b>56,000</b>	<b>100%</b>	
<b>All Funds Total</b>	<b>1,011,679</b>	<b>1,562,827</b>	<b>4,362,000</b>	<b>2,799,173</b>	<b>64%</b>	

## Principal Maturities and Scheduled Interest

	Maturity		September 30, 2017	Balance - October 31, 2017		FY-18	Thereafter	
	%	Date						
Water Fund: I-Bank Interest	3.37%	8/1/30	P	716,222.88	716,222.88	-	716,222.94	
			I			12,068.38	168,053.98	
	1.0%	12/22/26	P	112,566.19	112,566.19	11,353.41	101,212.57	
			I			1,097.43	4,619.28	
	2.5%	1/1/33	P	1,621,993.95	1,621,993.95	83,693.25	1,538,300.70	
		1/1/33	P	272,556.57	272,556.57	17,035.12	255,521.45	
		I			40,549.85	325,345.73		
				2,723,339.59	2,723,339.59	112,081.78	2,611,257.66	
						53,715.66	498,018.99	
				2,723,339.59	2,723,339.59	165,797.44	3,109,276.65	
Total Water Fund								
Wastewater Fund: WWMF SRF Loan Interest	1.6%	7/31/47	P	11,878,065.00	11,878,065.00	-	12,845,944.73	
			I			-		
	2.6%	3/27/18	P	27,175.60	27,175.60	27,176.10	-	
			I			706.57	-	
	5.5%	12/4/17	P	13,578.80	9,058.21	9,058.21	-	
			I			63.85	-	
	5.0%	8/1/22	P	375,000.00	375,000.00	-	375,000.00	
			I			9,375.00	46,375.00	
				12,293,819.40	12,289,298.81	36,234.31	13,220,944.73	
				12,293,819.40	12,289,298.81	10,145.42	46,375.00	
Total Sewer Fund								
Meas. B Fund: Teen/Comm Center Loan	3.55%	11/1/29	P	1,269,902.00	1,227,758.00	40,687.00	1,194,394.00	
			I			22,078.53	270,762.12	
	0.0%		P	44,625.93	42,970.53	12,943.20	30,396.95	
			I				-	
				16,331,686.92	16,283,366.93	201,946.29	17,056,993.34	
						85,939.61	815,156.11	
				16,331,686.92	16,283,366.93	287,885.90	17,872,149.45	
	Total							
	Streetlights Fund: LED Proj Loan, PG&E							
	Total Principal							
Total Interest								
Total								

**McKinleyville Community Services District**  
**Cash Disbursement Report**  
**For the Period October 1 through October 31, 2017**

Check Number	Check Date	Vendor Number	Name	Net Amount	Invoice #	Description
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**Accounts Payable Disbursements**

33039	10/20/2017	*0029	Ck# 033039 Reversed CD	(262.00)	B70905u	Ck# 033039 Reversed CD
33153	10/2/2017	*0034	AZALEA HALL DEPOSIT REFUND NR	100.00	B71002	AZALEA HALL DEPOSIT REFUND NR
33154	10/2/2017	*0035	AZALEA HALL DEPOSIT REFUND JM	100.00	B71002	AZALEA HALL DEPOSIT REFUND JM
33155	10/2/2017	*0036	AZALEA HALL DEPOSIT REFUND TB	100.00	B71002	AZALEA HALL DEPOSIT REFUND TB
33156	10/2/2017	*0037	REC PROGRAM REFUND MR	112.00	B71002	REC PROGRAM REFUND MR
33157	10/2/2017	ADV01	ADVANCED SECURITY SYSTEM	496.50	396551	SECURITY SYSTEMS
33158	10/2/2017	BUR01	MARY C. BURKE	125.00	B71002	BOARD MTG 9/6/2017
33159	10/2/2017	COA01	COASTAL BUSINESS SYSTEMS	395.27	21337015	COPIER MONTHLY PMT
33160	10/2/2017	COR01	CORBIN WILLITS SYSTEMS, INC	888.42	B71002	MOMS MONTHLY PMT
33161	10/2/2017	FED02	FEDAK & BROWN LLP	4,542.00	B71002	PROFESSIONAL SERVICES -AUDIT
33162	10/2/2017	GAN01	GAN CONFERENCING	5.07	32362	AUDIO CONFERENCES
33163	10/2/2017	HAR13	The Hartford - Priority A	418.48	B71002	GRP. LIFE INSURANCE
33164	10/2/2017	HUM01	HUMBOLDT BAY MUNICIPAL WATER DISTRICT	74,107.99	B71002	WATER PURCHASED
33165	10/2/2017	MAY02	DENNIS MAYO	125.00	B71002	BOARD MTG 9/6/2017
33166	10/2/2017	OLS03	EMPLOYEE REIMBURSEMENT	1,082.83	B71002	FLEX SPENDING REIMBURSEMENT

Check Number	Check Date	Vendor Number	Name	Net Amount	Invoice #	Description
33167	10/2/2017	PAC08	PACIFIC CRANE CERTIFICATI	980.00	17127	PROFESSIONAL SERVICES
			Check Total:	980.00	17128	PROFESSIONAL SERVICES
				1,960.00		
33168	10/2/2017	PER01	ASHLEY PEREZ	28.35	B71002	SUPPLIES PURCHASED REIMB
33169	10/2/2017	PGE05	PG&E STREETLIGHTS	1,971.52	B71002	STLT LOAN AGMT 4190997497
33170	10/2/2017	PGE07	PG&E STREETLIGHTS	900.44	B71002	STREETLIGHTS
33171	10/2/2017	PGE11	PGE STREETLIGHTS	26.44	B71002	STREETLIGHTS
33172	10/2/2017	PGE12	PG&E STREETLIGHTS	163.06	B71002	GAS & ELECTRIC STREETLIGHTS
33173	10/2/2017	PGE13	PG&E STREETLIGHTS	9.86	B71002	GAS & ELECTRIC STREETLIGHTS
33174	10/2/2017	SUD01	SUDDENLINK	325.29	B71002	INTERNET SERVICES
33175	10/2/2017	US801	U.S. BANK TRUST N.A.	7,395.83	B71002	SEWER BOND PAYMENT
33176	10/2/2017	USP02	USPS: ARCATA BMEU	1,337.85	B71002	NEWSLETTER POSTAGE
33177	10/2/2017	\H004	MQ CUSTOMER REFUND FOR HA	80.57	000B71001	MQ CUSTOMER REFUND FOR HA
33178	10/2/2017	\M016	MQ CUSTOMER REFUND FOR MA	68.12	000B71001	MQ CUSTOMER REFUND FOR MA
33179	10/2/2017	\R002	MQ CUSTOMER REFUND FOR RO	53.60	000B71001	MQ CUSTOMER REFUND FOR RO
33180	10/2/2017	\S040	MQ CUSTOMER REFUND FOR SE	391.83	000B71001	MQ CUSTOMER REFUND FOR SE
33181	10/2/2017	\S041	MQ CUSTOMER REFUND FOR SH	64.28	000B71001	MQ CUSTOMER REFUND FOR SH
33182	10/2/2017	\S043	MQ CUSTOMER REFUND FOR SO	41.12	000B71001	MQ CUSTOMER REFUND FOR SO
33183	10/2/2017	\T011	MQ CUSTOMER REFUND FOR TA	45.99	000B71001	MQ CUSTOMER REFUND FOR TA
33184	10/2/2017	\T013	MQ CUSTOMER REFUND FOR TO	49.39	000B71001	MQ CUSTOMER REFUND FOR TO



Check Number	Check Date	Vendor Number	Name	Net Amount	Invoice #	Description
33185	10/10/2017	*0012	REC COURSE CANCELLED-RC	75.00	B71006	REC COURSE CANCELLED-RC
33186	10/10/2017	ADV01	ADVANCED SECURITY SYSTEM	4,241.93	395585	WWMF UPGRADE-SECURITY
33187	10/10/2017	AGB01	American Geophysical	1,424.13	M17-1798	PROFESSIONAL SERVICES
33188	10/10/2017	ARC02	Arcata Stationers	114.73	B71003	OFFICE SUPPLIES
33189	10/10/2017	ASB01	ASBURY ENVIRONMENTAL SERVICES	120.00	239372	USED OIL/ MIXED OIL DISPOSAL
33190	10/10/2017	BAN01	BANKCARD CENTER	606.52	B71006	SUPPLIES PURCHASED
33191	10/10/2017	BAY01	BAY AREA COATING CONSULTANTS	5,205.58	E06210	COCHRAN TANK RECOATING
33192	10/10/2017	COR03	JOHN CORBETT	785.00	B71006	2017 CSDA ANNUAL CONFERENCE
33193	10/10/2017	CRO03	CROWN TROPHY PETALUMA	186.44	26972	REC PROGRAM SUPPLIES
33194	10/10/2017	FAN01	RODRIGO FANTI	338.00	B71006	CONTRACT INSTRUCTOR PMT
33195	10/10/2017	GHD01	GHD	14,401.00	83373	WATER & SEWER MASTER PLAN
				4,203.00	87549	PROFESSIONAL SERVICES
				25,026.25	87555	WATER & SEWER MASTER PLAN
			Check Total:	<u>43,630.25</u>		
33196	10/10/2017	GRA02	GRAINGER	99.23	957214487	REPAIRS/ SUPPLIES
33197	10/10/2017	HEN03	JAMES G. HENRY	64.00	B70911	WASTEWATER EXAM
33198	10/10/2017	HUM08	HUMBOLDT SANITATION	1,503.60	B71006	TRASH SERVICE
33199	10/10/2017	MER03	MERCER, FRASER COMPANY	206.16	55671	REPAIRS/ SUPPLIES
33200	10/10/2017	MIL01	Miller Farms Nursery	168.76	B71006	REPAIRS/SUPPLY
33201	10/10/2017	MIL03	THE MILL YARD	1,236.08	B71006	REPAIRS/SUPPLIES

Check Number	Check Date	Vendor Number	Name	Net Amount	Invoice #	Description
33202	10/10/2017	NAP02	NAPA AUTO PARTS	6.31	B71006	REPAIRS/ SUPPLIES
33203	10/10/2017	NOR13	NORTHERN CALIFORNIA SAFETY CONSORTIUM	80.00	23738	SAFETY TRAINING
33204	10/10/2017	OSC01	OSCAR LARSON & ASSOCIATES	2,538.55	9017	COCHRAN TANK RECOATING
33205	10/10/2017	REN01	RENNER PETROLEUM	2,640.94	B71006	GAS/OIL/LUBE
33206	10/10/2017	SMA01	DREW SMALL	64.00	B70908	WASTEWATER EXAM
33207	10/10/2017	THR01	THRIFTY SUPPLY COMPANY	1,211.16	B71006	REPAIRS/ SUPPLIES
33208	10/10/2017	USA01	USA BLUEBOOK	1,939.90	B71006	LAB TESTING SUPPLIES
33209	10/10/2017	VER01	VERIZON WIRELESS	59.39	B71006	CELL PHONES
33210	10/10/2017	WHE03	GEORGE WHEELER	13.00	B71006	ACWA BOARD OF DIRECTORS M
33211	10/17/2017	ABF01	EMILY ABFALTER	129.00	B70802	BOARD SECRETARY/ CLERK CONFERENCE
33212	10/17/2017	ACW01	CB&T/ACWA-JPIA	8,778.54	B71016	GRP. HEALTH INS
33213	10/17/2017	AIR01	AIRGAS USA, LLC.	45.95	B71016	REPAIRS/ SUPPLIES
33214	10/17/2017	ATT01	AT&T	619.61	B71016	PHONE SERVICE
33215	10/17/2017	ATT05	AT&T	106.55	B71016	TELEPHONE TEEN/FAM CTR
33216	10/17/2017	ATT06	AT&T	148.43	B71016	TELEPHONE AZALEA HALL
33217	10/17/2017	COA02	COASTAL BUSINESS SYSTEMS	200.25	142942	PRINTER MAINTENANCE
33218	10/17/2017	COS03	CAPITAL ONE COMMERCIAL (COSTCO)	79.18	B71006	SUPPLIES PURCHASED
33219	10/17/2017	COU02	HUMBOLDT COUNTY ASSESSOR	7.40	B71003	MEASURE B MAPS
33220	10/17/2017	EUR05	Eureka Oxygen Co	190.95	440917	PROFESSIONAL SERVICES

Check Number	Check Date	Vendor Number	Name	Net Amount	Invoice #	Description
33221	10/17/2017	FER04	FERNBRIDGE TRACTOR	44.51	01-44633	VEHICLE REPAIRS/SUPPLIES
33222	10/17/2017	GOL01	GOLDEN GATE BRIDGE TOLL	7.75	B71016	TOLL FEE
33223	10/17/2017	HEN01	HENSELL MATERIALS INC.	89.51	0549544IN	REPAIRS/SUPPLY
33224	10/17/2017	IBS01	IBS OF THE REDWOODS	119.17	14089	VEHICLE REPAIRS/ SUPPLIES
33225	10/17/2017	KEN02	KENNEDY/JENKS CONSULTANTS	46,249.38	115216	WWMF UPGRADE
33226	10/17/2017	LIG01	LIGHTHOUSE ELECTRICAL INC	15,468.60	1927	DIGITAL CONTROL PROJ
33227	10/17/2017	MCK11	MCKINLEYVILLE SENIOR CENTER	37.93	B71016	PARKS DEPT. SHARE OF INTERNET
33228	10/17/2017	MEN01	MENDES SUPPLY CO.	376.45	B71006	REPAIRS/SUPPLY
33229	10/17/2017	NOR01	NORTH COAST LABORATORIES	3,577.00	B71006	LAB TESTING
33230	10/17/2017	NOR35	NORTHERN HUMBOLDT EMPLOYMENT SVCS	1,074.50	B71006	CENTRAL AVE/ OPEN SPACE MAINT
33231	10/17/2017	PGE01	PG & E (Office & Field)	26,535.08	B71016	GAS & ELECTRIC
33232	10/17/2017	PGE10	PG&E STREETLIGHTS	2.97	B71016	GAS & ELECTRIC S.L.- ZONE
33233	10/17/2017	SAF04	SAFEWAY INC. FILE # 72905	92.92	B71006	SUPPLIES PURCHASED
33234	10/17/2017	STA09	S.W.R.C.B.	60.00	B71016	CERTIFICATION RENEWAL
33235	10/17/2017	STA11	STAPLES CREDIT PLAN	346.82	B71016	OFFICE SUPPLIES
33236	10/17/2017	STA13	S.W.R.C.B.	60.00	B71016	CERTIFICATION RENEWAL
33237	10/17/2017	STE03	DONNY STEELE	350.00	B71016	CONTRACT SOFTBALL UMPIRE
33238	10/17/2017	THO02	Thomas Home Center	531.27	B71006	REPAIRS/SUPPLY
33239	10/17/2017	USP02	USPS: ARCATA BMEU	1,500.00	B71006	REFILL PERMIT 202-BULK MAIL

Check Number	Check Date	Vendor Number	Name	Net Amount	Invoice #	Description
33240	10/23/2017	*0038	REC PROGRAM REFUND NH	23.80	B71018	REC PROGRAM REFUND NH
33241	10/23/2017	ADV01	ADVANCED SECURITY SYSTEM	103.50	395498	SECURITY SERVICES TEEN CENTER
33242	10/23/2017	ATT04	AT&T	909.98	B71020	SWITCHED ETHERNET SERVICE
33243	10/23/2017	AUB01	AUBURN CONSTRUCTORS, INC.	827,568.75	19	WWMF UPGRADE
33244	10/23/2017	BEN02	BENTLEY SYSTEMS, INC.	831.00	B71006	SUBSCRIPTION RENEWAL
33245	10/23/2017	CAS01	PETTY CASH	187.73	B71018	SUPPLIES PURCHASED
33246	10/23/2017	COA01	COASTAL BUSINESS SYSTEMS	978.13	21424422	OFFC EQUIP LEASE
33247	10/23/2017	COS02	COSTCO MEMBERSHIP	180.00	B71005	MEMBERSHIP RENEWAL
33248	10/23/2017	DEP05	DEPARTMENT OF JUSTICE	64.00	259713	FINGERPRINTING ADMIN./GEN
33249	10/23/2017	FAS01	FASTENAL COMPANY	44.75	CAEUR8597	REPAIRS/ SUPPLIES
33250	10/23/2017	FRE02	MICHAEL FREEMAN	37.53	B71023	WWMF UPGRADE REIMB
33251	10/23/2017	IND01	INDEPENDENT BUS. FORMS	467.73	34807	OFFICE SUPPLIES
33252	10/23/2017	IND02	INDUSTRIAL ELECTRIC SERVICE	101.04	B71023	REPAIRS/SUPPLY/WWMF UPGRADE
33253	10/23/2017	JAC04	JACKSON & EKLUND, INC.	184.00	190415	ACCT. / AUDIT
33254	10/23/2017	LIG01	LIGHTHOUSE ELECTRICAL INC	1,207.50	1950	DIGITAL CONTROL PROJECT
33255	10/23/2017	MCK02	MCKINLEYVILLE GLASS CO.	78.62	45223	REPAIRS/ SUPPLIES
33256	10/23/2017	MCK04	MCK ACE HARDWARE	208.46	B71018	REPAIRS/SUPPLY
33257	10/23/2017	NAT06	NATIONAL METER & AUTOMATION	15,578.94	S1088717	RADIO READ METERS
33258	10/23/2017	ORE01	O'REILLY AUTOMOTIVE, INC.	137.29	B71006	REPAIRS/SUPPLY

Check Number	Check Date	Vendor Number	Name	Net Amount	Invoice #	Description
33259	10/23/2017	PIT01	PITNEY BOWES	1,506.00	B71020	POSTAGE METER LEASE
33260	10/23/2017	THR02	THREE G'S HAY & GRAIN	132.00	59432	REPAIRS/SUPPLY
33261	10/23/2017	TRI02	TRINITY DIESEL INC.	725.39	W25095	REPAIRS/ SUPPLIES
33262	10/23/2017	UPS01	UPS	95.68	Y6R493417	DELIVERY SERVICE
33263	10/23/2017	WES13	WESTERN WEB	1,128.33	19619	NEWSLETTER PRINTING
33264	10/24/2017	UMP04	UMPQUA BANK	64,684.76	B71024P	LOAN PAYMENT
33265	10/24/2017	ORE01	O'REILLY AUTOMOTIVE, INC.	134.29	B71024P	REPAIRS/SUPPLY
33266	10/31/2017	*0039	AZALEA HALL DEPOSIT REFUND BD	100.00	B71031	AZALEA HALL DEPOSIT REFUND BD
33267	10/31/2017	*0040	AZALEA HALL DEPOSIT REFUND SS	100.00	B71031	AZALEA HALL DEPOSIT REFUND SS
33268	10/31/2017	*0041	AZALEA HALL DEPOSIT REFUND ER	100.00	B71031	AZALEA HALL DEPOSIT REFUND ER
33269	10/31/2017	ABF01	EMILY ABFALTER	326.08	B71030	CSDA BOARD SECRETARY CONFERENCE
33270	10/31/2017	ACW02	ASSOC. OF CALIFORNIA WATER AGENCIES	11,215.00	B71030	ANNUAL DUES
33271	10/31/2017	HUC01	DELILAH HUCK	390.00	B71030	CONTRACT INSTRUCTOR PAYMENT
33272	10/31/2017	MCK03	MCKINLEYVILLE OFFICE SUPPLY	28.02	B71030	OFFICE SUPPLIES
33273	10/31/2017	MIT01	Mitchell, Brisso, Delaney	231.00	40240	LEGAL SERVICES
33274	10/31/2017	PGE05	PG&E-STREETLIGHTS	1,971.34	B71030	STLT LOAN-4190997497
33275	10/31/2017	PGE06	PG&E-STREETLIGHTS	14.40	B71030	GAS & ELECTRIC S.L.- ZONE
33276	10/31/2017	PGE07	PG&E STREETLIGHTS	900.12	B71030	STREETLIGHTS
33277	10/31/2017	PGE08	PG&E-STREETLIGHTS	13.79	B71030	GAS & ELECTRIC S.L.- ZONE

Check Number	Check Date	Vendor Number	Name	Net Amount	Invoice #	Description
33278	10/31/2017	PGE09	PG&E-STREETLIGHTS	70.18	B71030	GAS & ELECTRIC S.L.- ZONE
33279	10/31/2017	PGE11	PG&E-STREETLIGHTS	26.43	B71031	STREETLIGHTS
33280	10/31/2017	PGE12	PG&E	170.78	B71031	GAS & ELECTRIC
D00014	10/2/2017	COR07	JOHN W. CORBETT	125.00	B71002	BOARD MTG 09/6/2017
				125.00	B71002	BOARD MTG 09/06/2017
				125.00	B71002	BOARD MTG 9/6/2017
			Check Total:	375.00		
				<u>1,205,969.82</u>		
			<b>Total Disbursements, Accounts Payable:</b>	<u><u>1,205,969.82</u></u>		

#### Payroll Related Disbursements

14898-14926	10/10/2017	Various Employees	13,512.62			Payroll Checks
14927	10/10/2017	CalPERS 457 Plan	6,499.25	B71006		RETIREMENT
		Check Total:	508.46	1B71006		PERS 457 LOAN PMT
			<u>7,007.71</u>			
14928	10/10/2017	DIRECT DEPOSIT VENDOR- US	30,850.27	B71006		Direct Deposit
14929	10/10/2017	Employment Development	1,579.96	B71006		STATE INCOME TAX
		Check Total:	565.87	1B71006		SDI
			<u>2,145.83</u>			
14930	10/10/2017	Employment Dev Department	3,066.81	B70930		SUI
14931	10/10/2017	HEALTH/EQUITY, ATTN: CLINT	92.00	B71006		HSA
14932	10/10/2017	UMPQUA BANK--PAYROLL DEP.	5,761.06	B71006		FEDERAL INCOME TAX
		Check Total:	7,797.54	1B71006		FICA
			1,823.64	2B71006		MEDICARE
			<u>15,382.24</u>			
14933	10/10/2017	CB&T/ACWA-JPIA	53,444.56	B70930		MED-DENTAL-EAP INSUR

Check Number	Check Date	Vendor Number	Name	Net Amount	Invoice #	Description
14934	10/10/2017	PUB01	Public Employees PERS	16,731.57	B70930	PERS PAYROLL REMITTANCE
14935-14961	10/24/2017		Various Employees	14,089.22		Payroll Checks
14962	10/24/2017	CAL12	CalPERS 457 Plan	6,502.29	B71024	RETIREMENT
			Check Total:	489.45	1B71024	PERS 457 LOAN PMT
				6,991.74		
14963	10/24/2017	DIR01	DIRECT DEPOSIT VENDOR- US	30,703.40	B71024	Direct Deposit
14964	10/24/2017	EMP01	Employment Development	1,552.21	B71024	STATE INCOME TAX
			Check Total:	570.28	1B71024	SDI
				2,122.49		
14965	10/24/2017	HEA01	HEALTH EQUITY, ATTN: CLINT	92.00	B71024	HSA
14966	10/24/2017	HUM29	UMPQUA BANK--PAYROLL DEP.	5,705.24	B71024	FEDERAL INCOME TAX
			Check Total:	7,838.56	1B71024	FICA
				1,833.20	2B71024	MEDICARE
				15,377.00		
			<b>Total Disbursements, Payroll:</b>	211,609.46		
			<b>Total Check Disbursements:</b>	<b>1,417,579.28</b>		

# McKinleyville Community Services District

## BOARD OF DIRECTORS

December 6, 2017

TYPE OF ITEM: **ACTION**

**ITEM: D.3**                      **Compliance with State Double Check Valves (DCV) Law**

**PRESENTED BY:**              **James Henry, Operations Director**

**TYPE OF ACTION:**              **Roll Call Vote – Consent Calendar**

### **Recommendation:**

Staff recommends that the Board authorize staff to provide the listed customers with formal notice that their water service will be discontinued in one month if they have not come into compliance with state law regarding water service cross-connection in accordance with MCSD Rules 7 and 10.

### **Discussion:**

Customers listed below are currently not in compliance with State Law regarding cross connection control for water customers with an alternate water supply. These customers have been notified of their respective violations, as noted, and have been provided notification of this meeting.

1st Notice	October 13, 2017
10 Day Notice	November 22, 2017
Board Meeting	December 6, 2017
Lock	January 8, 2018
<b>ROUTE 16</b>	

Account #	Address	Model of DCV	Date s/o out
16-569-000	3401 Halfway Ave	Febco 850	
16-065-012	1230 Pedroni Road	Febco 850	



# **McKinleyville Community Services District**

## **BOARD OF DIRECTORS**

December 6, 2017

TYPE OF ITEM: **INFORMATIONAL**

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**ITEM: E.1**                      **2017 California Water Environmental Association (CWEA) Awards Presentation**

**PRESENTED BY:**              **James Henry, Operations Director**

**TYPE OF ACTION:**            **None**

### **Recommendation:**

Staff recommends that the Board listen to the presentation, air questions and take public comment.

### **Discussion:**

Each year California Water Environmental Association (CWEA) presents awards at their annual banquet. Nomination forms are submitted by agencies recognizing their staff or facility for the award. A committee then reviews the nominations and chooses a worthy recipient for each category.

This year, the following members of staff received awards, Christopher Jones, Erik Jones and Bill McBroome. Christopher Jones was honored with the Collection System Person of the Year Award due to his hydro-cleaning and sewer lateral installation experience. Erik Jones was honored with the Pretreatment Person of the Year Award due to his hard work with creating and implementing the Districts Pretreatment Program, along with building good relationships with the businesses. Bill McBroome received a special award, recognizing him for the training that he conducts on Electrical/ Instrumentation for neighboring Utility Operators.

James Henry received the Past President Award for serving as the CWEA President for 2017.

### **Alternatives:**

Take no action

### **Fiscal Analysis:**

Not applicable

### **Environmental Requirements:**

Not applicable

### **Exhibits/Attachments**

- Attachment 1 – CWEA Award Nomination Forms

<b>North Coast Section</b> <b>California Water Environmental Association</b> <b>2017 Awards Nomination Form</b>			
(Make Selection Here)			
	Collection Systems: Person of the Year		
	Collection Systems: System of the Year	Miles of Pipe	
	Electrical/Instrumentation: Person of the Year		
	Engineering Achievement Award		
	Research Achievement Award		
	Laboratory: Person of the Year		
	Mechanical Technician of the Year		
	Operations: Operator of the Year		
	Treatment Plant - Overall: Plant of the Year	Plant Flow in MGD	
<b>X</b>	Pretreatment Pollution Prevention & Stormwater: Person of the Year		
	Safety: Plant of the Year Award	Number of Employees	
	Supervisor of the Year		
	Public Education: Program of the Year	Budget in Dollars	
<b>Nominations are due by September 22, 2017 to the address below.</b>			
Name of Nominee:		ERIK JONES	
Title:		LEADMAN	
Employer:		McKINLEYVILLE C.S.D.	Phone #: 707-839-3251
Address:		P.O. BOX 2037, McKINLEYVILLE, CA. 95519	
<small>Describe below or as an attachment, why this person/ agency qualifies to receive this award. Use specific examples whenever possible. Attach any supporting information. The winning NCS applicant will need to provide additional information later and fill out the online application if they desire to proceed with the state CWEA competition. Contact James Henry for more information on the state nomination process.</small>			
I am nominating Erik Jones as the Pretreatment Person of the Year. Erik has been working hard on creating and implementing a Pretreatment Program within the business community of McKinleyville. This has required him to start a working relationship with the businesses in town that fall under the EPA regulations as he developed industrial discharge permits for each business that discharges into our collection system. He performs annual testing & inspections of the businesses to ensure they are in compliance with the Industrial Discharge Permits.			
Nominator:	MIKE FREEMAN	Title:	UTILITY PERSON
Employer:	McKINLEYVILLE C.S.D.	Phone #:	707-839-3251
Address:	P.O. BOX 2037 McKINLEYVILLE, CA 95519		
Signature:			
<b>Send, email or Fax Applications to:</b> James Henry at MCSD P.O.Box 2037 McKinleyville, CA 95519 Phone: 839-3251 Fax: 839-8685 jhenry@mckinleyvillecsd.com			

**North Coast Section  
California Water Environmental Association  
2017 Awards Nomination Form**

(Make Selection Here)

<input checked="" type="checkbox"/>	Collection Systems: Person of the Year	
	Collection Systems: System of the Year	Miles of Pipe
	Electrical/Instrumentation: Person of the Year	
	Engineering Achievement Award	
	Research Achievement Award	
	Laboratory: Person of the Year	
	Mechanical Technician of the Year	
	Operations: Operator of the Year	
	Treatment Plant - Overall: Plant of the Year	Plant Flow in MGD
	Pretreatment Pollution Prevention & Stormwater: Person of the Year	
	Safety: Plant of the Year Award	Number of Employees
	Supervisor of the Year	
	Public Education: Program of the Year	Budget in Dollars

**Nominations are due by September 22, 2017 to the address below.**

Name of Nominee:	Chris Jones		
Title:	Utility II		
Employer:	MCSN	Phone #:	
Address:			

Describe below or as an attachment, why this person/ agency qualifies to receive this award. Use specific examples whenever possible. Attach any supporting information. The winning NCS applicant will need to provide additional information later and fill out the online application if they desire to proceed with the state CWEA competition. Contact James Henry for more information on the state nomination process.

Chris has been a leader at MCSN in Collection system maintenance and Repair. He is quick to teach those around him everything he knows. His method of training works well with new employees. He has an understanding of collection systems that allows him an insight that work well for Troubleshooting and repairs. He is confident and skilled in running all necessary equipment used to Repair and maintain the system. He is an asset to MCSN

Nominator:	Bill McBroom	Title:	UTI
Employer:	MCSN	Phone #:	
Address:			
Signature:			

**Send, email or Fax Applications to:** James Henry at MCSN  
P.O.Box 2037  
McKinleyville, CA 95519  
Phone: 839-3251  
Fax: 839-8685  
jhenry@mckinleyvillecsd.com

# McKinleyville Community Services District

## BOARD OF DIRECTORS

December 6, 2017

TYPE OF ITEM: **ACTION**

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**ITEM: E.2**                      **Consider Approval of Phase 1 of the Mainline Replacement and Rehabilitation Master Plan**

**PRESENTED BY:**              **Gregory Orsini, General Manager**

**TYPE OF ACTION:**          **Roll Call Vote**

### **Recommendation:**

Staff recommends that the Board participate in the presentation of the Phase 1 Water and Sewer Mainline Replacement and Rehabilitation Master Plan (Master Plan) document, discuss Report Findings, take public comment and approve the Water and Sanitary Sewer Main Line Replacement and Rehabilitation Master Plan Phase 1 Report.

### **Discussion:**

Phase 1 of the Master Plan has been prepared to provide framework for planning, funding and implementing replacement, rehabilitation and upgrades to the District's water and sewer mainlines.

The Master Plan effort includes an analysis of all pipelines, manholes, blow-off assemblies, valves, air release and pressure reducing valves. These reports will serve as the first of two (or potentially three) phases of the Master Plan efforts. The final Master Plan will serve as a final planning and budgeting outline to ensure the District is able to continue their high level of service to the community well into the future.

The original water distribution was constructed in 1973 and the original sewer collection system was constructed in 1976. As the system continues to age, replacement and rehabilitation of existing infrastructure will be necessary to maintain an effective, functional system.

### **Alternatives:**

Staff analysis consists of the following potential alternative

- Take No Action

### **Fiscal Analysis:**

Refer to **Attachment 1**.

### **Environmental Requirements:**

Not applicable

**Exhibits/Attachments:**

- Attachment 1 – Summary Results of Financial Analysis
- Attachment 2 – Sewer Mainline Replacement and Rehabilitation Master Plan
- Attachment 3 - Water Mainline Replacement and Rehabilitation Master Plan
- Attachment 4 – Master Plan Power Point Board Presentation





## MEMORANDUM

To:	Pat Kaspari; Greg Orsini; James Henry; Colleen Trask
From:	Jeff McGarvey
Date:	November 21, 2017
Client:	McKinleyville Community Services District
Project:	Water and Sewer Master Plans
Subject:	Summary Results of Financial Pro Forma Analyses

Willdan Financial Services (Willdan) was retained by McKinleyville Community Services District (M/CSD) to develop multi-year pro forma analyses for both the water and sewer systems reflecting the potential financial impact of infrastructure improvements identified in the Master Plans recently completed by GHD, Inc (GHD). Specifically, Willdan prepared 30-year projections of net operating results for each system under three (3) specific scenarios for funding the improvements identified in the master plans. These scenarios included completing the improvements in 50 years, 75 years, and 100 years. Within each of these scenarios, Willdan developed three (3) distinct analyses depicting operating results under the following rate paths:

- No Rate Increases – referred to as the “do nothing” scenario and assesses the utilities ability to support operations and capital improvements assuming no future rate increases.
- Just-in-Time Rate Increases – calculates the level of rates adjustments needed on a “just-in-time” basis to meet system revenue requirements, including capital improvements.
- Phased-In Rate Increases – depicts a possible rate path that attempts to avoid large rate adjustments by phasing them in over time.

The following narrative provides a brief description of the process and assumptions that were used to develop the operating revenues and expenses as well as a summary of each of the scenarios. Additional detail is available should it be required.

### General Approach and Assumptions

To develop the requested scenarios, it was necessary to first develop a projection of the operating revenues and expenses for each system. As a note, while the requested scenarios consider up to 100 years, for purposes of the financial analysis, the projection period is limited to 30 years (Fiscal Years 2018-2047). For purposes of this technical memorandum, it was determined that it is only necessary to display 20 years (Fiscal Years 2018 – 2037). However, the detailed 30-year analysis and worksheets are available for review.

### Projected Revenues and Expenses

M/CSD’s approved operating budget for Fiscal Year 2018 served as the basis for projected operating revenues.

### Projected Revenues

- Water Base Charges, Water Metered Sales and Sewer Charges - future years were adjusted assuming growth (1.0%) and any rate adjustments considered as part of each respective scenario.
- Other System Revenues - with the exception of interest earnings, were projected using annual escalation factors that were reviewed with the M/CSD staff.
- Interest Earnings - were projected based on the average annual cash balances in each respective fiscal year assuming an interest earnings rate of 0.25%.

### Projected Expenses

- Each line item expense (per the budget) was analyzed and annual escalation factors were assigned to each item. As with the revenue, these escalation factors were reviewed and revised by M/CSD staff.
- Current Depreciation Expense was held constant throughout the projection period.
- Depreciation Expense associated with the infrastructure improvements identified in the Master Plans was estimated based on an Estimated Average Useful Life of 40 years.

### Capital Improvement Plan (CIP)

- Capital expenditures for the period FY2018-2036, excluding those anticipated by the Master Plans, were provided by M/CSD.
- Funding of the CIP was assumed to occur per M/CSD policy which states that expenditures exceeding \$500,000 per project per year will be funded through debt. Those projects costing less than \$500,000 are assumed to be funded from available cash on a pay-as-you-go basis.

### Master Plan

- Costs associated with the infrastructure improvements identified in the master plan(s) were developed by M/CSD's consulting engineer, GHD. Per GHD's master plans, the estimated costs of rehabilitation of the water and sewer systems are approximately \$142,000,000 each. Willdan assumed these costs estimates were reliable and did not attempt to independently verify.
- At the direction of GHD, it was assumed that the master plan projects would initiate in fiscal year 2027.

### Debt Service

- For purposed of estimating annual debt service payments we assumed a term of 30 years, interest rate of 4.0% and issuance costs of 2.0%.

## Observations and Comments

### General Findings

- The infrastructure improvements identified in the Master Plans are not feasible without rate increases. The level of rate adjustments necessary to support the Master Plan vary from scenario to scenario and are summarized below in Table 1:

**Table 1**

Range of Potential Rate Adjustments

Amortization Period	Rate Scenario	Water System	Sewer System
50 yr	None	-	-
	Just-in-Time	0.00% - 41.40% Avg – 7.28%	0.00% - 43.40% Avg – 8.62%
	Phased-In (levelized)	6.25%	7.25%
75 yr	None	-	-
	Just-in-Time	0.00% - 30.30% Avg – 5.59%	0.00% - 42.10% Avg – 7.16%
	Phased-In (levelized)	5.00%	6.10%
100 yrs	None	-	-
	Just-in-Time	0.00% - 24.20% Avg – 4.64%	0.00% - 44.00% Avg – 6.37%
	Phased-In (levelized)	4.10%	5.50%

More detailed tables are included herein. Also, upon request we can produce the detailed worksheets from the analysis.

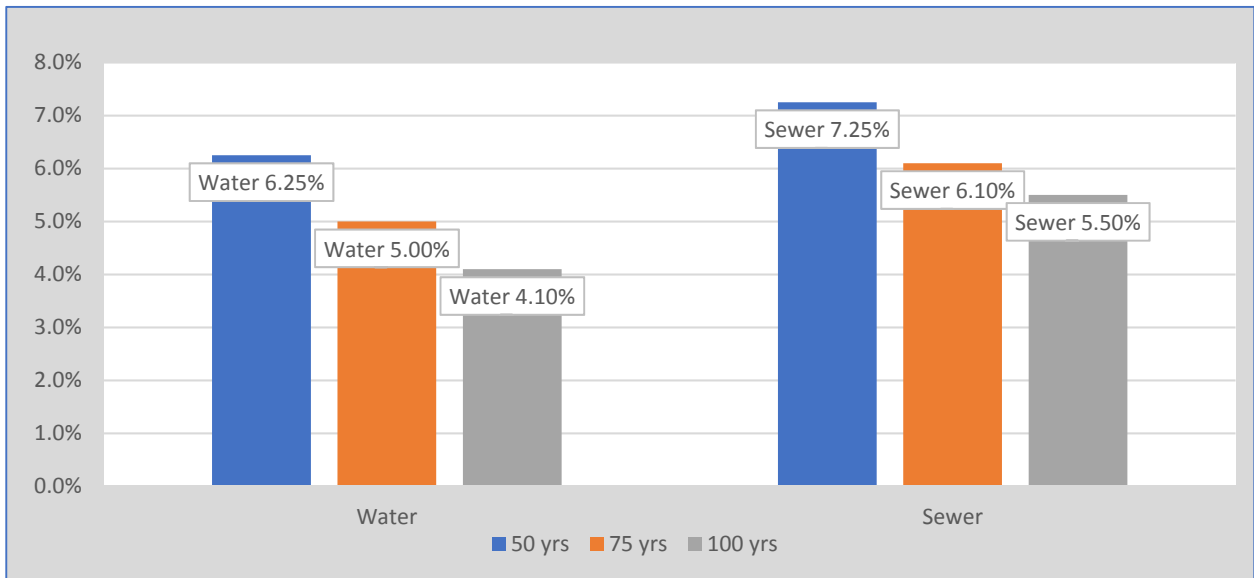
### Observations

- As can be seen from Table 1 and the supporting tables that follow, the longer amortization period has the effect of reducing the average rate adjustments required for each utility.

Figure 1 below presents the estimated annual rate adjustments necessary assuming M/CSD opts to use the Phased-In, or levelized, method to increase rates.



**Figure 1**  
Estimated Annual Rate Adjustments



- As described herein, M/CSD currently has a policy which indicates that all capital improvement projects exceeding \$500,000 in a given year will be funded by debt. Likewise, any project under the \$500,000 threshold will be funded on a pay-as-you-go basis with available unrestricted cash. The scenarios summarized in this memorandum assume M/CSD will continue with this policy. However, as part of this exercise, the project team discussed the possibility of revising this policy to allow for “bundling” of project costs into few borrowings to take advantage of any available savings in debt issuance costs. For example, M/CSD could bundle 3 years of project costs into a single borrowing possibly resulting in efficiencies and savings. It is important to note that Willdan is not a registered financial advisor and is not recommending a particular debt structure. Should M/CSD be interested in examining any potential benefits from alternative debt management approaches we encourage you to consult with your financial advisor.
- As indicated herein, for the Water System, Phased-In (Levelized) rate scenarios, cash reserves accumulate well above the targeted amounts. This is a result of the need to meet the targeted debt service coverage requirement of 1.20. It is not recommended that M/CSD accumulate excess cash reserves. In the event the need to meet debt service coverage requirements results in the generation of excess cash, this cash should be used to offset the need for future debt. As discussed during this effort, a more detailed and specific capital financing plan will be developed as part of a future engagement.

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# Water System

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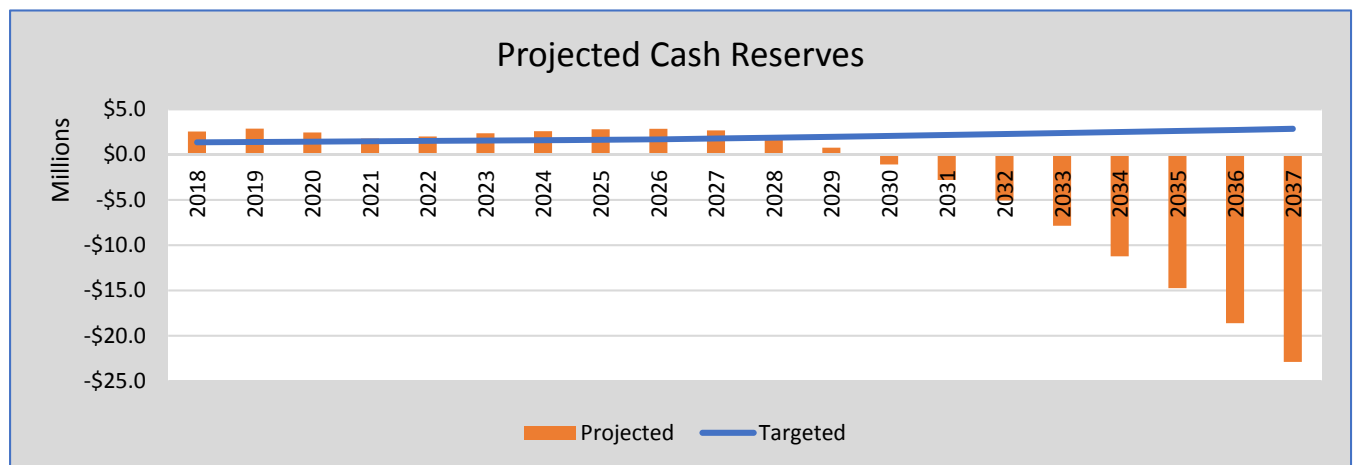
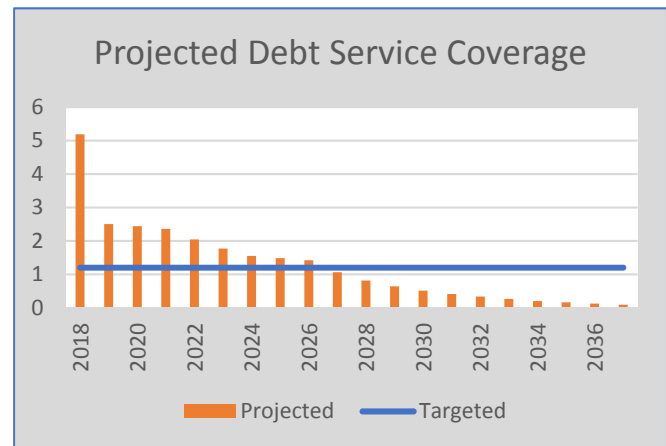
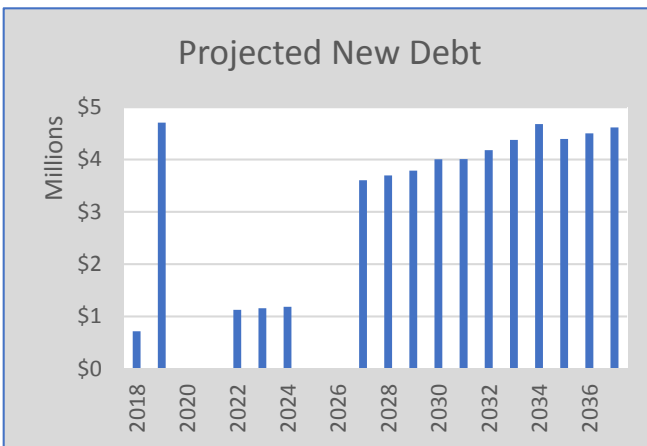
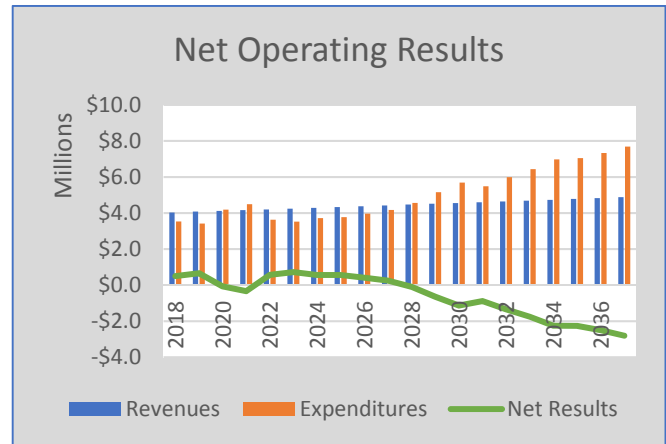
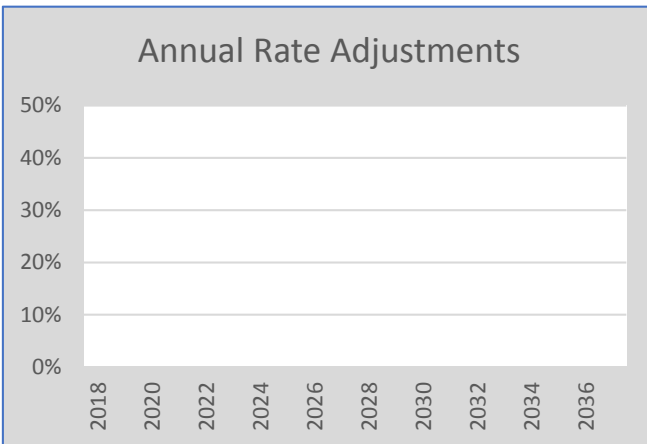
Scenario 1 Master Plan Amortized over 50 Years

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## Water System

### Scenario 1 – Master Plan Amortized over 50 Years

Rate Increase	None
Fund Approach	Current Policy - >\$500k debt funded in project year

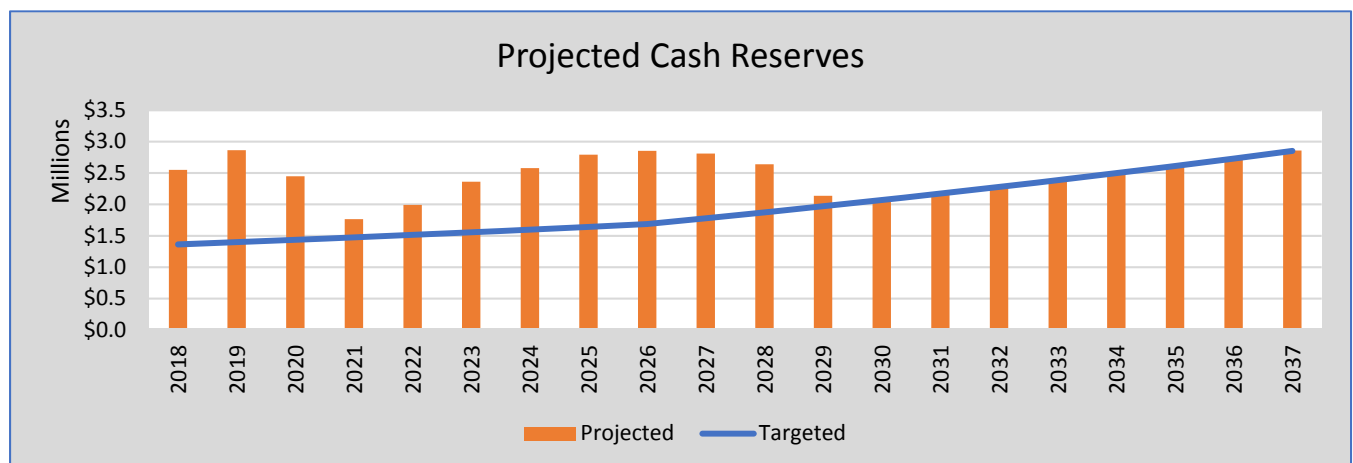
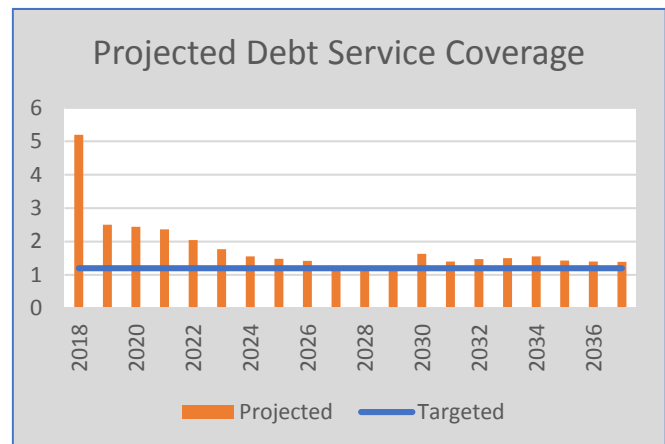
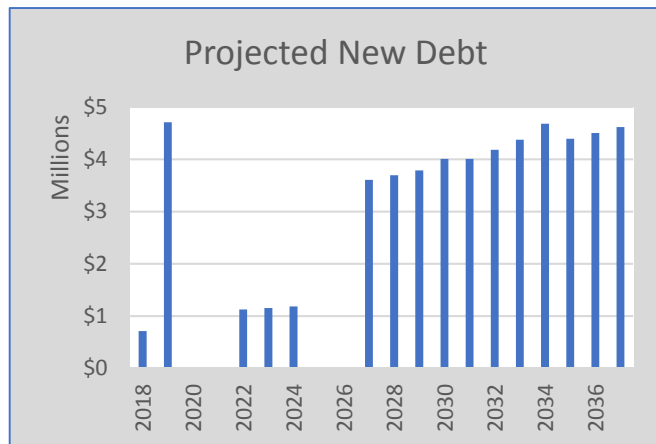
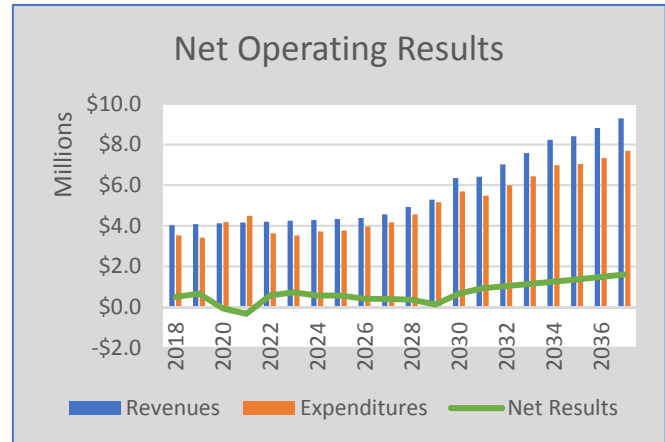
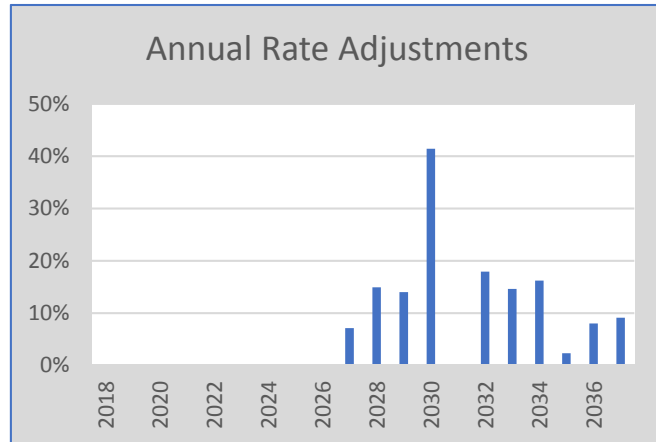


Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	-	1.20	5.19	1,362	2,548	-	1,554
2019	-	1.20	2.50	1,398	2,862	-	5,004
2020	-	1.20	2.44	1,436	2,448	-	1,085
2021	-	1.20	2.36	1,475	1,765	-	1,315
2022	-	1.20	2.04	1,515	1,990	-	1,406
2023	-	1.20	1.77	1,556	2,360	-	1,181
2024	-	1.20	1.55	1,599	2,577	-	1,251
2025	-	1.20	1.48	1,643	2,791	-	51
2026	-	1.20	1.42	1,688	2,852	-	155
2027	-	1.20	1.06	1,780	2,667	3,621	3,592
2028	-	1.20	0.81	1,874	2,043	3,712	3,760
2029	-	1.20	0.64	1,971	768	3,805	4,131
2030	-	1.20	0.51	2,070	(1,093)	3,900	4,540
2031	-	1.20	0.41	2,173	(2,805)	3,997	3,996
2032	-	1.20	0.33	2,278	(5,077)	4,097	4,313
2033	-	1.20	0.26	2,386	(7,860)	4,200	4,585
2034	-	1.20	0.20	2,498	(11,248)	4,305	5,039
2035	-	1.20	0.16	2,613	(14,762)	4,412	4,446
2036	-	1.20	0.12	2,731	(18,627)	4,523	4,456
2037	-	1.20	0.09	2,852	(22,911)	4,636	4,523
<u>Note:</u>							
[1] Amounts shown in \$1,000's.							

## Water System

### Scenario 1 – Master Plan Amortized over 50 Years

Rate Increase	Just in Time
Fund Approach	Current Policy - >\$500k debt funded in project year

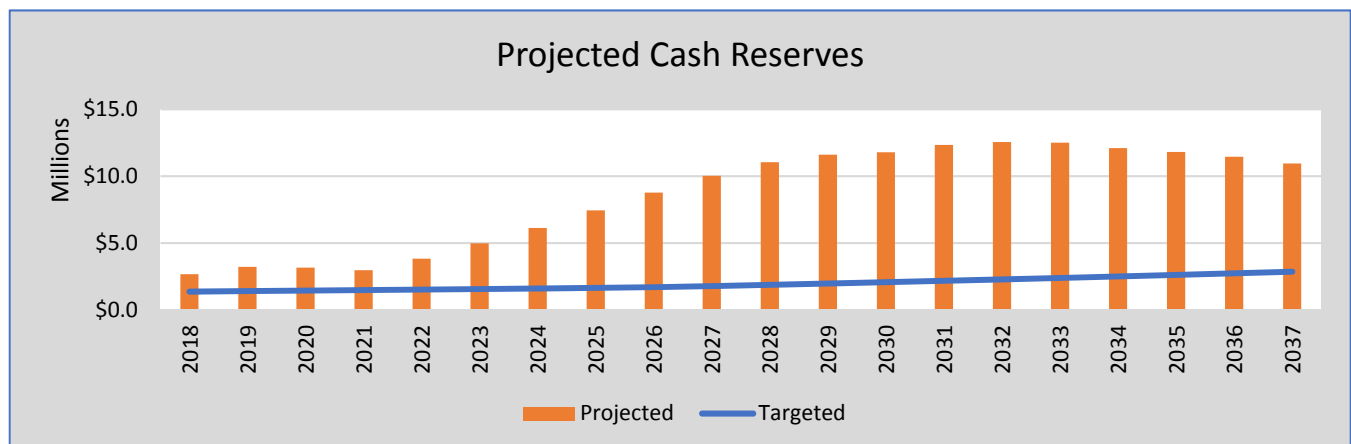
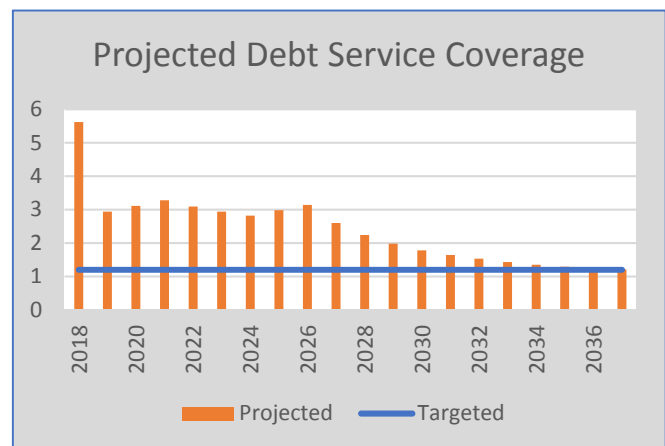
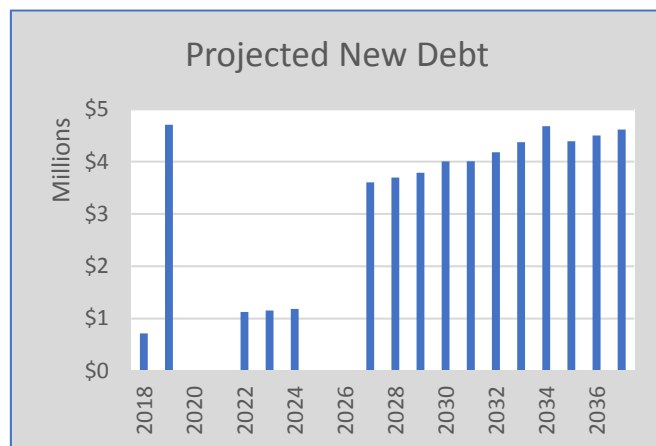
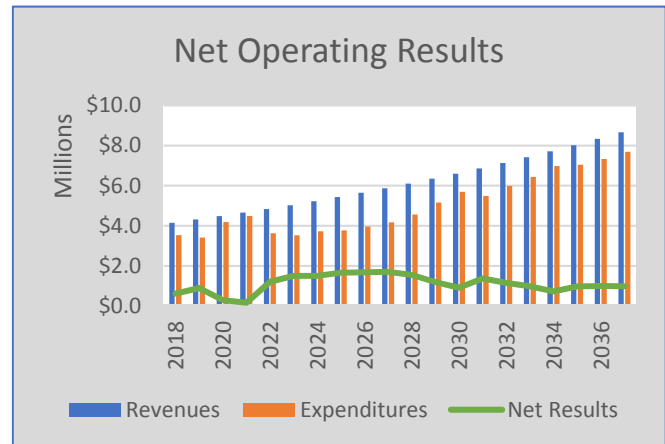
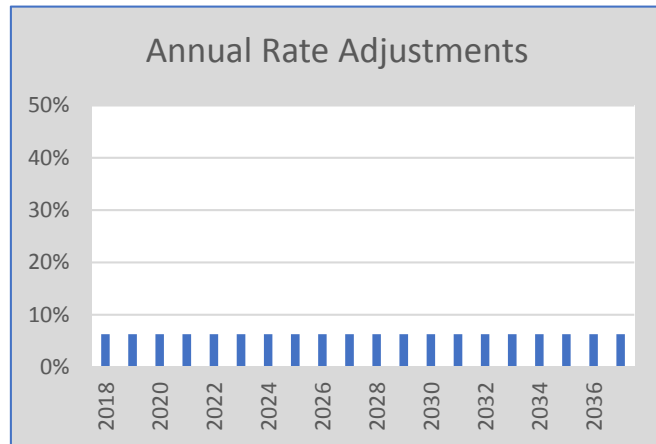


Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	0.00%	1.20	5.19	1,362	2,548	-	1,554
2019	0.00%	1.20	2.50	1,398	2,862	-	5,004
2020	0.00%	1.20	2.44	1,436	2,448	-	1,085
2021	0.00%	1.20	2.36	1,475	1,765	-	1,315
2022	0.00%	1.20	2.04	1,515	1,990	-	1,406
2023	0.00%	1.20	1.77	1,556	2,360	-	1,181
2024	0.00%	1.20	1.55	1,599	2,577	-	1,251
2025	0.00%	1.20	1.48	1,643	2,791	-	51
2026	0.00%	1.20	1.42	1,688	2,852	-	155
2027	7.10%	1.20	1.21	1,780	2,808	3,621	3,592
2028	14.90%	1.20	1.21	1,874	2,637	3,712	3,760
2029	14.00%	1.20	1.21	1,971	2,137	3,805	4,131
2030	41.40%	1.20	1.63	2,070	2,070	3,900	4,540
2031	0.00%	1.20	1.40	2,173	2,176	3,997	3,996
2032	17.90%	1.20	1.47	2,278	2,281	4,097	4,313
2033	14.60%	1.20	1.50	2,386	2,388	4,200	4,585
2034	16.20%	1.20	1.55	2,498	2,501	4,305	5,039
2035	2.30%	1.20	1.43	2,613	2,615	4,412	4,446
2036	8.00%	1.20	1.40	2,731	2,734	4,523	4,456
2037	9.10%	1.20	1.39	2,852	2,857	4,636	4,523
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					

## Water System

### Scenario 1 – Master Plan Amortized over 50 Years

Rate Increase	Phased In (level)
Fund Approach	Current Policy - >\$500k debt funded in project year



Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	6.25%	1.20	5.62	1,362	2,662	-	1,554
2019	6.25%	1.20	2.94	1,398	3,209	-	5,004
2020	6.25%	1.20	3.11	1,436	3,155	-	1,085
2021	6.25%	1.20	3.28	1,475	2,965	-	1,315
2022	6.25%	1.20	3.09	1,515	3,822	-	1,406
2023	6.25%	1.20	2.94	1,556	4,972	-	1,181
2024	6.25%	1.20	2.82	1,599	6,124	-	1,251
2025	6.25%	1.20	2.98	1,643	7,435	-	51
2026	6.25%	1.20	3.14	1,688	8,765	-	155
2027	6.25%	1.20	2.60	1,780	10,028	3,621	3,592
2028	6.25%	1.20	2.24	1,874	11,041	3,712	3,760
2029	6.25%	1.20	1.98	1,971	11,601	3,805	4,131
2030	6.25%	1.20	1.78	2,070	11,783	3,900	4,540
2031	6.25%	1.20	1.64	2,173	12,333	3,997	3,996
2032	6.25%	1.20	1.53	2,278	12,552	4,097	4,313
2033	6.25%	1.20	1.43	2,386	12,500	4,200	4,585
2034	6.25%	1.20	1.35	2,498	12,090	4,305	5,039
2035	6.25%	1.20	1.29	2,613	11,810	4,412	4,446
2036	6.25%	1.20	1.25	2,731	11,448	4,523	4,456
2037	6.25%	1.20	1.21	2,852	10,947	4,636	4,523
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					



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# Water System

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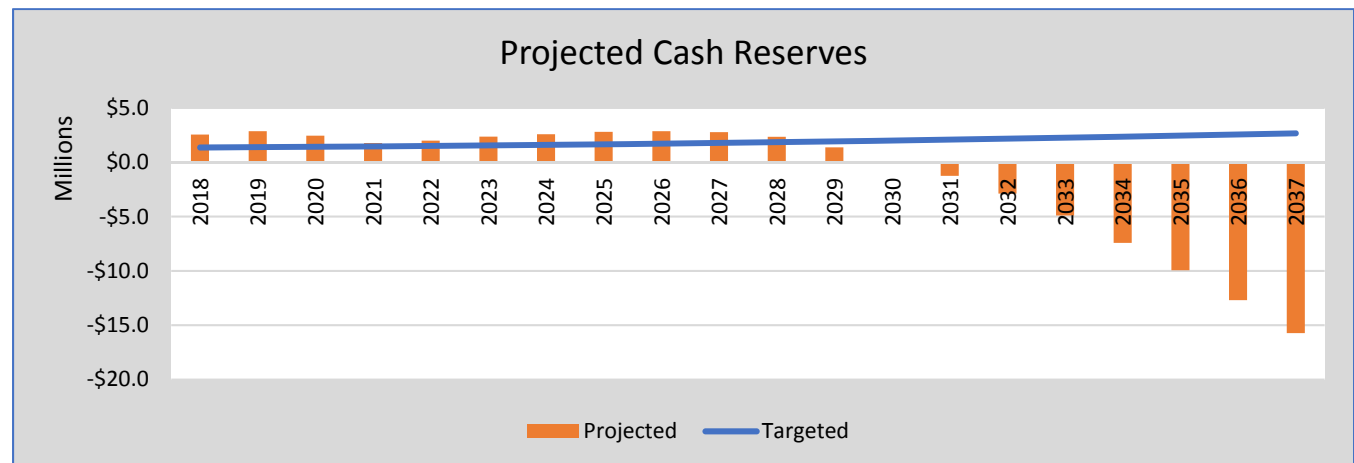
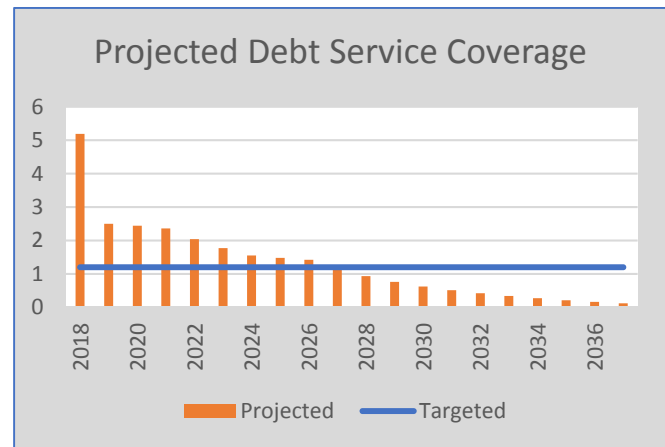
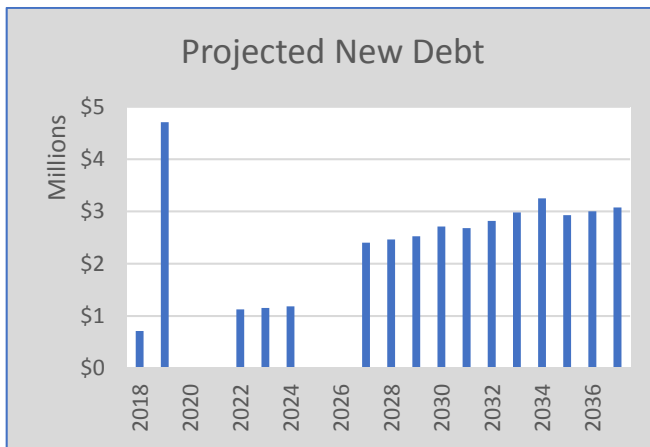
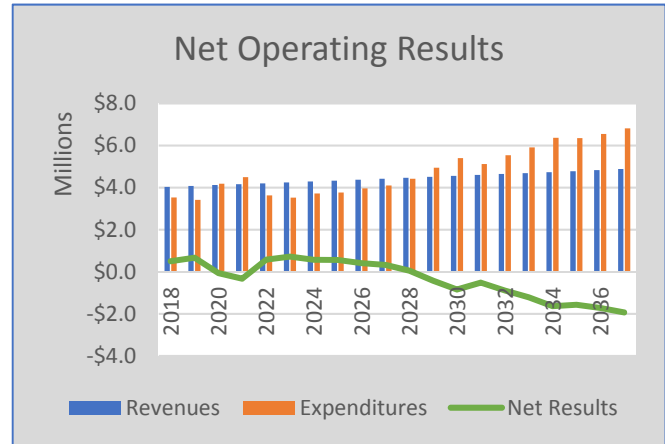
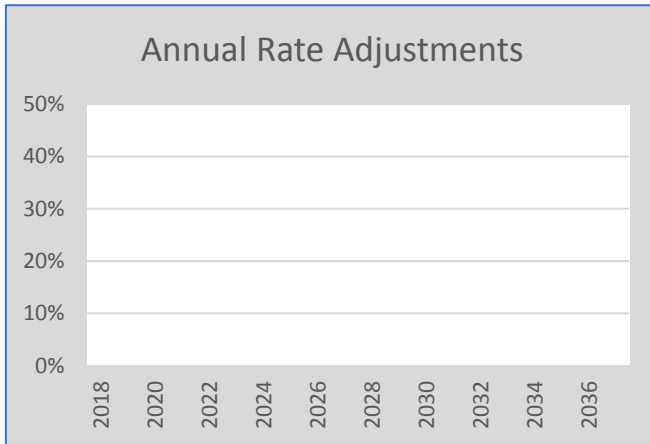
Scenario 2 Master Plan Amortized over 75 Years

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## Water System

### Scenario 2 – Master Plan Amortized over 75 Years

Rate Increase	None
Fund Approach	Current Policy - >\$500k debt funded in project year

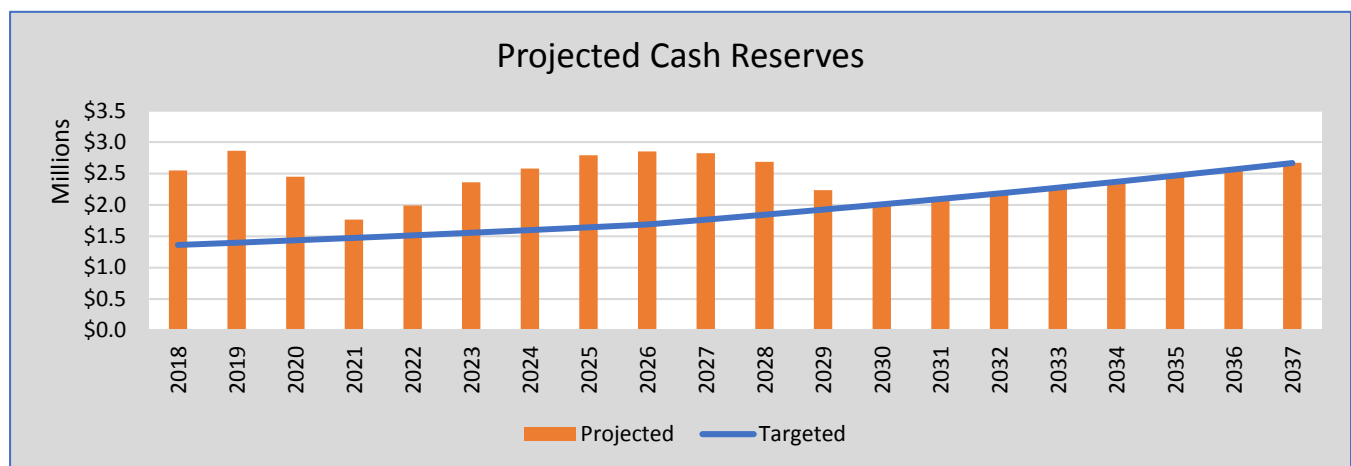
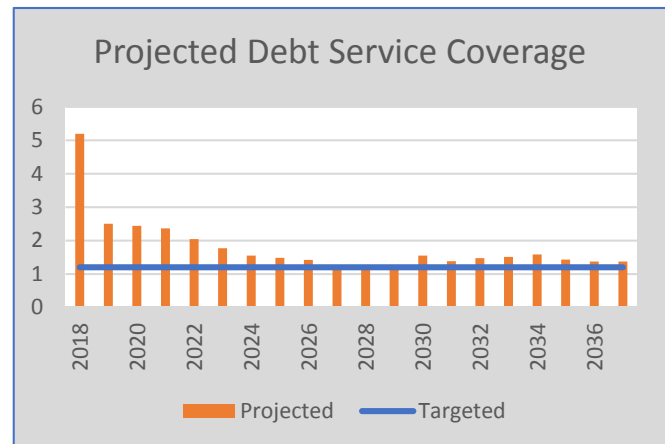
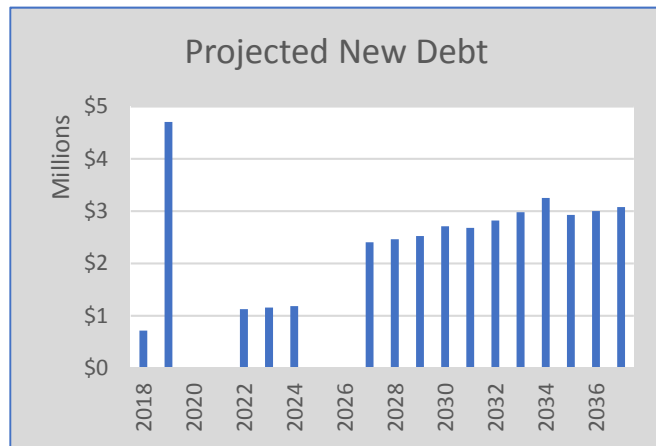
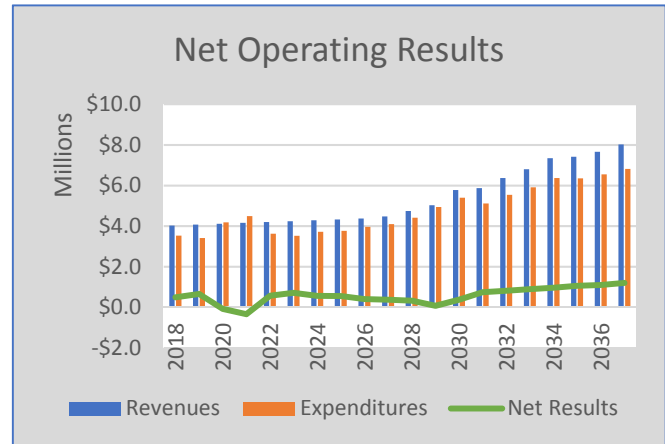
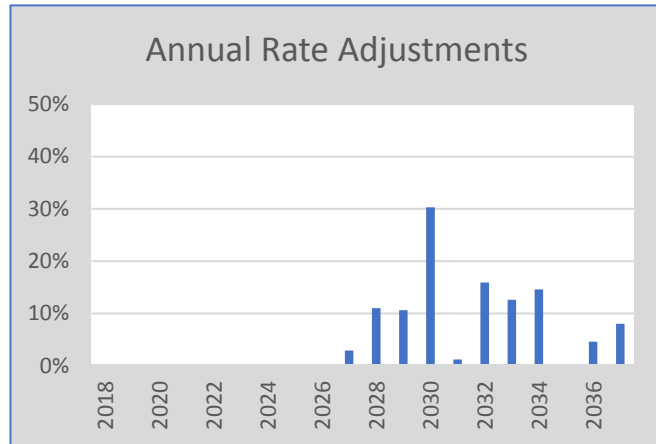


Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	-	1.20	5.19	1,362	2,548	-	1,554
2019	-	1.20	2.50	1,398	2,862	-	5,004
2020	-	1.20	2.44	1,436	2,448	-	1,085
2021	-	1.20	2.36	1,475	1,765	-	1,315
2022	-	1.20	2.04	1,515	1,990	-	1,406
2023	-	1.20	1.77	1,556	2,360	-	1,181
2024	-	1.20	1.55	1,599	2,577	-	1,251
2025	-	1.20	1.48	1,643	2,791	-	51
2026	-	1.20	1.42	1,688	2,852	-	155
2027	-	1.20	1.14	1,765	2,766	2,414	2,415
2028	-	1.20	0.93	1,844	2,344	2,475	2,553
2029	-	1.20	0.76	1,925	1,376	2,536	2,894
2030	-	1.20	0.62	2,008	(70)	2,600	3,272
2031	-	1.20	0.51	2,094	(1,255)	2,665	2,696
2032	-	1.20	0.42	2,183	(2,886)	2,732	2,981
2033	-	1.20	0.34	2,274	(4,910)	2,800	3,219
2034	-	1.20	0.27	2,368	(7,425)	2,870	3,639
2035	-	1.20	0.21	2,465	(9,945)	2,942	3,011
2036	-	1.20	0.16	2,564	(12,693)	3,015	2,985
2037	-	1.20	0.12	2,667	(15,733)	3,090	3,015
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					

## Water System

### Scenario 2 – Master Plan Amortized over 75 Years

Rate Increase	Just in Time
Fund Approach	Current Policy - >\$500k debt funded in project year

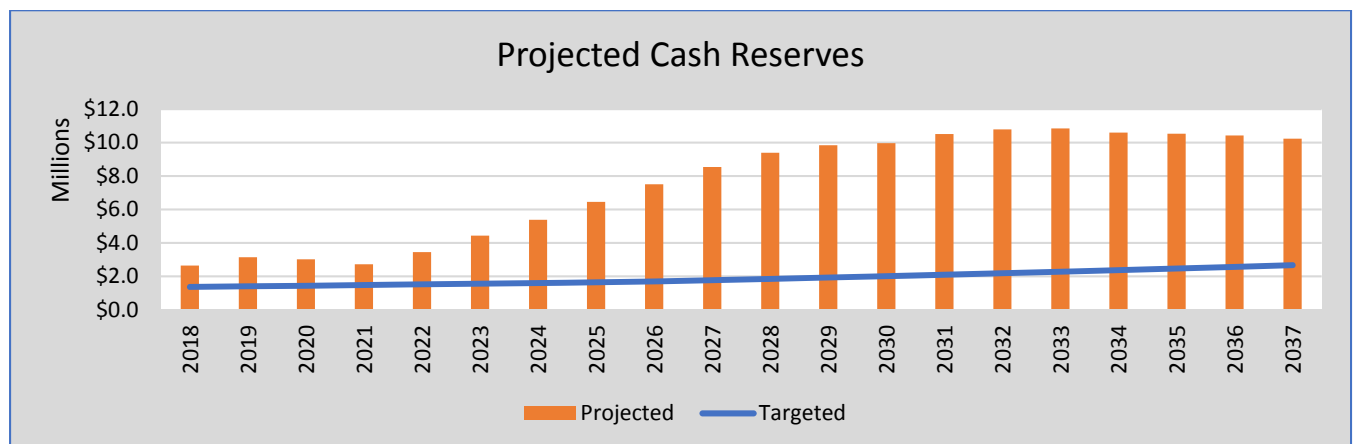
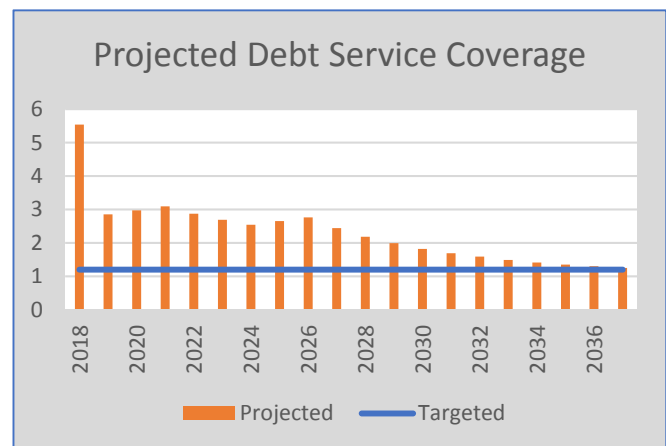
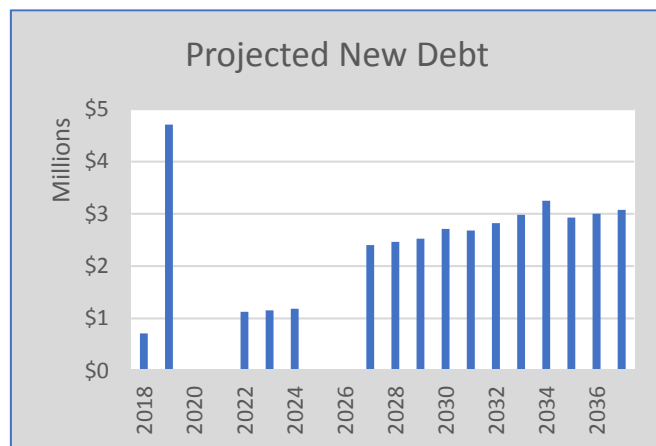
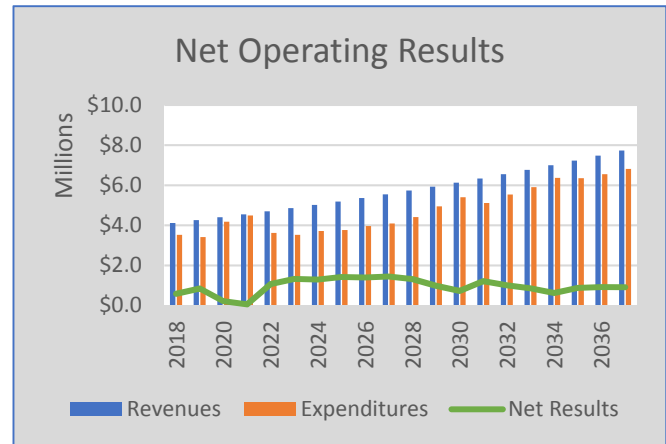
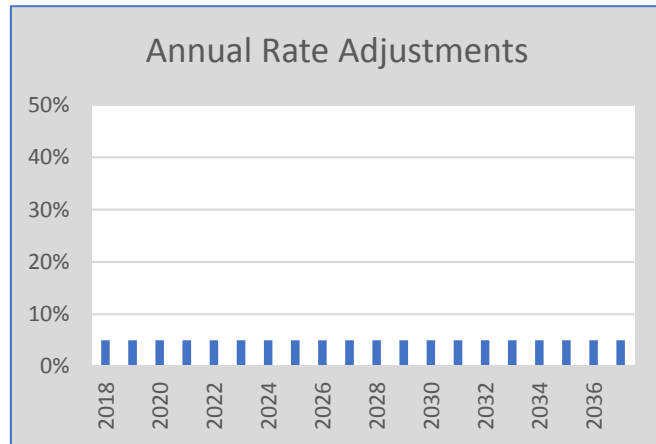


Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	0.00%	1.20	5.19	1,362	2,548	-	1,554
2019	0.00%	1.20	2.50	1,398	2,862	-	5,004
2020	0.00%	1.20	2.44	1,436	2,448	-	1,085
2021	0.00%	1.20	2.36	1,475	1,765	-	1,315
2022	0.00%	1.20	2.04	1,515	1,990	-	1,406
2023	0.00%	1.20	1.77	1,556	2,360	-	1,181
2024	0.00%	1.20	1.55	1,599	2,577	-	1,251
2025	0.00%	1.20	1.48	1,643	2,791	-	51
2026	0.00%	1.20	1.42	1,688	2,852	-	155
2027	2.90%	1.20	1.21	1,765	2,824	2,414	2,415
2028	11.00%	1.20	1.21	1,844	2,684	2,475	2,553
2029	10.60%	1.20	1.21	1,925	2,233	2,536	2,894
2030	30.30%	1.20	1.55	2,008	2,010	2,600	3,272
2031	1.20%	1.20	1.38	2,094	2,095	2,665	2,696
2032	15.90%	1.20	1.47	2,183	2,184	2,732	2,981
2033	12.60%	1.20	1.51	2,274	2,276	2,800	3,219
2034	14.60%	1.20	1.58	2,368	2,370	2,870	3,639
2035	0.00%	1.20	1.43	2,465	2,488	2,942	3,011
2036	4.60%	1.20	1.37	2,564	2,566	3,015	2,985
2037	8.00%	1.20	1.37	2,667	2,670	3,090	3,015
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					

## Water System

### Scenario 2 – Master Plan Amortized over 75 Years

Rate Increase	Phased In (level)
Fund Approach	Current Policy - >\$500k debt funded in project year



Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	5.00%	1.20	5.54	1,362	2,639	-	1,554
2019	5.00%	1.20	2.85	1,398	3,139	-	5,004
2020	5.00%	1.20	2.97	1,436	3,011	-	1,085
2021	5.00%	1.20	3.09	1,475	2,719	-	1,315
2022	5.00%	1.20	2.87	1,515	3,444	-	1,406
2023	5.00%	1.20	2.69	1,556	4,427	-	1,181
2024	5.00%	1.20	2.54	1,599	5,379	-	1,251
2025	5.00%	1.20	2.65	1,643	6,451	-	51
2026	5.00%	1.20	2.76	1,688	7,502	-	155
2027	5.00%	1.20	2.44	1,765	8,542	2,414	2,415
2028	5.00%	1.20	2.18	1,844	9,388	2,475	2,553
2029	5.00%	1.20	1.99	1,925	9,837	2,536	2,894
2030	5.00%	1.20	1.82	2,008	9,965	2,600	3,272
2031	5.00%	1.20	1.69	2,094	10,514	2,665	2,696
2032	5.00%	1.20	1.59	2,183	10,787	2,732	2,981
2033	5.00%	1.20	1.49	2,274	10,843	2,800	3,219
2034	5.00%	1.20	1.41	2,368	10,593	2,870	3,639
2035	5.00%	1.20	1.35	2,465	10,525	2,942	3,011
2036	5.00%	1.20	1.30	2,564	10,423	3,015	2,985
2037	5.00%	1.20	1.25	2,667	10,232	3,090	3,015
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					

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# Water System

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Scenario 3 Master Plan Amortized over 100 Years

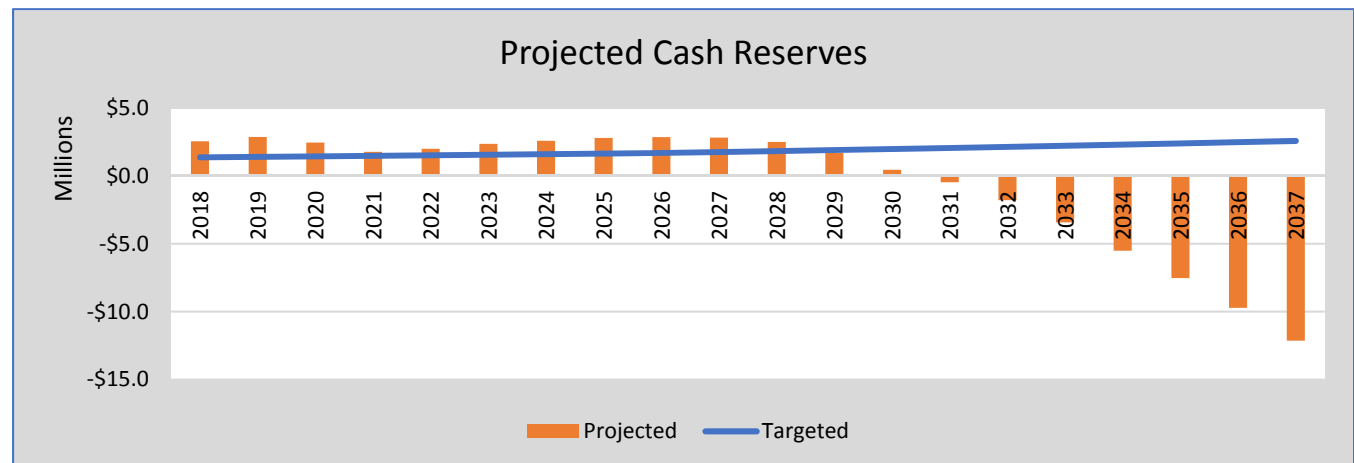
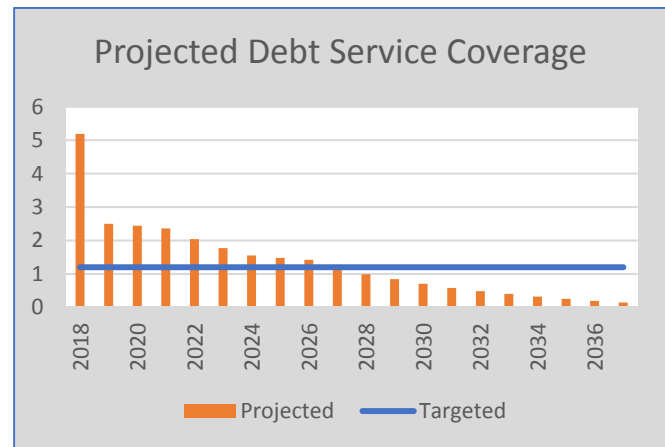
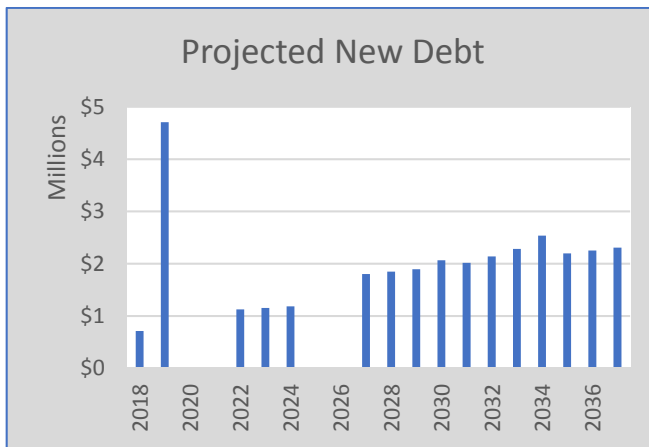
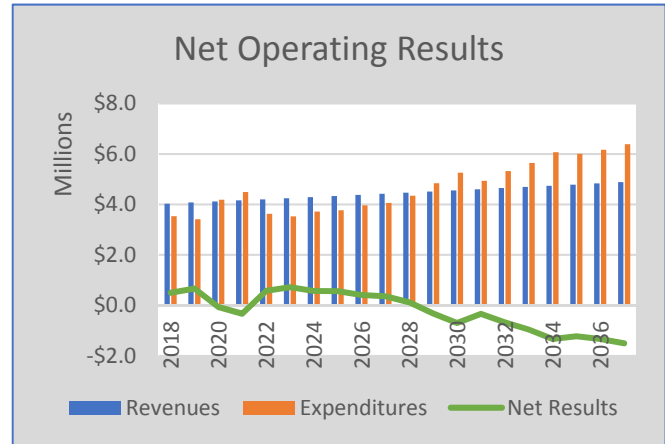
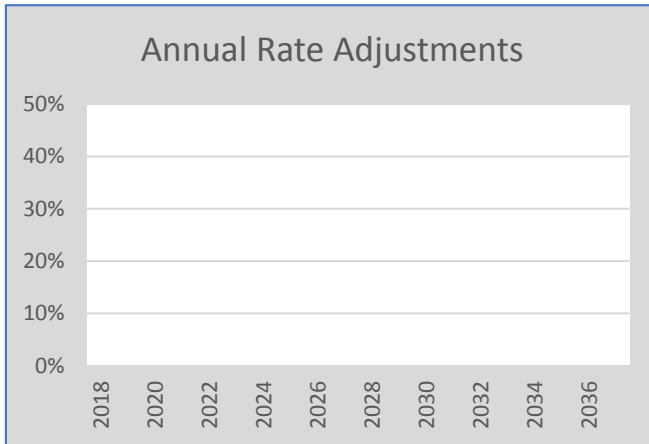
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## Water System

### Scenario 3 – Master Plan Amortized over 100 Years

Rate Increase	None
Fund Approach	Current Policy - >\$500k debt funded in project year

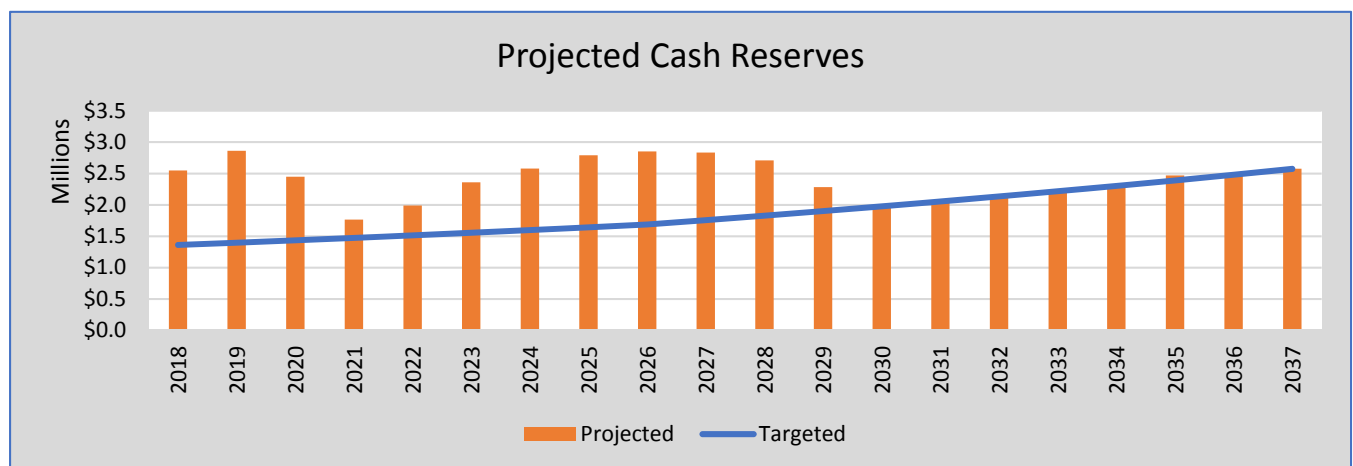
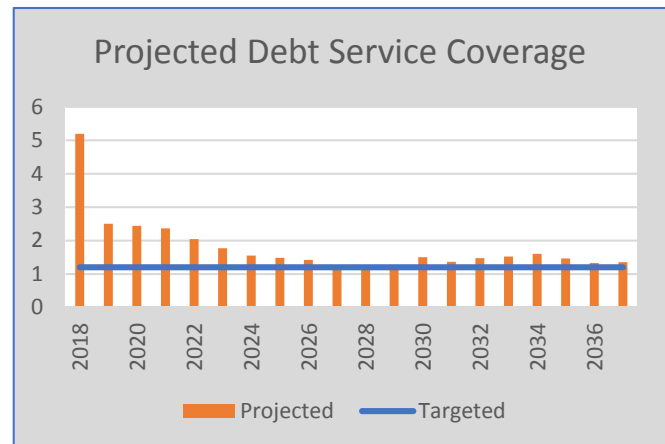
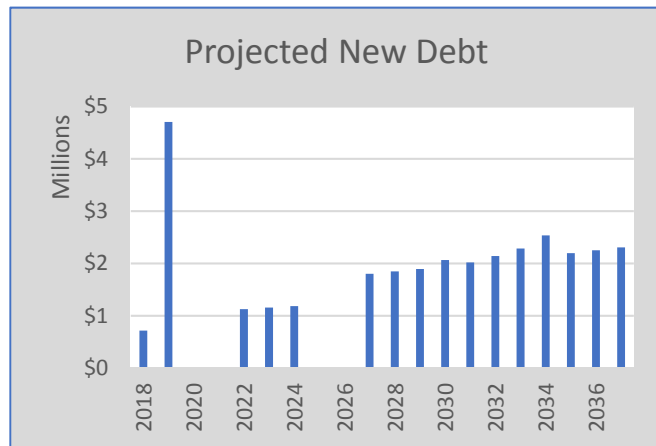
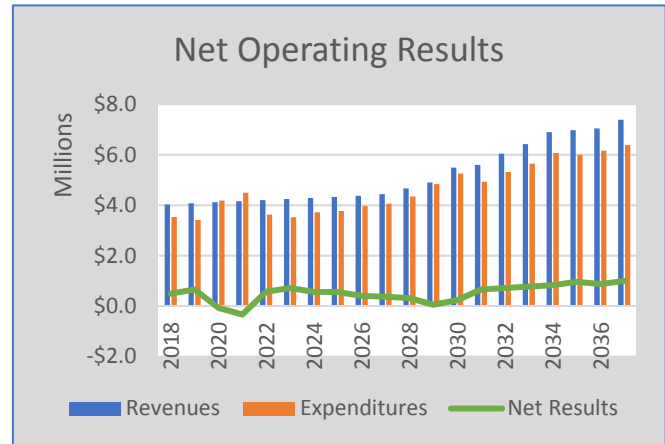
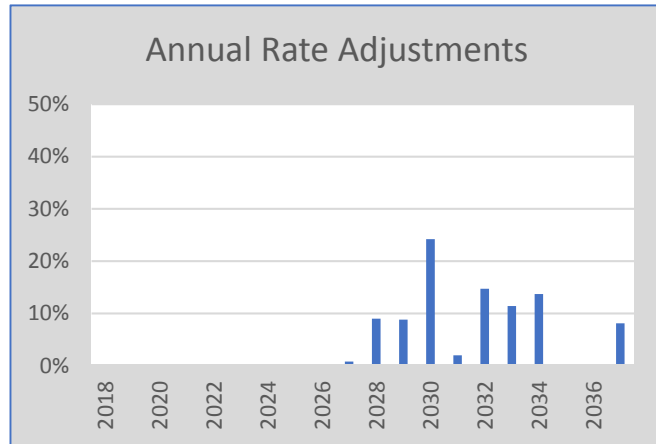


Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	-	1.20	5.19	1,362	2,548	-	1,554
2019	-	1.20	2.50	1,398	2,862	-	5,004
2020	-	1.20	2.44	1,436	2,448	-	1,085
2021	-	1.20	2.36	1,475	1,765	-	1,315
2022	-	1.20	2.04	1,515	1,990	-	1,406
2023	-	1.20	1.77	1,556	2,360	-	1,181
2024	-	1.20	1.55	1,599	2,577	-	1,251
2025	-	1.20	1.48	1,643	2,791	-	51
2026	-	1.20	1.42	1,688	2,852	-	155
2027	-	1.20	1.19	1,757	2,816	1,811	1,826
2028	-	1.20	0.99	1,828	2,495	1,856	1,950
2029	-	1.20	0.84	1,902	1,680	1,902	2,275
2030	-	1.20	0.70	1,977	443	1,950	2,638
2031	-	1.20	0.58	2,055	(479)	1,999	2,046
2032	-	1.20	0.48	2,135	(1,790)	2,049	2,314
2033	-	1.20	0.40	2,218	(3,437)	2,100	2,536
2034	-	1.20	0.32	2,303	(5,513)	2,152	2,939
2035	-	1.20	0.25	2,391	(7,538)	2,206	2,294
2036	-	1.20	0.19	2,481	(9,728)	2,261	2,250
2037	-	1.20	0.14	2,574	(12,145)	2,318	2,261
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					

## Water System

### Scenario 3 – Master Plan Amortized over 100 Years

Rate Increase	Just in Time
Fund Approach	Current Policy - >\$500k debt funded in project year

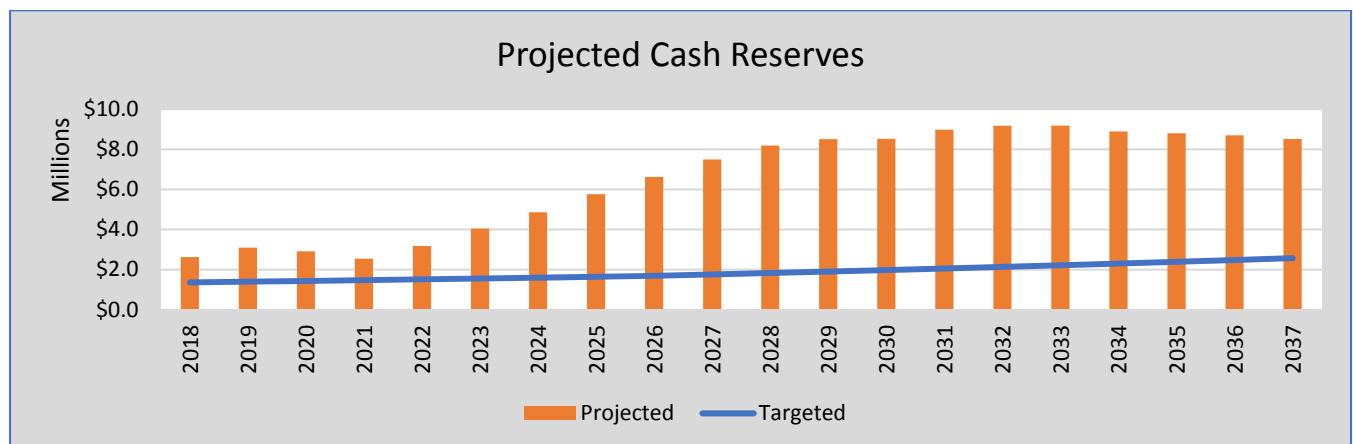
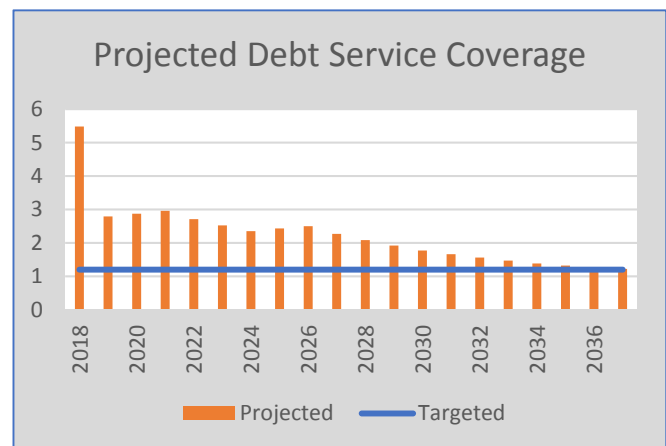
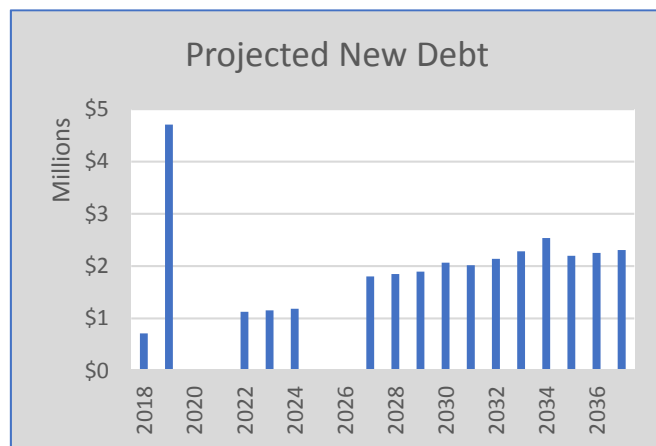
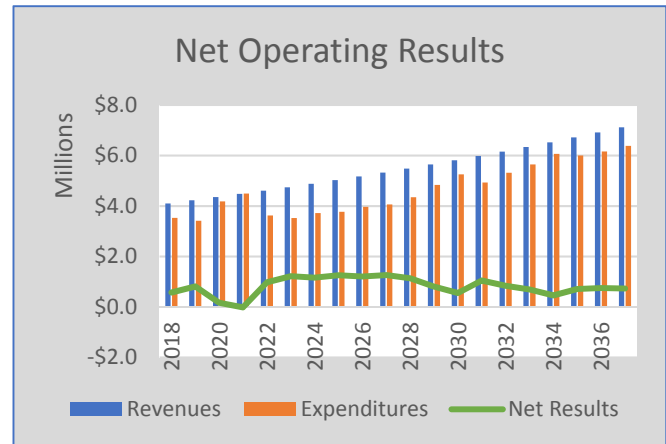
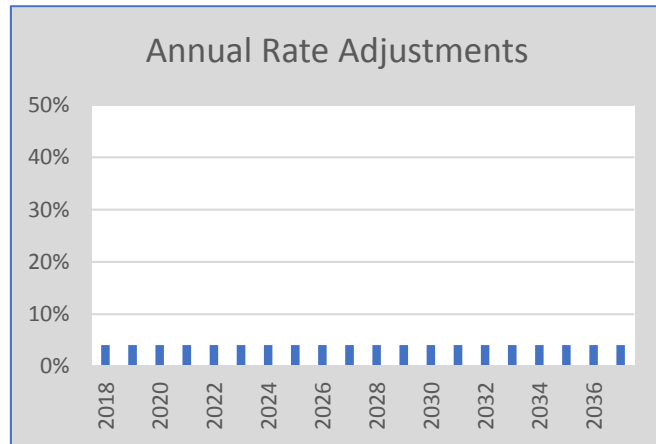


Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	0.00%	1.20	5.19	1,362	2,548	-	1,554
2019	0.00%	1.20	2.50	1,398	2,862	-	5,004
2020	0.00%	1.20	2.44	1,436	2,448	-	1,085
2021	0.00%	1.20	2.36	1,475	1,765	-	1,315
2022	0.00%	1.20	2.04	1,515	1,990	-	1,406
2023	0.00%	1.20	1.77	1,556	2,360	-	1,181
2024	0.00%	1.20	1.55	1,599	2,577	-	1,251
2025	0.00%	1.20	1.48	1,643	2,791	-	51
2026	0.00%	1.20	1.42	1,688	2,852	-	155
2027	0.80%	1.20	1.21	1,757	2,832	1,811	1,826
2028	9.00%	1.20	1.21	1,828	2,708	1,856	1,950
2029	8.80%	1.20	1.21	1,902	2,281	1,902	2,275
2030	24.20%	1.20	1.50	1,977	1,979	1,950	2,638
2031	2.00%	1.20	1.36	2,055	2,056	1,999	2,046
2032	14.70%	1.20	1.47	2,135	2,136	2,049	2,314
2033	11.40%	1.20	1.52	2,218	2,219	2,100	2,536
2034	13.70%	1.20	1.60	2,303	2,305	2,152	2,939
2035	0.00%	1.20	1.46	2,391	2,469	2,206	2,294
2036	0.00%	1.20	1.33	2,481	2,491	2,261	2,250
2037	8.10%	1.20	1.35	2,574	2,576	2,318	2,261
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					

## Water System

### Scenario 3 – Master Plan Amortized over 100 Years

Rate Increase	Phased In (level)
Fund Approach	Current Policy - >\$500k debt funded in project year



Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	4.10%	1.20	5.48	1,362	2,623	-	1,554
2019	4.10%	1.20	2.79	1,398	3,089	-	5,004
2020	4.10%	1.20	2.87	1,436	2,908	-	1,085
2021	4.10%	1.20	2.96	1,475	2,544	-	1,315
2022	4.10%	1.20	2.71	1,515	3,175	-	1,406
2023	4.10%	1.20	2.52	1,556	4,042	-	1,181
2024	4.10%	1.20	2.35	1,599	4,853	-	1,251
2025	4.10%	1.20	2.43	1,643	5,760	-	51
2026	4.10%	1.20	2.50	1,688	6,618	-	155
2027	4.10%	1.20	2.27	1,757	7,487	1,811	1,826
2028	4.10%	1.20	2.08	1,828	8,182	1,856	1,950
2029	4.10%	1.20	1.92	1,902	8,501	1,902	2,275
2030	4.10%	1.20	1.77	1,977	8,518	1,950	2,638
2031	4.10%	1.20	1.66	2,055	8,976	1,999	2,046
2032	4.10%	1.20	1.56	2,135	9,176	2,049	2,314
2033	4.10%	1.20	1.47	2,218	9,178	2,100	2,536
2034	4.10%	1.20	1.38	2,303	8,890	2,152	2,939
2035	4.10%	1.20	1.32	2,391	8,801	2,206	2,294
2036	4.10%	1.20	1.27	2,481	8,694	2,261	2,250
2037	4.10%	1.20	1.22	2,574	8,514	2,318	2,261
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					

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# Sewer System

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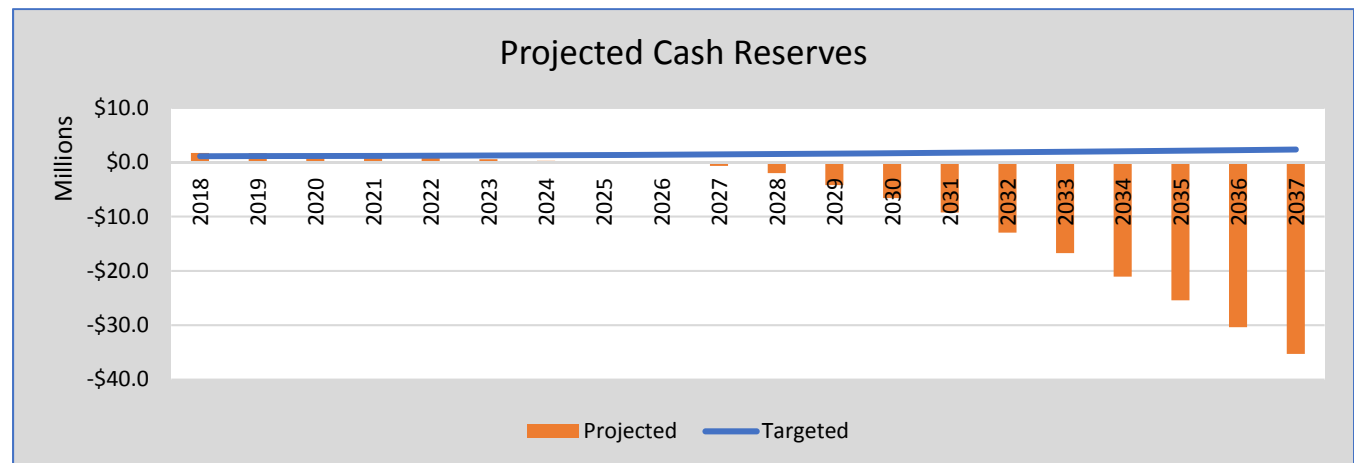
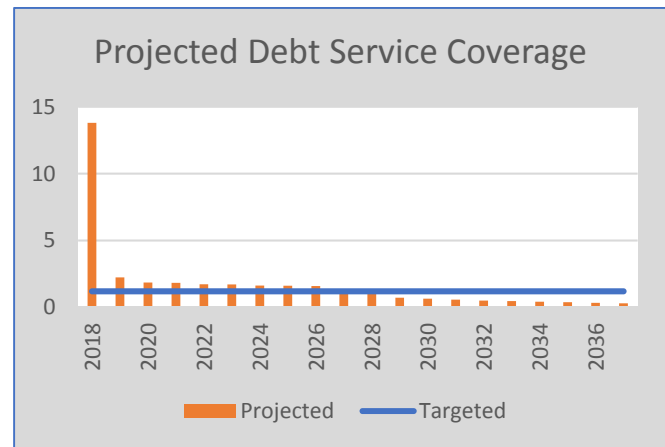
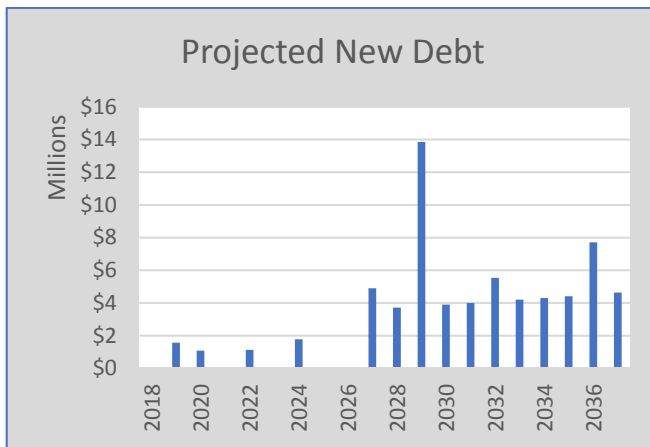
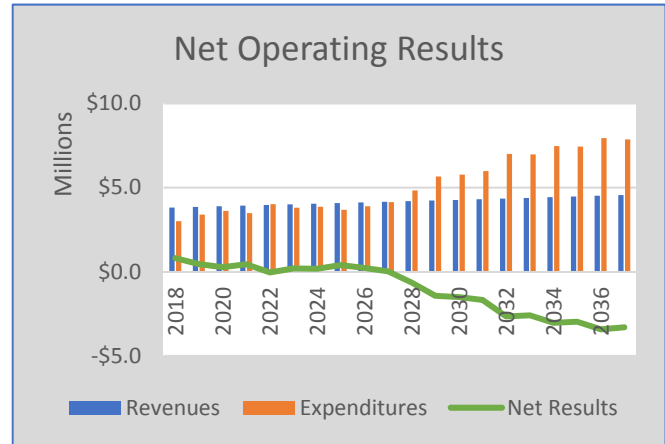
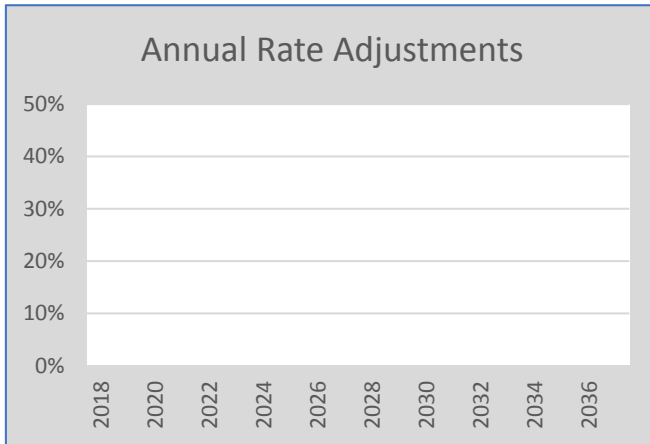
Scenario 1 Master Plan Amortized over 50 Years

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## Sewer System

### Scenario 1 – Master Plan Amortized over 50 Years

Rate Increase	None
Fund Approach	Current Policy - >\$500k debt funded in project year



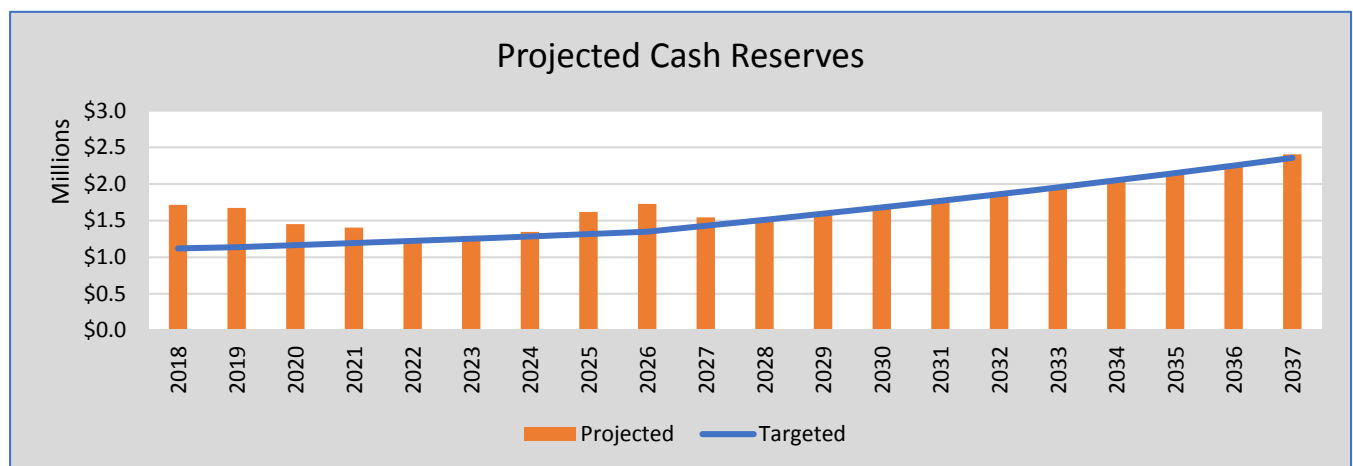
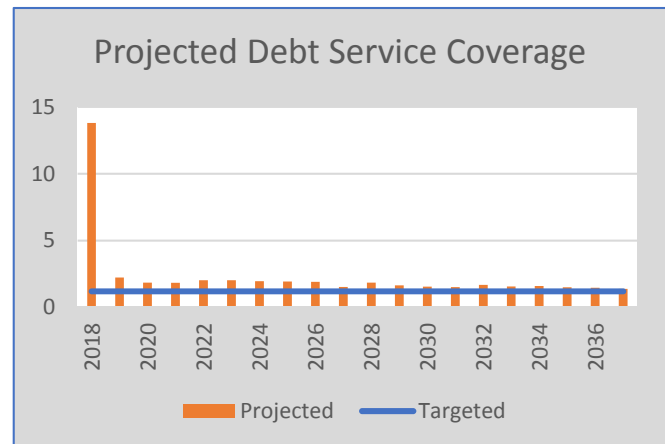
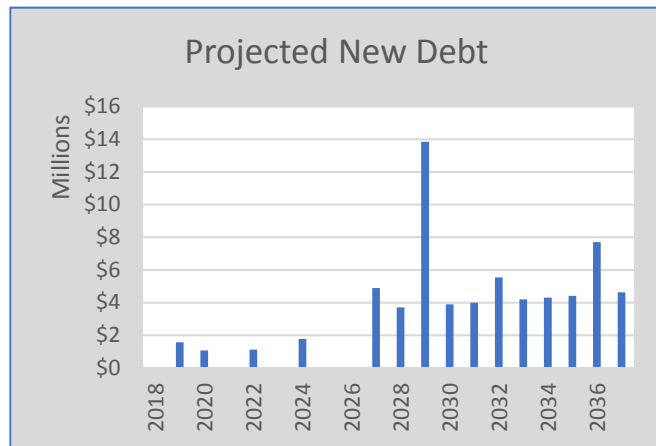
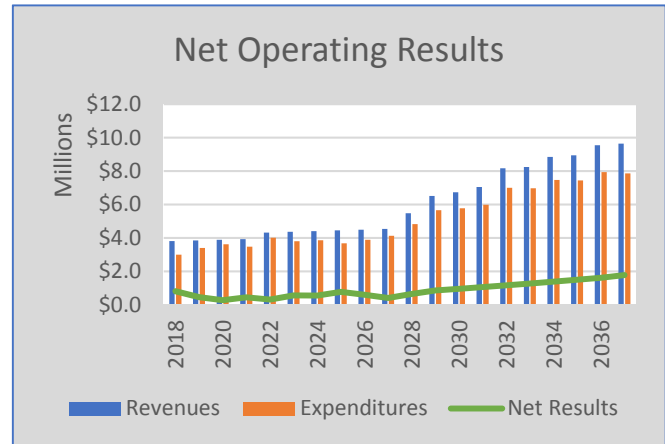
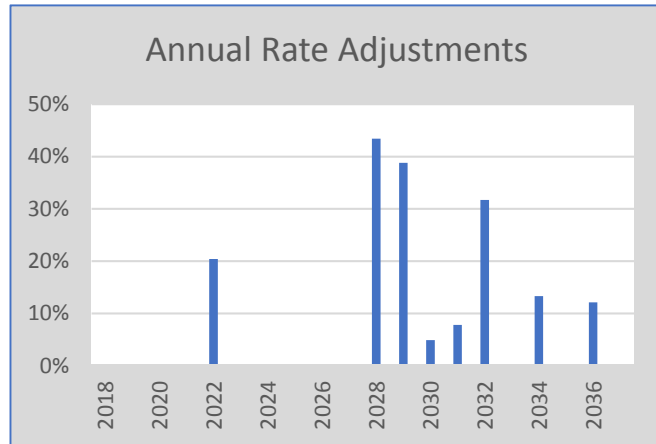


Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	-	1.20	13.80	1,121	1,713	-	1,074
2019	-	1.20	2.23	1,138	1,672	-	2,216
2020	-	1.20	1.85	1,165	1,451	-	1,711
2021	-	1.20	1.83	1,193	1,403	-	470
2022	-	1.20	1.72	1,223	863	-	1,983
2023	-	1.20	1.71	1,253	564	-	623
2024	-	1.20	1.63	1,284	249	-	2,316
2025	-	1.20	1.61	1,316	149	-	333
2026	-	1.20	1.59	1,350	(122)	-	476
2027	-	1.20	1.26	1,429	(687)	3,635	5,161
2028	-	1.20	1.07	1,510	(2,006)	3,726	4,414
2029	-	1.20	0.71	1,594	(4,208)	3,819	14,296
2030	-	1.20	0.64	1,680	(6,588)	3,915	4,363
2031	-	1.20	0.57	1,769	(9,242)	4,013	4,360
2032	-	1.20	0.50	1,860	(12,974)	4,113	6,485
2033	-	1.20	0.46	1,954	(16,743)	4,216	4,818
2034	-	1.20	0.41	2,050	(21,069)	4,321	5,075
2035	-	1.20	0.38	2,150	(25,437)	4,429	4,828
2036	-	1.20	0.33	2,252	(30,372)	4,540	8,014
2037	-	1.20	0.30	2,356	(35,307)	4,654	4,567
<u>Note:</u>							
[1] Amounts shown in \$1,000's.							

## Sewer System

### Scenario 1 – Master Plan Amortized over 50 Years

Rate Increase	Just in Time
Fund Approach	Current Policy - >\$500k debt funded in project year

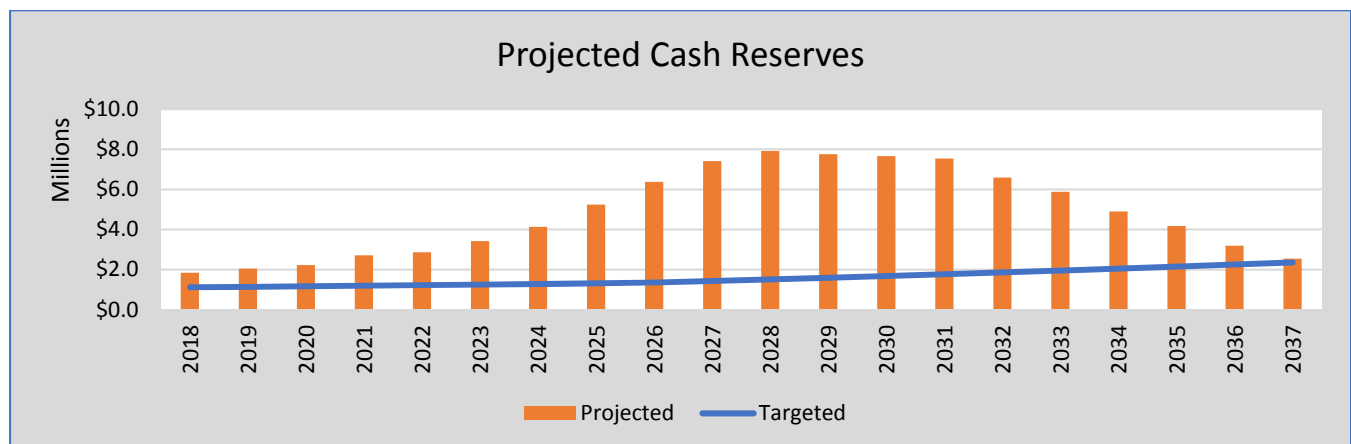
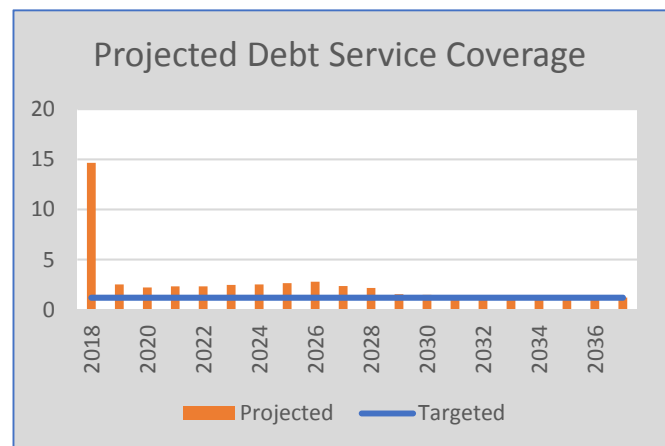
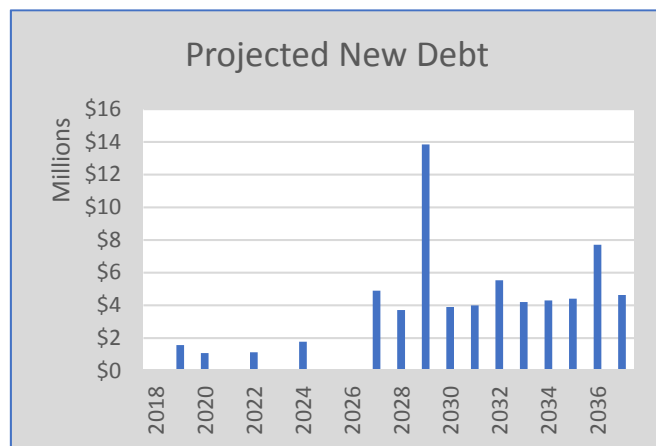
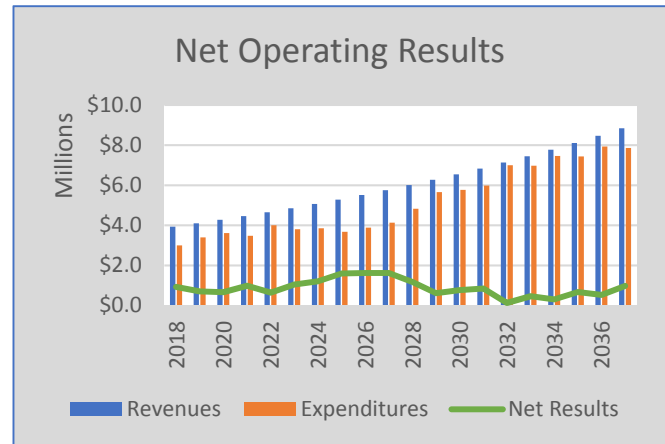
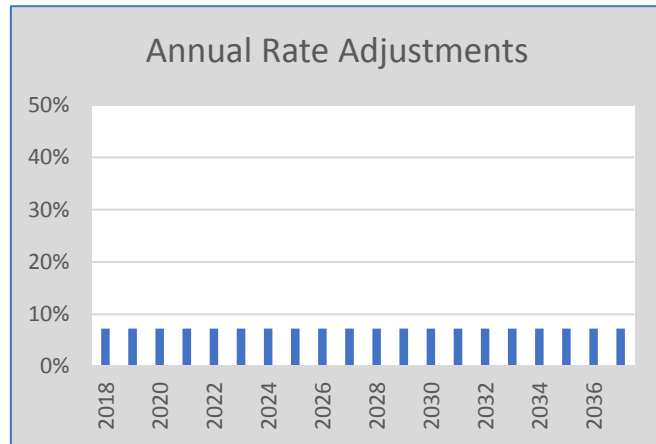


Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	0.00%	1.20	13.80	1,121	1,713	-	1,074
2019	0.00%	1.20	2.23	1,138	1,672	-	2,216
2020	0.00%	1.20	1.85	1,165	1,451	-	1,711
2021	0.00%	1.20	1.83	1,193	1,403	-	470
2022	20.40%	1.20	2.03	1,223	1,224	-	1,983
2023	0.00%	1.20	2.03	1,253	1,290	-	623
2024	0.00%	1.20	1.95	1,284	1,344	-	2,316
2025	0.00%	1.20	1.93	1,316	1,619	-	333
2026	0.00%	1.20	1.91	1,350	1,726	-	476
2027	0.00%	1.20	1.52	1,429	1,544	3,635	5,161
2028	43.40%	1.20	1.85	1,510	1,511	3,726	4,414
2029	38.80%	1.20	1.64	1,594	1,596	3,819	14,296
2030	4.90%	1.20	1.55	1,680	1,682	3,915	4,363
2031	7.80%	1.20	1.51	1,769	1,769	4,013	4,360
2032	31.70%	1.20	1.68	1,860	1,861	4,113	6,485
2033	0.00%	1.20	1.56	1,954	1,955	4,216	4,818
2034	13.30%	1.20	1.60	2,050	2,054	4,321	5,075
2035	0.00%	1.20	1.50	2,150	2,156	4,429	4,828
2036	12.10%	1.20	1.47	2,252	2,254	4,540	8,014
2037	0.00%	1.20	1.38	2,356	2,403	4,654	4,567
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					

## Sewer System

### Scenario 1 – Master Plan Amortized over 50 Years

Rate Increase	Phased In (level)
Fund Approach	Current Policy - >\$500k debt funded in project year



Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	7.25%	1.20	14.64	1,121	1,836	-	1,074
2019	7.25%	1.20	2.51	1,138	2,049	-	2,216
2020	7.25%	1.20	2.21	1,165	2,219	-	1,711
2021	7.25%	1.20	2.33	1,193	2,709	-	470
2022	7.25%	1.20	2.32	1,223	2,861	-	1,983
2023	7.25%	1.20	2.47	1,253	3,417	-	623
2024	7.25%	1.20	2.51	1,284	4,130	-	2,316
2025	7.25%	1.20	2.65	1,316	5,240	-	333
2026	7.25%	1.20	2.79	1,350	6,371	-	476
2027	7.25%	1.20	2.36	1,429	7,411	3,635	5,161
2028	7.25%	1.20	2.17	1,510	7,911	3,726	4,414
2029	7.25%	1.20	1.54	1,594	7,754	3,819	14,296
2030	7.25%	1.20	1.48	1,680	7,657	3,915	4,363
2031	7.25%	1.20	1.44	1,769	7,534	4,013	4,360
2032	7.25%	1.20	1.36	1,860	6,591	4,113	6,485
2033	7.25%	1.20	1.33	1,954	5,880	4,216	4,818
2034	7.25%	1.20	1.31	2,050	4,897	4,321	5,075
2035	7.25%	1.20	1.29	2,150	4,171	4,429	4,828
2036	7.25%	1.20	1.22	2,252	3,192	4,540	8,014
2037	7.25%	1.20	1.21	2,356	2,544	4,654	4,567
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					

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# Sewer System

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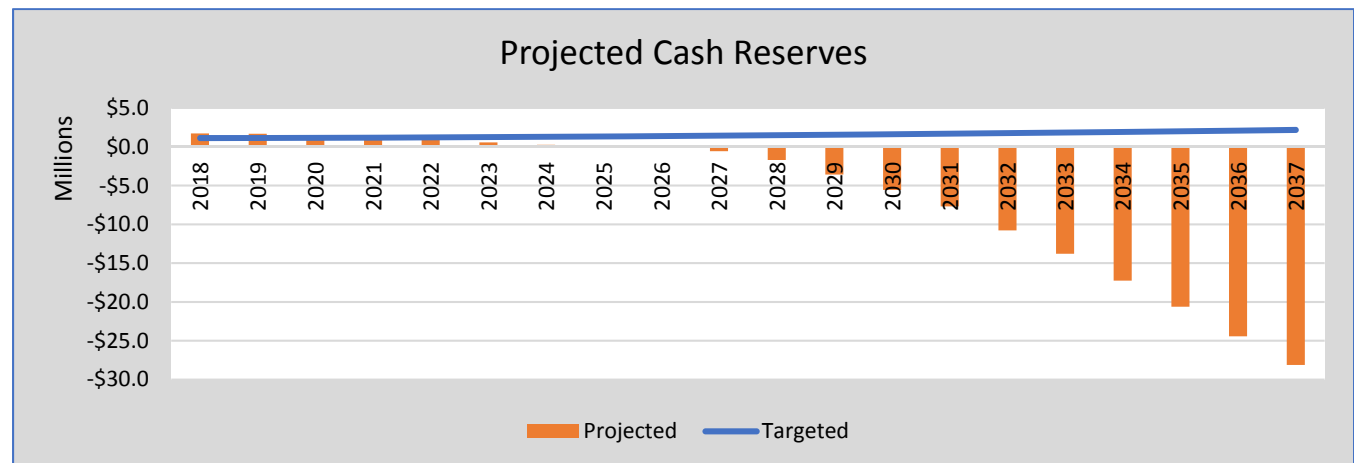
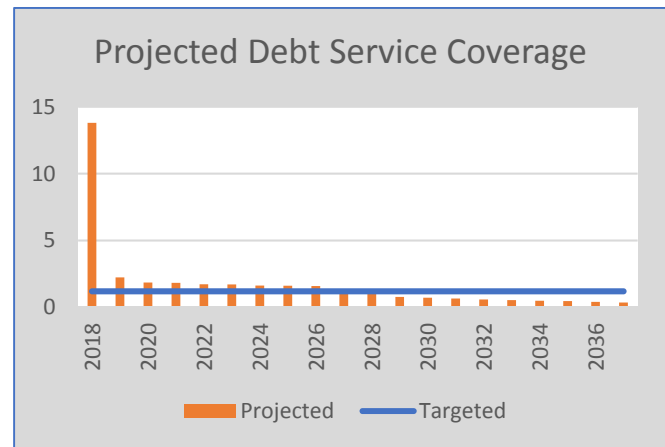
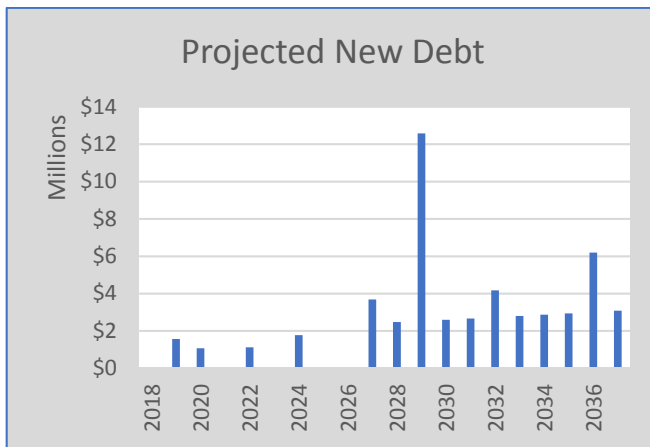
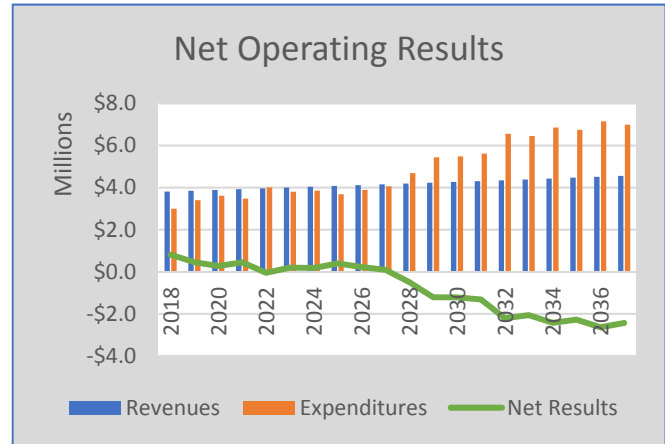
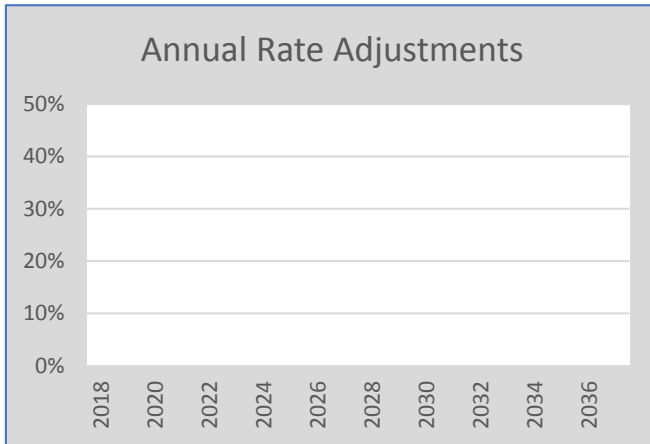
Scenario 2 Master Plan Amortized over 75 Years

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## Sewer System

### Scenario 2 – Master Plan Amortized over 75 Years

Rate Increase	None
Fund Approach	Current Policy - >\$500k debt funded in project year



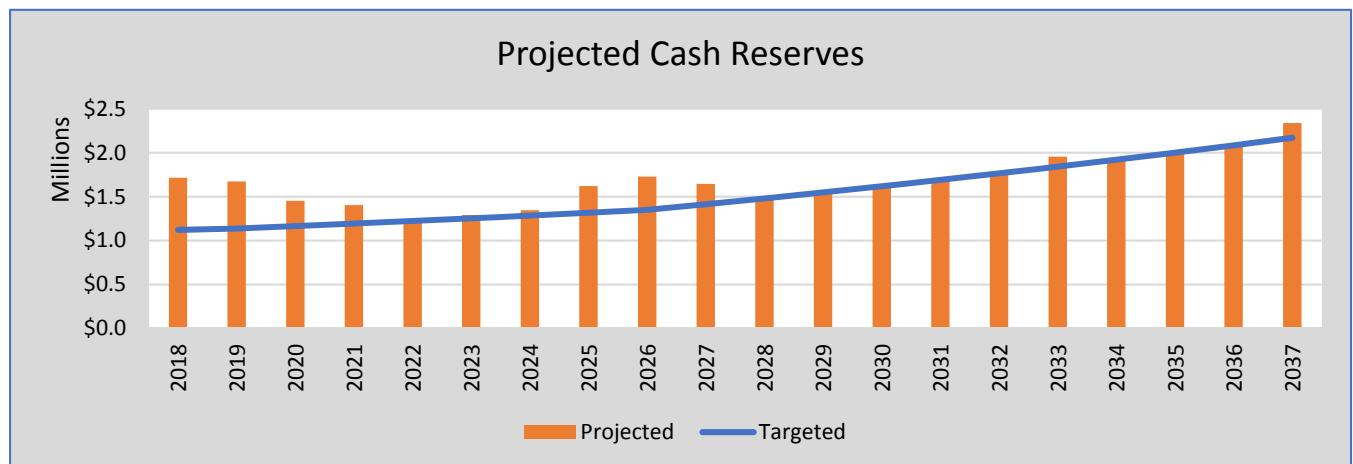
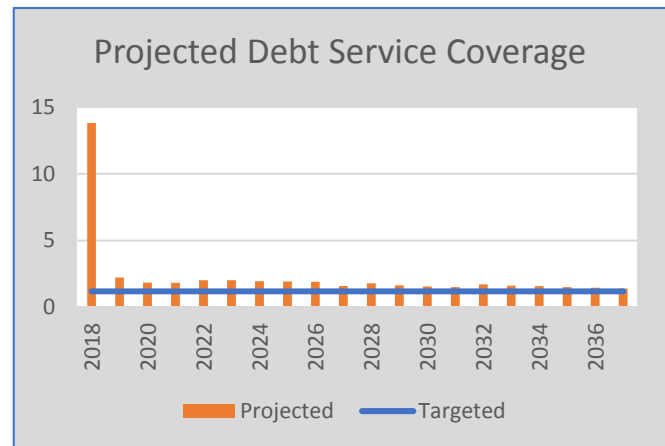
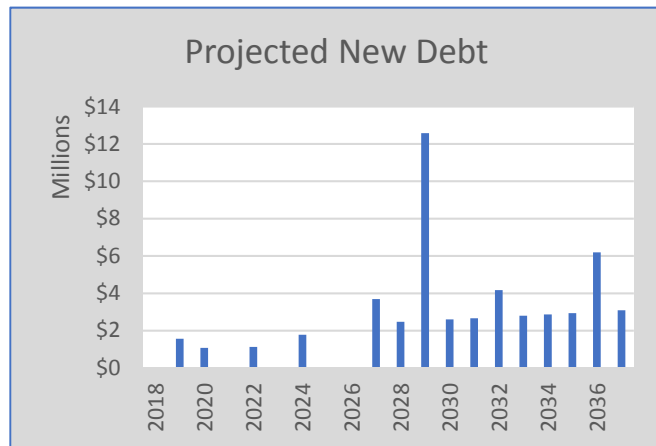
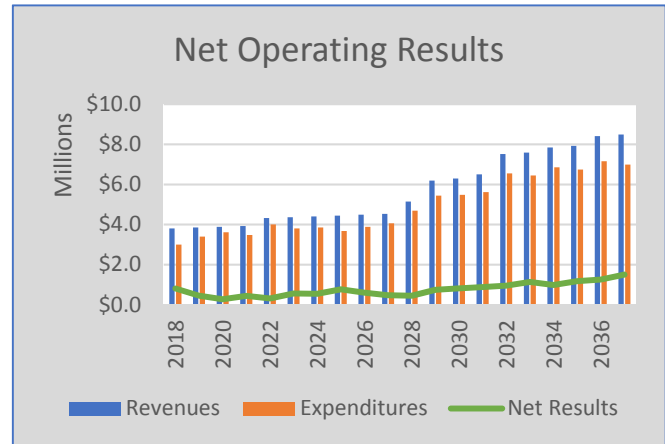
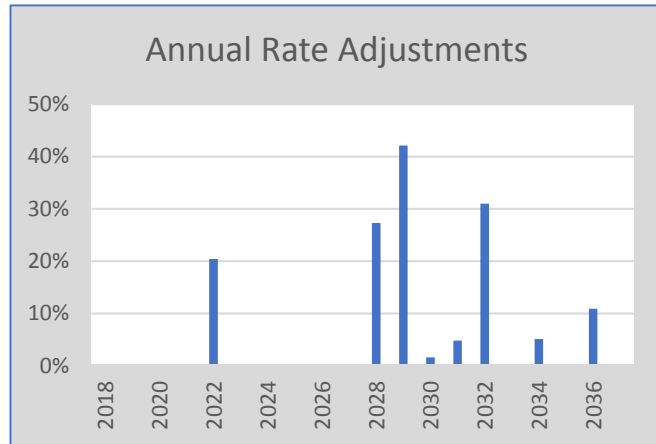
Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	-	1.20	13.80	1,121	1,713	-	1,074
2019	-	1.20	2.23	1,138	1,672	-	2,216
2020	-	1.20	1.85	1,165	1,451	-	1,711
2021	-	1.20	1.83	1,193	1,403	-	470
2022	-	1.20	1.72	1,223	863	-	1,983
2023	-	1.20	1.71	1,253	564	-	623
2024	-	1.20	1.63	1,284	249	-	2,316
2025	-	1.20	1.61	1,316	149	-	333
2026	-	1.20	1.59	1,350	(122)	-	476
2027	-	1.20	1.32	1,414	(587)	2,424	3,979
2028	-	1.20	1.17	1,480	(1,703)	2,484	3,202
2029	-	1.20	0.78	1,548	(3,598)	2,546	13,054
2030	-	1.20	0.71	1,618	(5,562)	2,610	3,090
2031	-	1.20	0.65	1,690	(7,691)	2,675	3,055
2032	-	1.20	0.58	1,765	(10,784)	2,742	5,147
2033	-	1.20	0.54	1,841	(13,799)	2,811	3,447
2034	-	1.20	0.49	1,920	(17,251)	2,881	3,669
2035	-	1.20	0.46	2,001	(20,624)	2,953	3,388
2036	-	1.20	0.40	2,084	(24,438)	3,027	6,538
2037	-	1.20	0.36	2,170	(28,125)	3,102	3,054
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					



## Sewer System

### Scenario 2 – Master Plan Amortized over 75 Years

Rate Increase	Just in Time
Fund Approach	Current Policy - >\$500k debt funded in project year

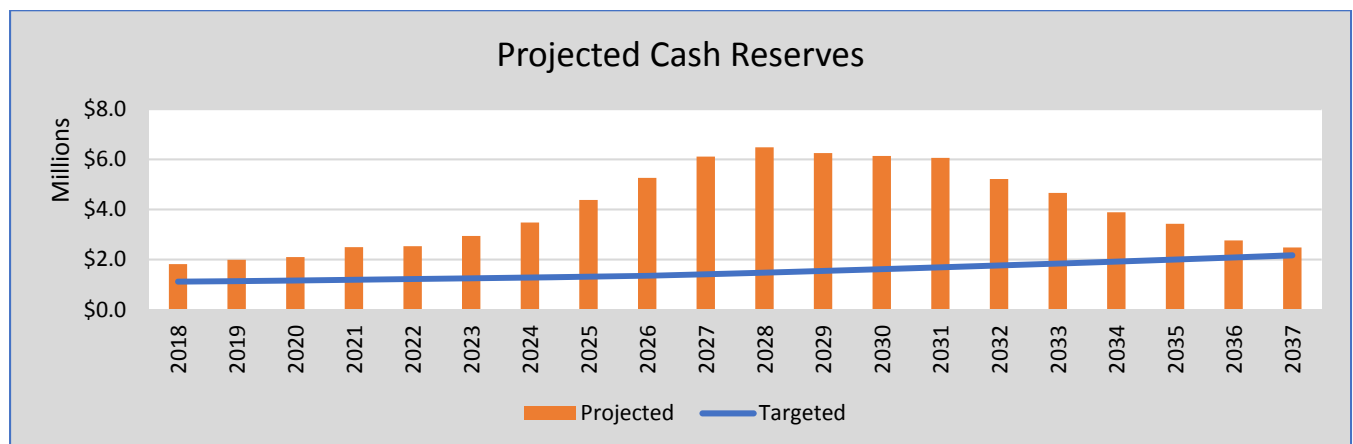
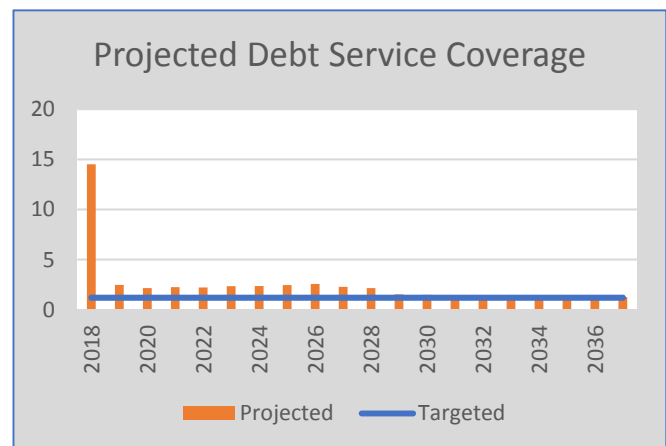
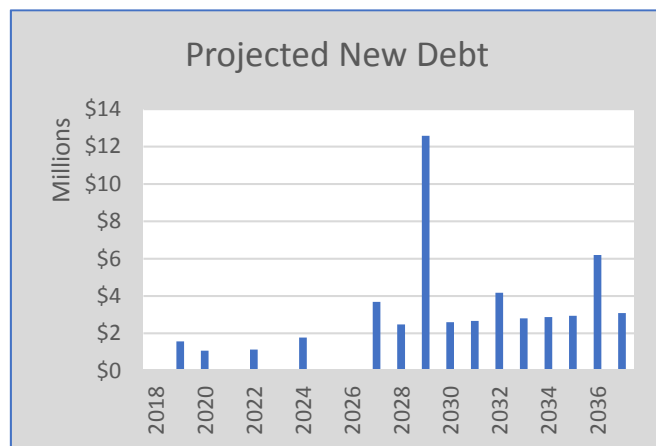
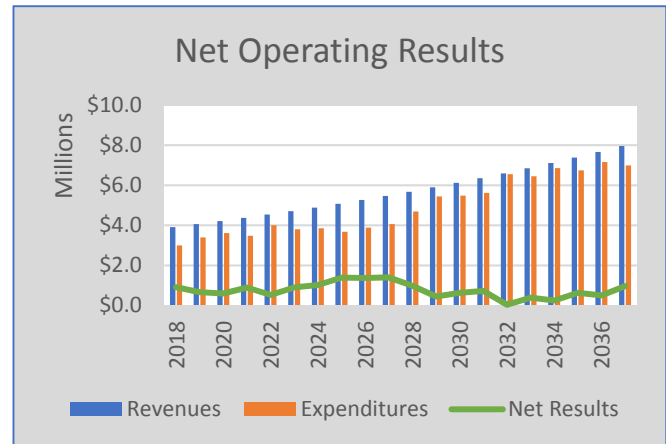
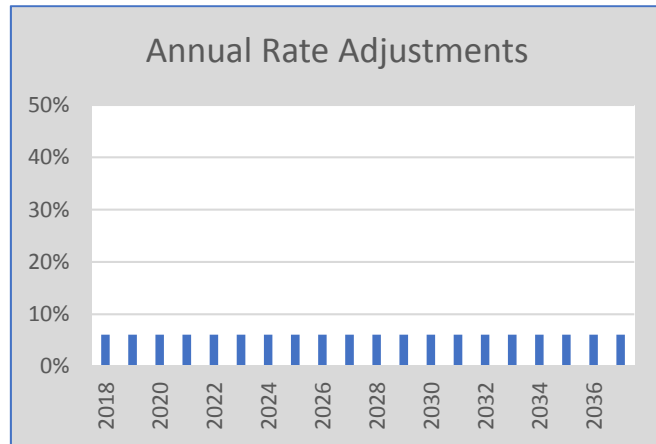


Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	0.00%	1.20	13.80	1,121	1,713	-	1,074
2019	0.00%	1.20	2.23	1,138	1,672	-	2,216
2020	0.00%	1.20	1.85	1,165	1,451	-	1,711
2021	0.00%	1.20	1.83	1,193	1,403	-	470
2022	20.40%	1.20	2.03	1,223	1,224	-	1,983
2023	0.00%	1.20	2.03	1,253	1,290	-	623
2024	0.00%	1.20	1.95	1,284	1,344	-	2,316
2025	0.00%	1.20	1.93	1,316	1,619	-	333
2026	0.00%	1.20	1.91	1,350	1,726	-	476
2027	0.00%	1.20	1.60	1,414	1,645	2,424	3,979
2028	27.30%	1.20	1.80	1,480	1,481	2,484	3,202
2029	42.10%	1.20	1.65	1,548	1,550	2,546	13,054
2030	1.60%	1.20	1.56	1,618	1,620	2,610	3,090
2031	4.80%	1.20	1.51	1,690	1,691	2,675	3,055
2032	31.00%	1.20	1.72	1,765	1,768	2,742	5,147
2033	0.00%	1.20	1.62	1,841	1,955	2,811	3,447
2034	5.10%	1.20	1.59	1,920	1,921	2,881	3,669
2035	0.00%	1.20	1.51	2,001	2,002	2,953	3,388
2036	10.90%	1.20	1.47	2,084	2,085	3,027	6,538
2037	0.00%	1.20	1.40	2,170	2,336	3,102	3,054
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					

## Sewer System

### Scenario 2 – Master Plan Amortized over 75 Years

Rate Increase	Phased In (level)
Fund Approach	Current Policy - >\$500k debt funded in project year



Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	6.10%	1.20	14.51	1,121	1,817	-	1,074
2019	6.10%	1.20	2.47	1,138	1,988	-	2,216
2020	6.10%	1.20	2.15	1,165	2,095	-	1,711
2021	6.10%	1.20	2.25	1,193	2,495	-	470
2022	6.10%	1.20	2.22	1,223	2,531	-	1,983
2023	6.10%	1.20	2.34	1,253	2,942	-	623
2024	6.10%	1.20	2.36	1,284	3,476	-	2,316
2025	6.10%	1.20	2.46	1,316	4,374	-	333
2026	6.10%	1.20	2.57	1,350	5,255	-	476
2027	6.10%	1.20	2.27	1,414	6,105	2,424	3,979
2028	6.10%	1.20	2.15	1,480	6,475	2,484	3,202
2029	6.10%	1.20	1.52	1,548	6,246	2,546	13,054
2030	6.10%	1.20	1.48	1,618	6,135	2,610	3,090
2031	6.10%	1.20	1.45	1,690	6,055	2,675	3,055
2032	6.10%	1.20	1.39	1,765	5,213	2,742	5,147
2033	6.10%	1.20	1.37	1,841	4,659	2,811	3,447
2034	6.10%	1.20	1.35	1,920	3,887	2,881	3,669
2035	6.10%	1.20	1.34	2,001	3,425	2,953	3,388
2036	6.10%	1.20	1.26	2,084	2,761	3,027	6,538
2037	6.10%	1.20	1.26	2,170	2,478	3,102	3,054
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					

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# Sewer System

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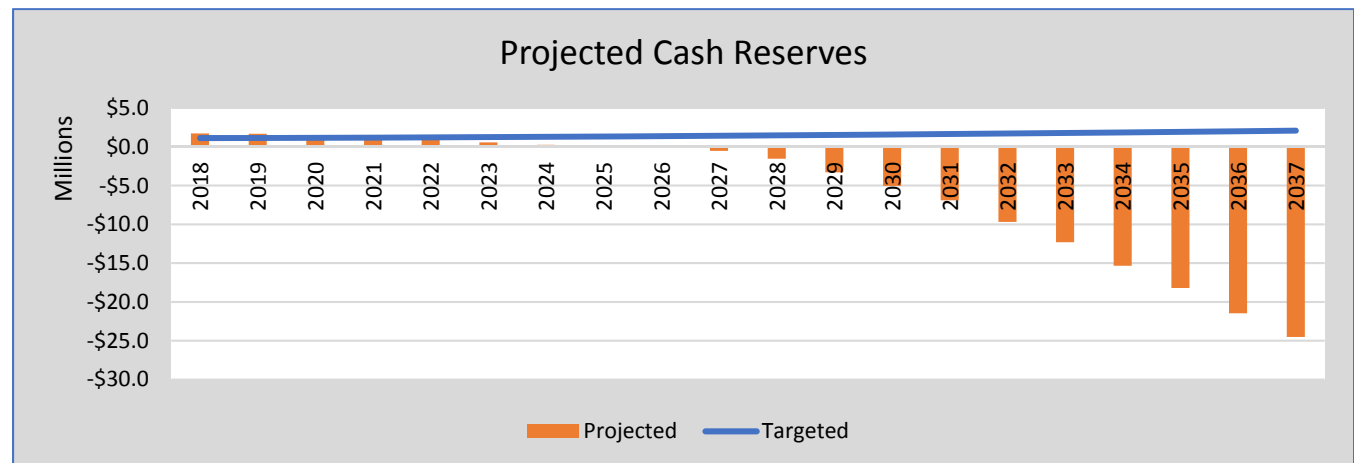
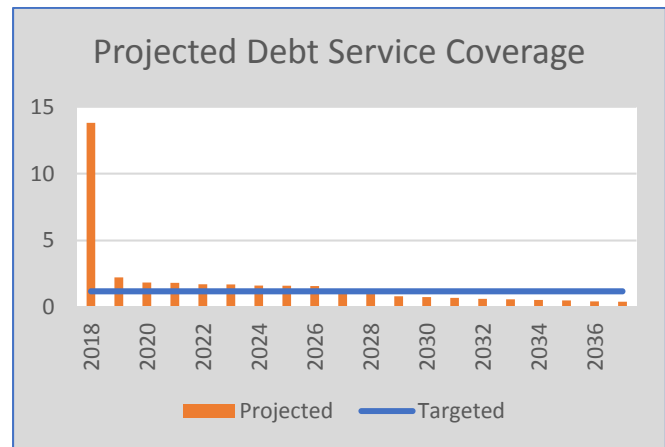
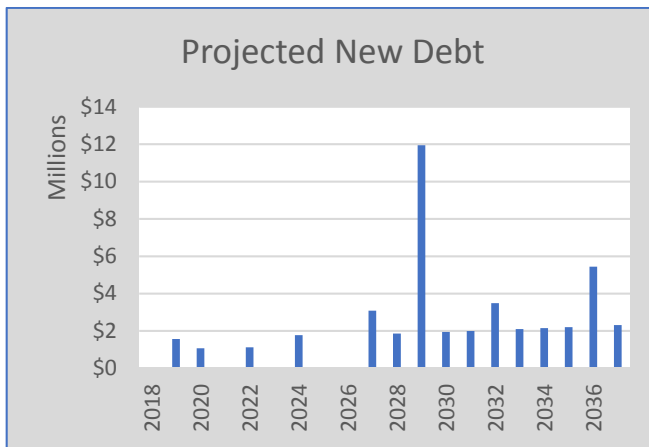
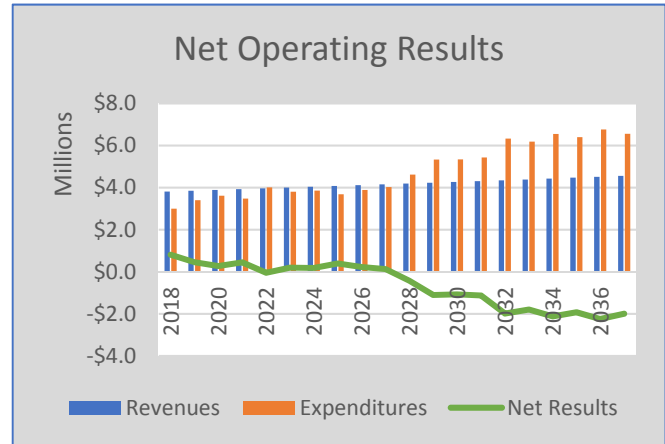
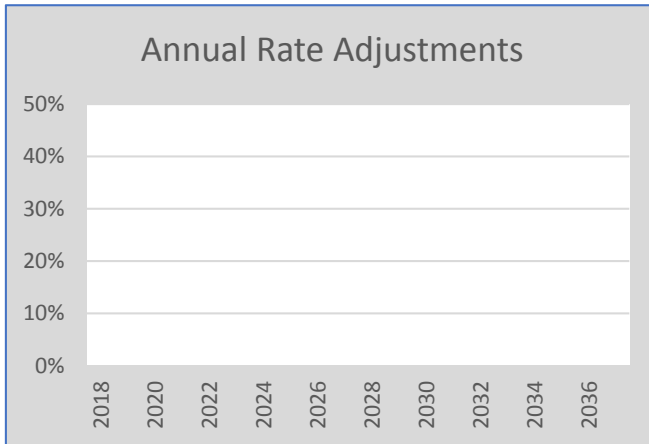
Scenario 3 Master Plan Amortized over 100 Years

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## Sewer System

### Scenario 3 – Master Plan Amortized over 100 Years

Rate Increase	None
Fund Approach	Current Policy - >\$500k debt funded in project year

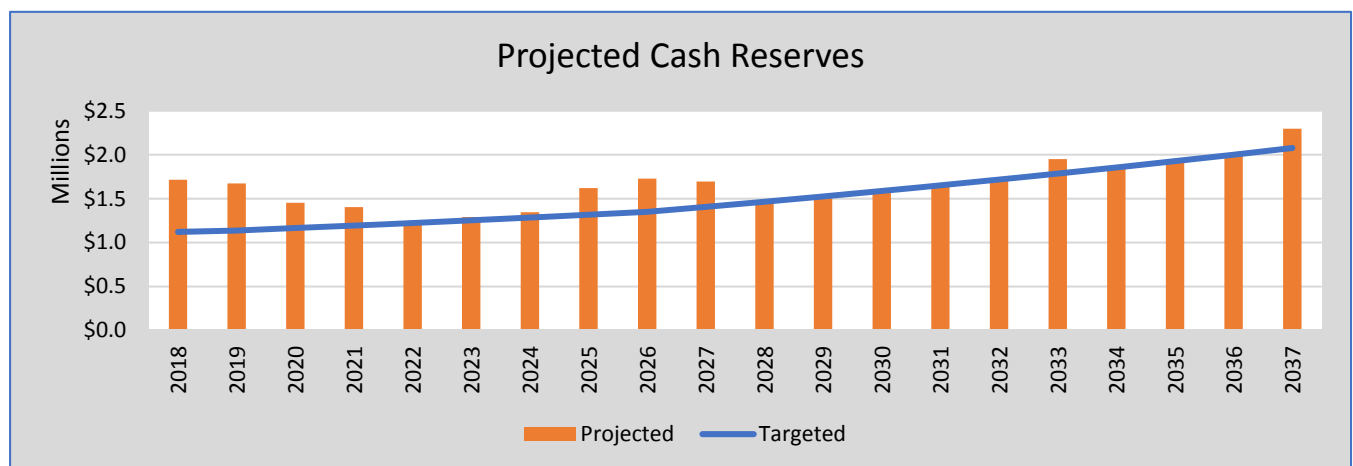
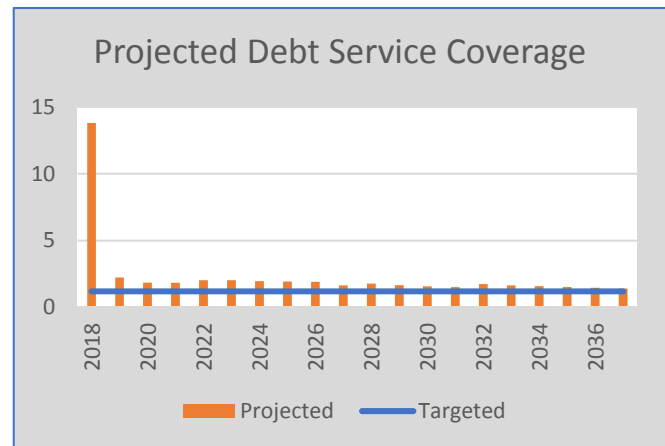
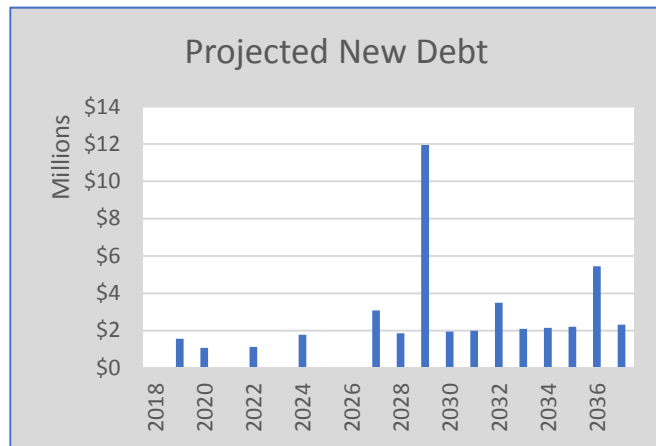
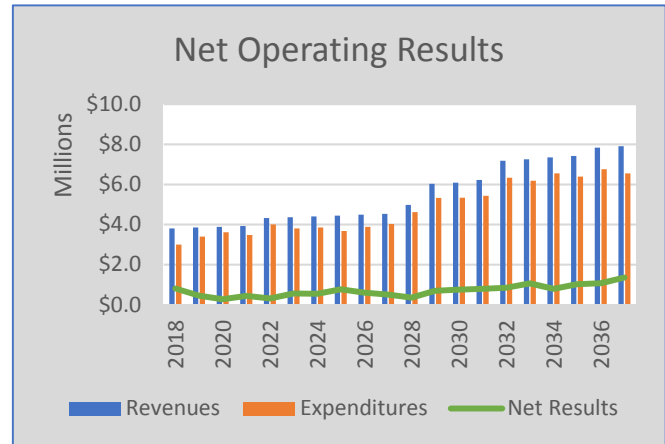
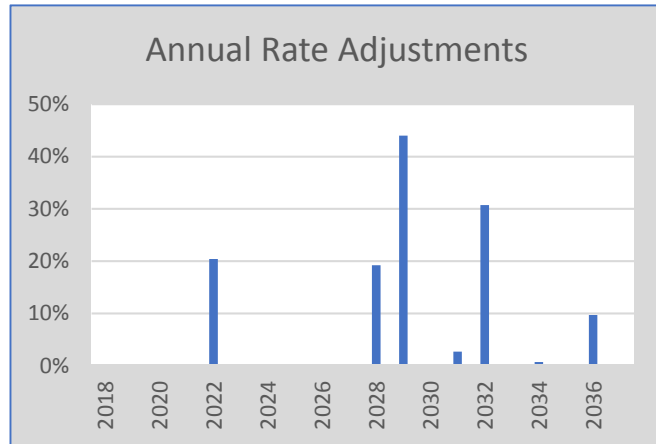


Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	-	1.20	13.80	1,121	1,713	-	1,074
2019	-	1.20	2.23	1,138	1,672	-	2,216
2020	-	1.20	1.85	1,165	1,451	-	1,711
2021	-	1.20	1.83	1,193	1,403	-	470
2022	-	1.20	1.72	1,223	863	-	1,983
2023	-	1.20	1.71	1,253	564	-	623
2024	-	1.20	1.63	1,284	249	-	2,316
2025	-	1.20	1.61	1,316	149	-	333
2026	-	1.20	1.59	1,350	(122)	-	476
2027	-	1.20	1.35	1,407	(537)	1,818	3,388
2028	-	1.20	1.23	1,465	(1,552)	1,863	2,596
2029	-	1.20	0.82	1,525	(3,291)	1,910	12,433
2030	-	1.20	0.76	1,587	(5,047)	1,957	2,453
2031	-	1.20	0.70	1,651	(6,912)	2,006	2,402
2032	-	1.20	0.63	1,717	(9,686)	2,057	4,478
2033	-	1.20	0.59	1,785	(12,322)	2,108	2,761
2034	-	1.20	0.55	1,855	(15,336)	2,161	2,967
2035	-	1.20	0.51	1,926	(18,209)	2,215	2,667
2036	-	1.20	0.44	2,000	(21,462)	2,270	5,800
2037	-	1.20	0.41	2,077	(24,522)	2,327	2,297
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					

## Sewer System

### Scenario 3 – Master Plan Amortized over 100 Years

Rate Increase	Just in Time
Fund Approach	Current Policy - >\$500k debt funded in project year



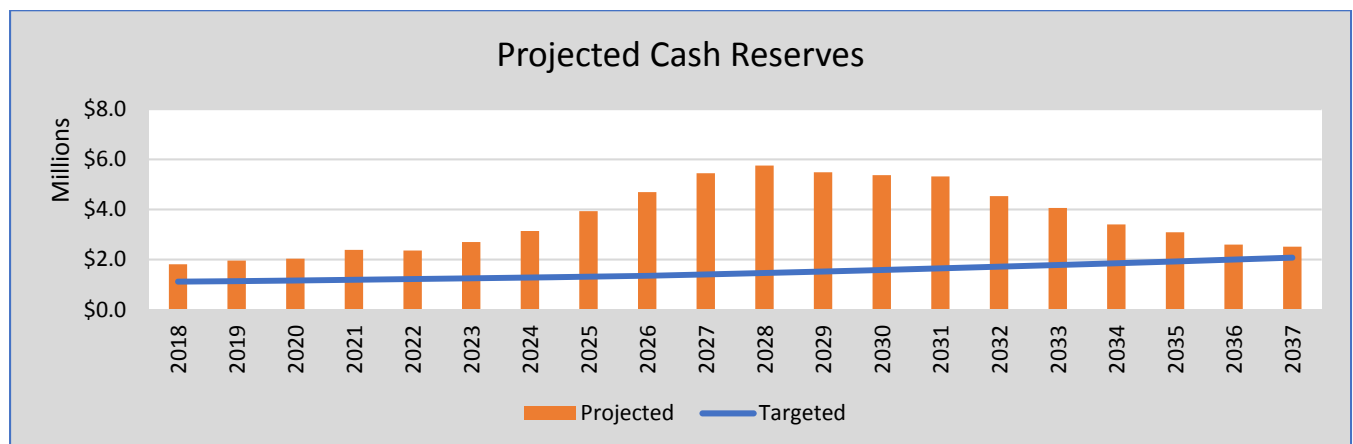
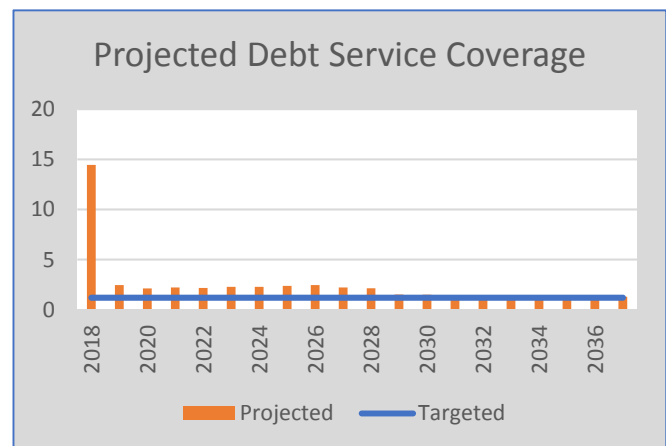
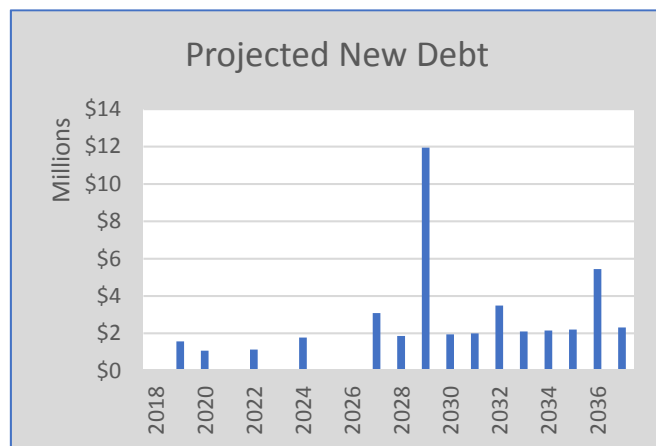
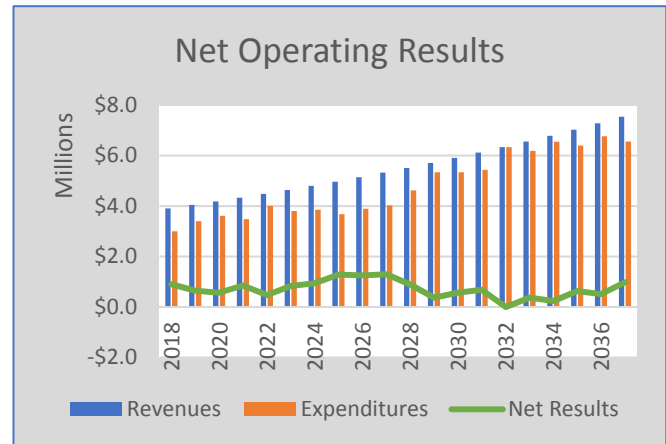
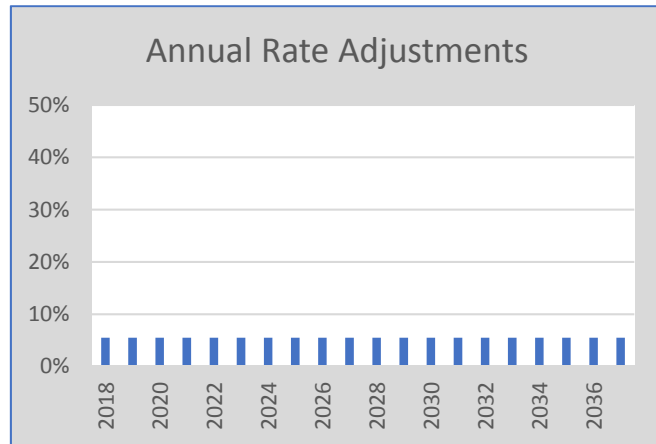


Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	0.00%	1.20	13.80	1,121	1,713	-	1,074
2019	0.00%	1.20	2.23	1,138	1,672	-	2,216
2020	0.00%	1.20	1.85	1,165	1,451	-	1,711
2021	0.00%	1.20	1.83	1,193	1,403	-	470
2022	20.40%	1.20	2.03	1,223	1,224	-	1,983
2023	0.00%	1.20	2.03	1,253	1,290	-	623
2024	0.00%	1.20	1.95	1,284	1,344	-	2,316
2025	0.00%	1.20	1.93	1,316	1,619	-	333
2026	0.00%	1.20	1.91	1,350	1,726	-	476
2027	0.00%	1.20	1.64	1,407	1,695	1,818	3,388
2028	19.20%	1.20	1.77	1,465	1,465	1,863	2,596
2029	44.00%	1.20	1.66	1,525	1,527	1,910	12,433
2030	0.00%	1.20	1.57	1,587	1,595	1,957	2,453
2031	2.70%	1.20	1.51	1,651	1,654	2,006	2,402
2032	30.70%	1.20	1.74	1,717	1,719	2,057	4,478
2033	0.00%	1.20	1.65	1,785	1,949	2,108	2,761
2034	0.70%	1.20	1.58	1,855	1,856	2,161	2,967
2035	0.00%	1.20	1.52	1,926	1,933	2,215	2,667
2036	9.70%	1.20	1.47	2,000	2,001	2,270	5,800
2037	0.00%	1.20	1.40	2,077	2,295	2,327	2,297
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					

## Sewer System

### Scenario 3 – Master Plan Amortized over 100 Years

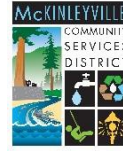
Rate Increase	Phased In (level)
Fund Approach	Current Policy - >\$500k debt funded in project year



Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	5.50%	1.20	14.44	1,121	1,807	-	1,074
2019	5.50%	1.20	2.45	1,138	1,957	-	2,216
2020	5.50%	1.20	2.12	1,165	2,030	-	1,711
2021	5.50%	1.20	2.21	1,193	2,385	-	470
2022	5.50%	1.20	2.17	1,223	2,361	-	1,983
2023	5.50%	1.20	2.27	1,253	2,697	-	623
2024	5.50%	1.20	2.28	1,284	3,141	-	2,316
2025	5.50%	1.20	2.37	1,316	3,931	-	333
2026	5.50%	1.20	2.46	1,350	4,686	-	476
2027	5.50%	1.20	2.22	1,407	5,441	1,818	3,388
2028	5.50%	1.20	2.14	1,465	5,746	1,863	2,596
2029	5.50%	1.20	1.51	1,525	5,482	1,910	12,433
2030	5.50%	1.20	1.49	1,587	5,367	1,957	2,453
2031	5.50%	1.20	1.47	1,651	5,313	2,006	2,402
2032	5.50%	1.20	1.40	1,717	4,527	2,057	4,478
2033	5.50%	1.20	1.39	1,785	4,058	2,108	2,761
2034	5.50%	1.20	1.38	1,855	3,402	2,161	2,967
2035	5.50%	1.20	1.38	1,926	3,084	2,215	2,667
2036	5.50%	1.20	1.30	2,000	2,593	2,270	5,800
2037	5.50%	1.20	1.29	2,077	2,511	2,327	2,297

Note:

[1] Amounts shown in \$1,000's.

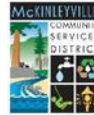


## Sanitary Sewer Main Line Replacement and Rehabilitation Master Plan – Phase 1

McKinleyville Community Services District

**GHD** | 718 3<sup>rd</sup> Street, Eureka, California

11125090 | November 2017



# Executive Summary

## Introduction

Phase 1 of this Sanitary Sewer Main Line Replacement and Rehabilitation Master Plan (Master Plan) has been prepared to provide a framework for planning, funding, and implementing replacements, rehabilitation, and upgrades to the McKinleyville Community Service District's (MCSD or District) sanitary sewer collection system. This Master Plan effort includes an analysis of all of the pipelines and manholes in the District's sanitary sewer system. No analyses of lift stations or the wastewater management facility are provided as a part of this study, and they are being addressed under other aspects of the District's Capital Improvement Planning (CIP) process.

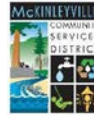
The original collection system was constructed in 1976. As the system continues to age, replacement and rehabilitation of existing infrastructure will be necessary to maintain an effective, functional system. This report serves as the first of two (or potentially three) phases of the Master Plan effort. The work on the various phases will culminate in the development of a Final Sanitary Sewer Main Line Replacement and Rehabilitation Master Plan (Final Master Plan). The Final Master Plan will serve as a final planning and budgeting outline to ensure the District is able to continue their high level of service to the community well into the future.

Phase 1 of the Master Plan includes a review and analysis of available information that was used to produce a planning-level long-term replacement plan and a near-term rehabilitation plan that identifies areas with performance or capacity constraints that need to be resolved in the next ten years.

Phase 1 of the Master Plan provides the following:

- Overview of the existing collection system.
- Summary of previous related studies.
- Information on anticipated population growth.
- Preliminary needs assessment.
- Long-term replacement analysis including replacement cost estimates.
- Discussion of near-term projects including cost and scheduling information.
- Financial analysis based on the replacement cost estimates.
- Conclusions, recommendations, and next steps.

The subsequent phase(s) of the Master Plan will provide more detailed cost analyses and phasing of the replacement and rehabilitation of collection system main lines through more detailed assessments and physical evaluation of system conditions. It is important to note that although this document analyzes the replacement cost for the entire collection system and the impact this replacement cost would have on user rates, we do not recommend that the entire system be replaced in its entirety, nor are we advocating for the rate increases presented in the Financial Analysis section of this document. Further refinement and final recommendations for the actual



extent of main line replacement, scheduling, and the corresponding financial analysis will be performed in Phase 2 of the Master Planning effort.

## Overview of Existing System

MCSD's collection system consists of approximately 73 miles of piping with approximately 5,180 active connections. The majority of the system is gravity, but there are five lift stations that pump water through approximately 1.7 miles of force mains. The system ultimately conveys water to the District's wastewater management facility (WWMF) for treatment.

## Anticipated Growth

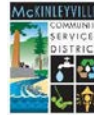
It is important to consider future demand when planning future rehabilitation and replacement of sewer main pipelines. The 2002 McKinleyville Community Plan (a subsection of the Humboldt County General Plan) noted that the most probable growth projection for McKinleyville was 1.8%, based on the growth trends at the time. Using more recent figures from the United States Census Bureau, growth from 2010 to 2015 was approximately 1.43% per annum. The District has indicated that they would consider using a rate of 1% per annum for growth projections when considering future development potential within District service boundaries. A projected growth scenario that most closely resembled the growth rate of 1.8% was used for hydraulic modeling previously completed by SHN to project future flows in the system.

## Preliminary Needs Assessment

A preliminary needs assessment was completed based on a review of previous studies, data provided by the District, and discussions with District staff. The needs assessment was focused on issues related to capacity, areas that have required excessive maintenance in the past, and areas that could require excessive maintenance or difficult repairs in the future. No physical assessment, flow monitoring, or other field studies were performed as a part of this Phase 1 effort.

The following information and issues are presented in the preliminary needs assessment:

- There are capacity issues at the middle Highway 101 crossing, south Highway 101 crossing, the intersection of Railroad Drive/Spruce Avenue, and the intersection of Hiller Road/Thiel Avenue.
- The asbestos cement (AC) main on Central Avenue from Sutter Road to Hiller Road is severely corroded.
- The system is aging. The majority of the pipe in the system is AC pipe that was installed in 1976 and is over 40 years old. Significant portions of this pipe will likely need to be replaced in the next 10 to 30 years (based on typical literature values for the lifespan of AC pipe).



- Approximately half of the force mains in the system are over 40 years old. A failure in one of these force mains would pose serious issues for the District including difficult repairs, overflows, environmental impacts, and fines.
- It is critical to understand the condition of the stream crossings in the system, as a failure in one of these sections of pipe would be very difficult and time-consuming to repair. Additionally, a failure of a stream crossing would cause a major release of raw sewage to a stream.
- It is critical to understand the condition of the three Highway 101 crossings (outside of the capacity issues), as a failure in one of these sections of pipe would be very difficult and time-consuming to repair. Additionally, these three crossings ultimately convey the majority of the flows in the sewer system from the east side of Highway 101 to the west side, where the WWMF is located.
- It would take a considerable amount of planning to replace the pipeline along Central Avenue, and effort should be put forth to more accurately assess this section of the system.

### Long-Term Replacement Analysis

The long-term replacement analysis presents cost estimates for replacing the entire system. The total estimated cost for all permitting, design, surveying, construction, and construction management related to replacing the entire collection system is \$142 million in today's dollars.

The Phase 1 cost estimates are presented in an effort to understand what the overall cost would be to systematically replace the entire system, and to determine what the overall impact to user rates would be. The intent is to use this information as a starting point for Phase 2 of the Master Plan effort. Phase 2 will consist of more detailed cost estimates and more detailed scheduling/phasing for the replacement of the District's sewer mains.

### Near-Term Rehabilitation Plan

The near-term rehabilitation plan presents four areas of the system with critical issues that need to be addressed or analyzed further in the near term:

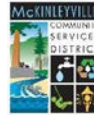
- Middle Highway 101 crossing
- South Highway 101 crossing
- Central Avenue Main from Sutter Road to Hiller Road
- Force mains

These projects are each discussed further in the following sub-sections.

#### Middle Highway 101 Crossing

The middle Highway 101 crossing (middle crossing) is the highest priority capital project for the District's collection system. This crossing is a portion of Line 5 that crosses under the highway near





Thiel Avenue just north of Kirkwood Court and ultimately conveys flow to the Hiller lift station. It consists of a 10-inch diameter ductile iron pipe (DIP) gravity sewer main that is encased in a 21-inch diameter, 215-foot-long steel casing. The District has been aware of capacity issues with this middle crossing for many years. Model results performed by SHN in 2013 show that this section of pipe is undersized and needs to be upgraded.

This document presents two alternatives for upgrading the middle crossing: 1) direct replacement within the existing casing, and 2) auger boring in a new pipe parallel to the existing line.

#### Direct Replacement Alternative

This alternative would include removing the existing 10-inch pipe and installing a new 16-inch outside diameter (OD) DR 17 high-density polyethylene (HDPE) pipe inside the existing 21-inch casing. This would increase the calculated capacity of this section of pipe from 573 gallons per minute (gpm) to approximately 1,620 gpm. SHN's 2013 model results show that with existing population conditions and infiltration and inflow (I&I) from a 100-year, 24-hour storm, the peak flow at the middle crossing would be 580 gpm. The proposed 16-inch HDPE would provide ample capacity to handle projected population growth and I&I from large storms.

The total cost for permitting, a geotechnical investigation, design, survey, land/right-of-way acquisition, construction, and construction management for this alternative is estimated to be \$847,000. This is the recommended alternative, as it is the most cost effective solution to the capacity issues at this location.

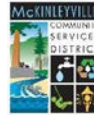
#### Auger Boring Alternative

This alternative would include auger boring (also known as "jacking and boring") a new parallel pipe. In this method, a pit is excavated on each end of the bore. A cutting head is attached to a stick of casing pipe with an auger inside that is used for cutting through material and to convey the material back to the entry pit. Additional auger sections and sticks of casing pipe are added as the bore advances, until it ultimately emerges at the exit pit. Once the casing pipe is installed, the sewer main (fused 16-inch OD DR 17 HDPE) will be pushed into the casing using the boring machine or pulled through from the east side of the highway with a winch.

Auger boring is an unguided, non-steered, straight line method, so it is critical that the boring machine is set to the correct grade line, as there is no way to change direction once the process has begun. For this reason, the casing needs to be made much larger than the pipe itself so that if the casing does not get installed at the proper grade, there is room inside to adjust the gravity sewer pipe. For this project, a 36-inch casing would likely be used.

The total cost for permitting, a geotechnical investigation, design, survey, land/right-of-way acquisition, construction, and construction management for this alternative is estimated to be \$1,000,000.





### ***South Highway 101 Crossing***

SHN's model results from 2012 and 2013 also showed capacity issues with the south Highway 101 crossing. While the issues associated with the south crossing are not as high-priority as those associated with the middle crossing, this is still a near-term project that should be addressed within the next ten years. After the District has completed the middle crossing work, they should start planning and budgeting for design and construction to address the issues with the south crossing. A detailed cost estimate for this work could be developed as a part of Phase 2. However, for budget purposes, it can be assumed that the cost for upgrading the south crossing would be similar to the cost for upgrading the middle crossing, or approximately \$1 million.

### ***Central Avenue Main from Sutter Road to Hiller Road***

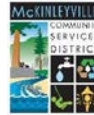
The 8-inch asbestos cement (AC) main on Central Avenue from Sutter Road to Hiller Road has become severely corroded by hydrogen sulfide gas. The joints of the main in this area have corroded away to the point where the gaskets at the joints are actually exposed. If the problem is not addressed in the near term (next approximately 5-10 years), this section of pipe could present serious issues with I&I and pipe failure. Physical assessment of this section of pipe should occur in the near term to determine the urgency for repair or replacement. The cost for replacing this section of the system has been estimated as \$854,000 including costs for permitting, design, construction, and construction management.

### ***Force Mains***

Approximately half of the force mains in the system are over 40 years old, and the majority of the force mains are AC pipe. There are five sewer lift stations in the MCSD system (B Street, Fischer Road, Letz Lane, Kelly Avenue, and Hiller Road lift stations). Four of them (Fischer, Letz, Kelly, and Hiller) are on the west side of Highway 101, and all of the wastewater flow in the system is ultimately routed through these four lift stations. If one of the force mains downstream of these stations were to fail, it would pose a very serious issue for the District. User flows would of course continue to be contributed to the system, and it would be very difficult and time-consuming to bypass flows around the failed force main to allow for repair. The lift station associated with the failed force main would likely overflow with sewage within hours, which would also cause backup within the pipe network. This could lead to serious environmental impacts as well as fines imposed on the District. Due to the serious repercussions of a failed force main in this system, it is critical to begin assessment of the system force mains in the near term to determine when it will be appropriate to begin force main replacement.

### ***Financial Analysis***

Willdan Financial Services (Willdan) was retained by the District to develop a multi-year pro forma analysis for the sewer system reflecting the potential financial impact of the long-term systematic replacement of the entire collection system as discussed in Phase 1 of this Master Plan.



Specifically, Willdan prepared 30-year projections of net operating results under three specific scenarios for funding the improvements analyzed in Section 3.1. These scenarios included completing the improvements in 50 years, 75 years, and 100 years, with an analysis of how each of these three planning horizons affect District finances in a 30-year projection period.

Within each of these scenarios, Willdan developed three distinct analyses depicting operating results under the following rate paths:

- No Rate Increases – referred to as the “do nothing” scenario and assesses the District’s ability to support operations and capital improvements assuming no future rate increases.
- Just-in-Time Rate Increases – calculates the level of rate adjustments needed on a “just-in-time” basis to meet system revenue requirements, including capital improvements.
- Phased-In Rate Increases – depicts a possible rate path that attempts to avoid large rate adjustments by phasing them in over time.

Ultimately the “no rate” increases scenario was not deemed viable, as the projected cash reserves would fall under the recommended reserves immediately after the implementation of the system replacement projects.

A bar graph illustrating rate adjustments required using the phased-in method is provided as Figure ES - 1.

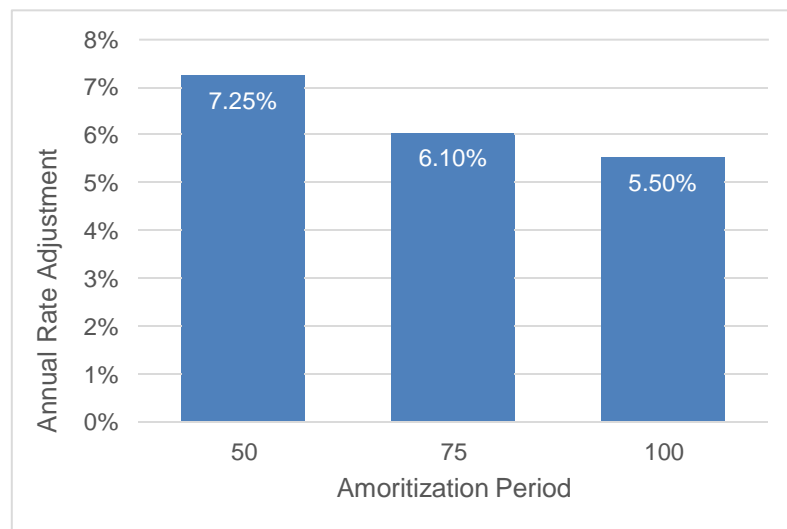
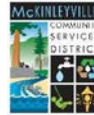


Figure ES - 1: Estimated Annual Rate Adjustments Required Using the Phased-In Method

It is important to emphasize that we are not recommending that the District begin implementing the rate increases presented in this section. This is simply an analysis to assess what effect the replacement of the entire sanitary sewer collection system would have on user rates and District finances.

It should be noted that MCSD currently has a policy prescribing that all capital improvement projects exceeding \$500,000 in a given year will be funded by debt. Likewise, any project under the \$500,000 threshold will be funded on a pay-as-you-go basis with available unrestricted cash. The

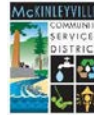


scenarios summarized in the Willdan memo assume MCSD will continue with this policy. However, as part of this exercise, the project team discussed the possibility of revising this policy to allow for “bundling” of project costs into few borrowings to take advantage of any available savings in debt issuance costs. For example, MCSD could bundle three years of project costs into a single borrowing, possibly resulting in efficiencies and savings. It is important to note that Willdan is not a registered financial advisor and is not recommending a particular debt structure. Should MCSD be interested in examining any potential benefits from alternative debt management approaches, we encourage you to consult with your financial advisor.

## Conclusions, Recommendations, and Next Steps

This final section presents conclusions, recommendations, and information on the next steps in the overall process:

- While there are some critical areas and issues in the collection system that need to be addressed or further analyzed in the near term, the majority of the District’s collection system is in good condition and has adequate capacity to serve District customers for the foreseeable future.
- The District’s sanitary sewer collection system was constructed in 1976 and is aging. In addition to the near-term projects discussed in this document, it is critical that the District begin planning and budgeting for upgrades and replacement of other system components. The majority of the system is AC pipe that is over 40 years old, and pipe corrosion and failures will likely become an issue in the next 10 to 30 years if the District does not begin this process. As the system continues to age, replacement and rehabilitation of existing infrastructure will be necessary to maintain an effective, functional system. The total estimated cost to replace the entire collection system is \$142 million in today’s dollars. Using the phased-in approach of rate increases, it is projected that replacing the entire system over 50, 75, or 100 years would require annual rate increases of 7.25%, 6.10%, and 5.50%, respectively. It is important to emphasize that we are not recommending that the District implement these rates at this juncture or necessarily plan for the replacement of the entire collection system. Phase 2 of the Master Planning process will refine the recommended extent of system replacement and the necessary rates required to do so.
- The middle Highway 101 crossing is under capacity and needs to be addressed in the near term. Two alternatives were analyzed for solving the capacity problem: 1) direct replacement within the existing casing and 2) auger boring a new parallel pipe. These two alternatives are estimated to cost \$847,000 and \$1 million, respectively. The direct replacement alternative is the most cost effective alternative for addressing the problem and is the recommended alternative for this project.
- There are capacity issues at the south Highway 101 crossing. While the issues associated with the south crossing are not as high-priority as those associated with the middle crossing, this is still a near-term project that should at least be budgeted for within the next ten years. After the District has completed the middle crossing work, they should start planning and budgeting for design and construction to address the issues with the south crossing. Based on the cost

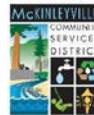


estimate for the middle crossing, it is estimated that the cost for upgrading the south crossing would be approximately \$1 million.

- The 8-inch asbestos cement (AC) main on Central Avenue from Sutter Road to Hiller Road has become severely corroded by hydrogen sulfide gas. If the problem is not addressed in the near term (next approximately 5-10 years), this section of pipe could present serious issues with I&I and pipe failure. Physical assessment of this section of pipe should occur in the near term to determine the urgency for replacement. The cost for replacing this section of the system has been estimated to be \$854,000.
- Approximately half of the force mains in the system are over 40 years old, and the majority of the force mains are AC pipe. If one of the force mains were to fail, it would pose a very serious issue for the District. It would be very difficult and time-consuming to bypass flows around the failed force main to allow for repair. The lift station associated with the failed force main would likely overflow with sewage within hours, which would also cause backup within the pipe network. This could lead to serious environmental impacts as well as fines imposed on the District. Due to the serious repercussions of a failed force main in this system, it is critical to begin assessment of the system force mains in the near term to determine when to begin planning for replacement.

The long-term replacement analysis provided in this document presents cost estimates, and corresponding financial impacts, for replacing the entire system. However, the District likely does not need to replace (nor do we recommend that they replace) the entire collection system. There are certainly sections where it would be much more cost effective to repair areas rather than replace the whole section of main line, particularly in less densely populated areas with smaller pipes. The cost estimates provided in this document are presented in an effort to understand what the overall cost would be to systematically replace the entire system, and to determine what the overall impact to user rates would be. The intent is to use this information as a starting point for Phase 2 of the Master Plan effort. Phase 2 will consist of more detailed cost estimates and more detailed scheduling/phasing for the replacement of the District's sewer mains. The replacement schedule will be refined through field investigation of the actual condition of portions of the collection system. After specific areas of the system are assessed, appropriate replacement methodologies (e.g. lining, bursting, or direct replacement) will be further developed with associated construction cost estimates that are more refined. The updated replacement schedule and cost information will be used to refine the financial analysis provided in Phase 1.

Ultimately, the District needs to prioritize when to replace certain sections of pipe and further define how much will be replaced per year to develop a Capital Improvement Plan that outlines how many feet of pipe will be replaced in a given year in a given area. The District then needs to decide how to pay for this CIP effort. This information will be provided as a result of this overall Master Plan effort.



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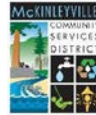
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## Appendix Index

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Appendix B	Summary Results of Financial Pro Forma Analyses (Willdan Financial Services, 2017)



# 1. Introduction and Background

The purpose of the McKinleyville Community Services District (MCSD, District) Sanitary Sewer Main Line Replacement and Rehabilitation Master Plan (Master Plan) is to provide a framework for planning, funding, and implementing replacements, rehabilitation, and upgrades to the District's sanitary sewer collection system. This type of master planning helps the District provide orderly, long-term maintenance and replacement of key elements of the collection system and, to manage the timing of major capital projects to secure revenue needed to achieve District goals.

## 1.1 Overview of Master Planning Effort

This Master Plan effort includes an analysis of all of the pipelines and manholes in the District's sanitary sewer collection system. While sewer lift stations and the wastewater management facility (WWMF) are mentioned in this report, they are discussed in the context of the overall wastewater system. No analyses of lift stations or the WWMF are provided as a part of this study, and they are being addressed under separate Capital Improvement Planning (CIP) efforts.

The overall Master Plan will be developed through multiple major phases of effort anticipated to culminate in the development of a Final Sewer Main Line Replacement and Rehabilitation Master Plan (Final Master Plan). The following three phases of master planning are envisioned:

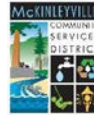
- Phase 1: High-level overview of sewer collection main lines and more detailed review of selected known issues
- Phase 2: More detailed cost analysis and phasing of the systematic replacement of sanitary sewer main lines
- Phase 3 (optional): More refined analysis of the existing condition of segments of the collection system and near-term, higher priority projects

This report presents the findings and recommendations of the Phase 1 effort, which include the results of the high-level assessment of the District's collection system for use in initial planning for replacement, rehabilitation and upgrades. This Phase 1 effort helps to quantify the overall nature, scope, and magnitude of long-term main line maintenance and replacement.

Based on planning with District staff, this Phase 1 study focuses on the following:

- General overview of MCSD and the existing collection system
- Summary of previous related studies and findings that pertain to rate structure, capacity, maintenance and repair requirements, and other identified limitations of system components
- Description of the anticipated growth for the McKinleyville area
- Discussion on areas anticipated to have capacity issues within the next approximately ten years
- Discussion on areas of excessive maintenance and excessive infiltration and inflow (I&I)
- Summary of MCSD's existing collection system main lines, including information pertaining to size, age, material, and condition





- Discussion on considerations for replacement of the collection system main lines
- Preliminary design of an upgrade for the middle sewer crossing, including a presentation of alternatives, construction cost estimates for each alternative, and a recommended replacement alternative
- Long-term replacement analysis with associated costs for systematically replacing the entire collection system
- Financial analysis to assess the rate impacts to pay for the long-term systematic replacement of the entire system. It is important to note that we are not recommending the rate increases presented in the financial analysis section, but merely assessing what it would take to pay for an entire collection system replacement.
- Rehabilitation plan with costs for projects that are recommended to be completed in the near-term (i.e. within the next approximately ten years)
- Conclusions, recommendations, and a summary of the next steps in the Master Plan process

Phase 2 of the Master Plan effort will include a more detailed cost estimate and more detailed phasing information for the systematic replacement of the sewer mains. Specific areas of the sewer system will be assessed, and appropriate replacement methodologies (e.g. lining, bursting, or direct replacement) will be developed with associated construction cost estimates. The costs for these projects will then be budgeted out for the next 50, 75 or 100 years, and a financial analysis will be performed to forecast rates necessary to fund these replacements.

Phase 3 of the effort, if it occurs, will likely consist of direct physical assessment of portions of the system to determine the condition of the pipe and confirm the schedule established under Phase 2 and/or revise the schedule or priorities.

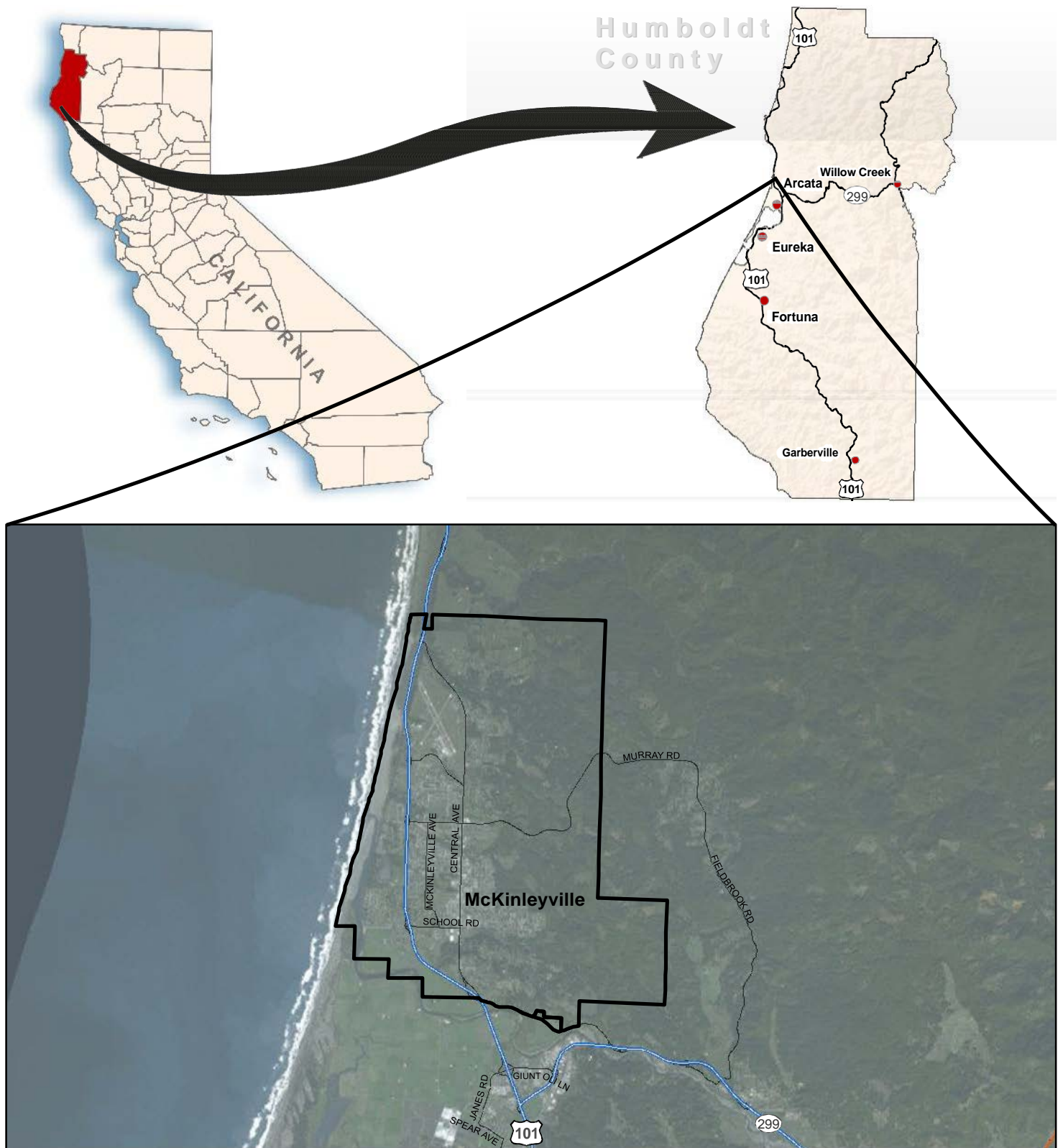
The nature of subsequent phases of master planning will depend on the findings from the initial investigations and preferences and priorities of the District. Recommendations for the next steps in the master planning process after this Phase 1 effort are summarized in Section 5.

## 1.2 Overview of Existing System

MCSD is a special service district providing parks, recreation, water, wastewater, and streetlight services to residents of McKinleyville in Humboldt County, California (see Figure 1: Project Vicinity and Location Map). The MCSD boundary encompasses approximately 19 square miles, ranging from North Bank Road on the south to Patrick Creek on the north.

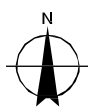
The original sewer system was constructed in 1976. All sewage for MCSD's approximately 5,180 active sewer customers (as of July 2017) is treated at the wastewater management facility (WWMF) at Hiller Park. MCSD maintains approximately 73 miles of sewer mains (including 1.7 miles of force mains) that convey water to the WWMF. The District also operates and maintains five sewer lift stations (Fischer Rd, B St, Letz Ln, Kelly Ave, and Hiller Rd lift stations). An overview of the District's sewer system is shown in Figures 2 and 3. Figure 2 symbolizes the sewer mains with respect to size, and Figure 3 symbolizes the sewer mains with respect to material.





 McKinleyville Community Services District Boundary

Paper Size ANSI A  
0 0.5 1 2  
Miles  
Map Projection: Lambert Conformal Conic  
Horizontal Datum: North American 1983  
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



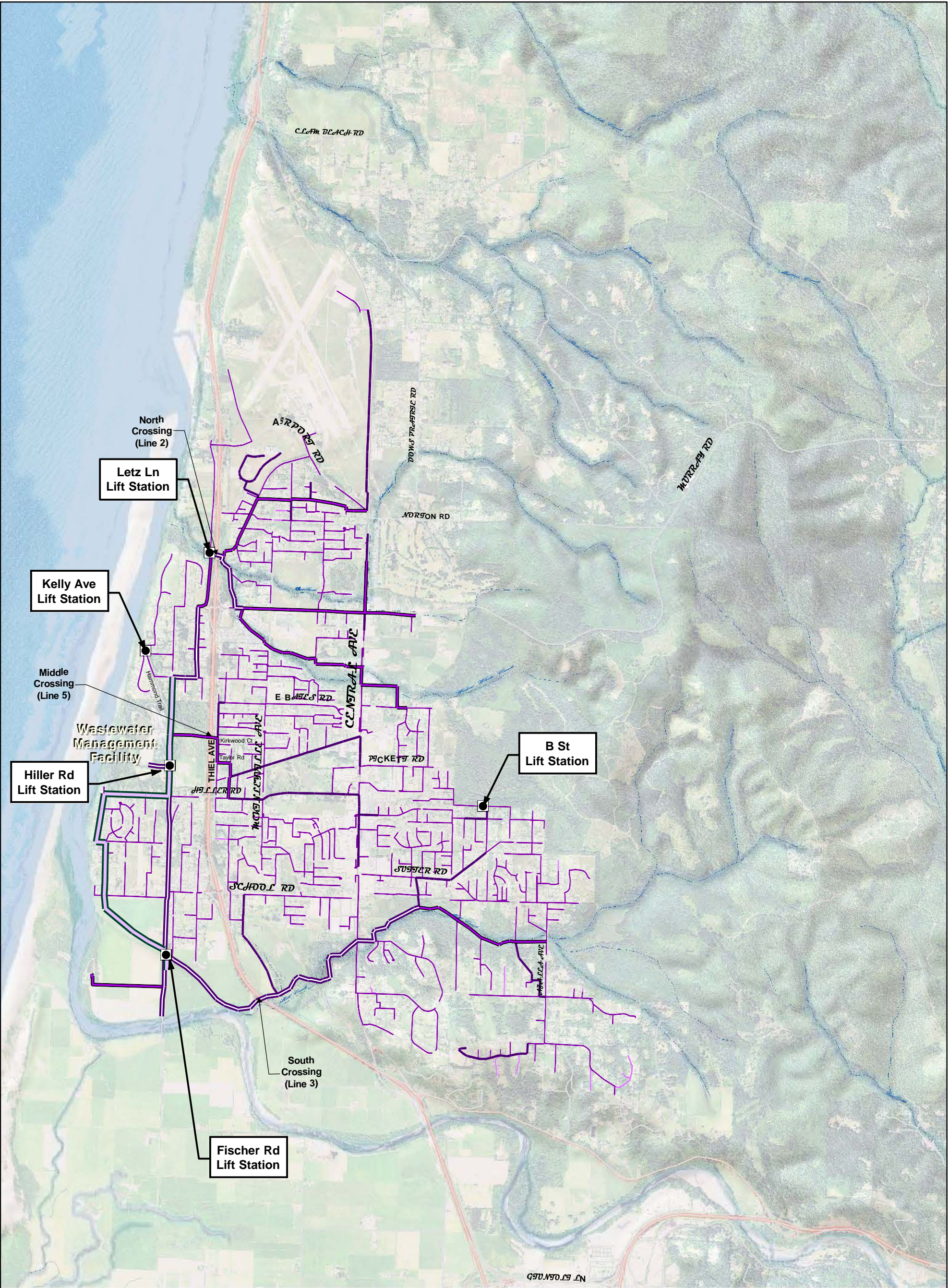
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Revision 1  
Date 17 Oct 2017

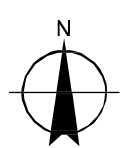
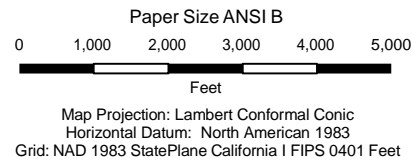
Project Vicinity and Location Map

Figure 1





Sewer Main Size



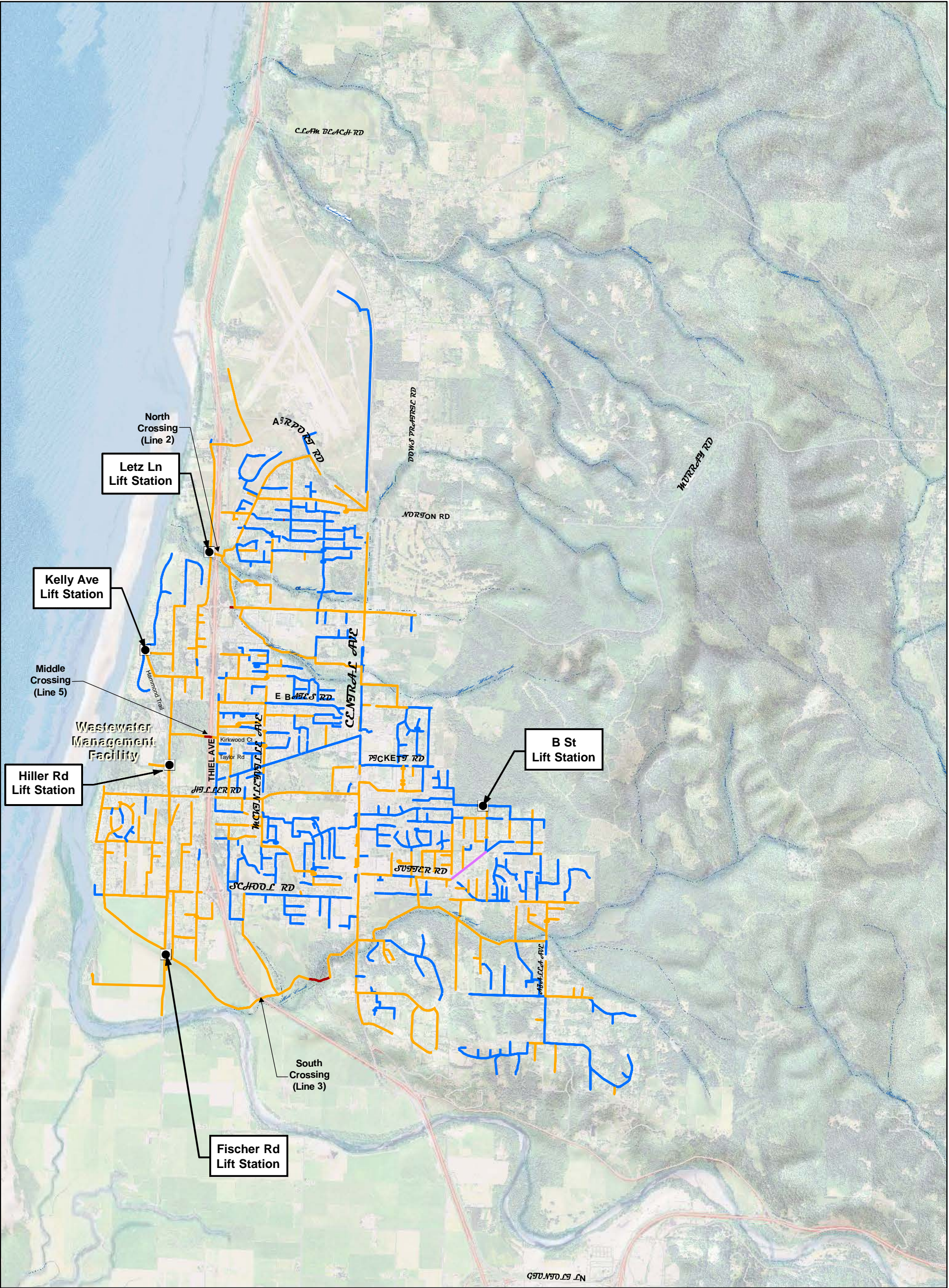
McKinleyville Community Services District  
Sanitary Sewer Main Line Rehabilitation Master Plan (Phase 1)

Job Number | 11125090.03  
Revision | A  
Date | 17 Oct 2017

Sewer System Overview by Pipe Size

Figure 2





Sewer Main Material

- Asbestos Cement

Polyvinyl Chloride

Lift Station

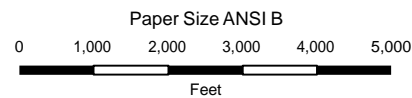
Highway

Other Roads
- Ductile Iron/Steel

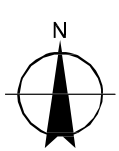
Vitrified Clay Pipe

Creeks

Major Roads



Map Projection: Lambert Conformal Conic  
Horizontal Datum: North American 1983  
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



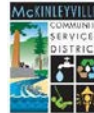
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Job Number	11125090.03
Revision	A
Date	18 Oct 2017

Sewer System Overview by Pipe Material

Figure 3





### 1.3 Summary of Previous Studies and Findings

Elements of the MCSD collection system have been evaluated since the system was originally constructed. This section presents background information, findings, and recommendations from the following recent documents and studies regarding the MCSD collection system:

- Wastewater Facilities Plan, SHN – January 2012
- Sewer Capacity Analysis, MCSD Sewer Collection System, Revision 1, SHN – September 2013
- MCSD Sanitary Sewer Management Plan, Freshwater Environmental Services – January 2014
- McKinleyville Capital Improvement Plan, HSU Student Capstone Project – May 2015
- Water and Sewer Capacity Fee Study, Willdan Financial Services – September 2011
- Sewer Rate Analysis, Willdan Financial Services – May 2015

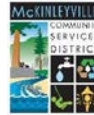
These previous studies are summarized in this report to provide additional context and highlight conclusions that can be drawn from work that has already been done. While more in-depth assessment of the collection system will occur as a part of this Master Plan effort, synthesizing information provided in previous studies is an appropriate way to begin this effort. Recent assessment of the sewer collection system was started with a 2012 Wastewater Facilities Plan summarized in the following section.

#### 1.3.1 Wastewater Facilities Plan, SHN – January 2012

SHN Consulting Engineers & Geologists, Inc. (SHN) prepared a *Wastewater Facilities Plan Administrative Draft* (WWFP) for MCSD in January 2012. A significant portion of the WWFP is focused on the District's wastewater treatment, reclamation, and disposal facilities, none of which are included as a part of this Sanitary Sewer Main Line Replacement and Rehabilitation Master Plan effort. However, the WWFP also discusses population growth forecasts, existing/projected system flows, and critical areas of the sewer collection system that are recommended for upgrades, which are all pertinent to this Master Plan effort.

The WWFP notes that due to regular monitoring and maintenance, the collection system has some of the lowest infiltration and inflow (I/I) rates in Humboldt County. Smoke testing is completed periodically to test for leaks, and the District monitors wet weather flows at various manhole locations each winter to identify areas of excessive I/I.

Collection system flows averaged 0.9 million gallons per day (MGD) and 1.1 MGD in the dry weather (May 15<sup>th</sup> through October) and wet weather (November through May 14<sup>th</sup>) seasons, respectively, during the period of 2003 to 2010. With an expected annual population increase of 1.8% (based on the "alternative growth rate" given in the McKinleyville Community Plan prepared by Humboldt County in 2002), it was predicted that by 2030 the flows will increase to 1.4 MGD and 1.7 MGD in the dry and wet weather seasons, respectively. The peak daily flow for the period of 2003 through 2010 was approximately 2.0 MGD, with the peak daily flow for year 2030 projected to be approximately 3.1 MGD. The peak instantaneous flow (highest sustained hourly flow resulting from a 5-year storm during high groundwater periods), which is used as the basis of design for the required hydraulic capacity of conveyance and treatment system components, was estimated to be 2.5 MGD for 2010 and 3.8 MGD for 2030.



The WWFP discusses the development of the MCSD collection system hydraulic model. The model was under development as of the publish date of the WWFP, and more information on the model and associated results was given in the subsequent *Sewer Capacity Analysis* completed by SHN in September 2013. The *Sewer Capacity Analysis* is summarized in the following section. The model was used during the development of the WWFP as a tool to determine areas in the collection system that are limited in capacity under existing conditions or under projected growth conditions. The model allows for the input of rainfall derived infiltration and inflow (RDII) to account for higher system flows during wet weather periods. The model results indicated that each of the three gravity trunk lines that cross under Highway 101, conveying the majority of the wastewater flows from the east side to the west side of the highway, were able to convey up to the 5-year RDII without surcharging under existing population/flow conditions. The model showed surcharging in Lines 3 (includes the south Highway 101 crossing) and 5 (at the middle Highway 101 crossing) under the 100-year RDII, existing population/flow scenario. Figure 4 shows the line number designations the District uses to identify the different sewer lines in the system.

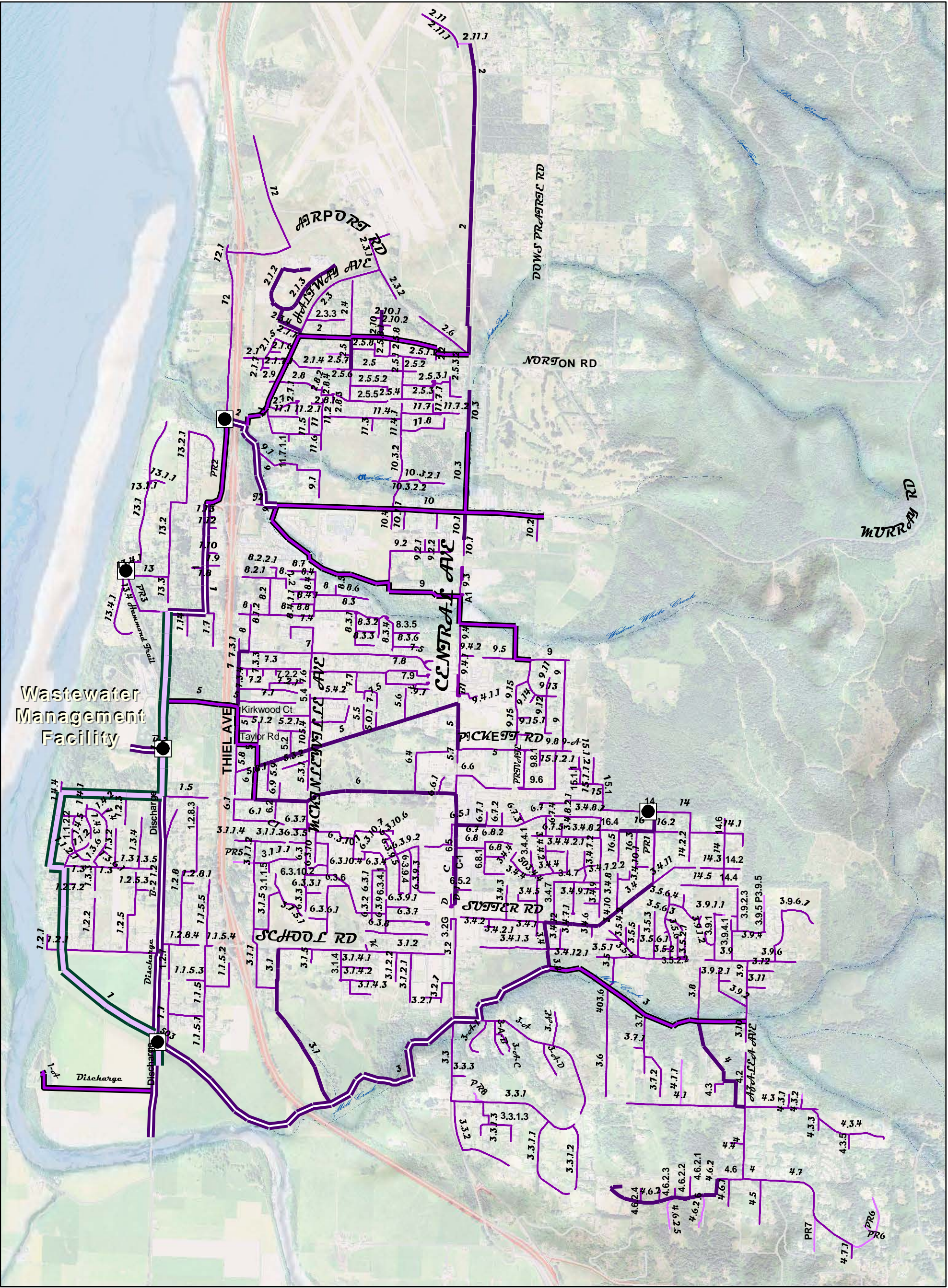
Multiple growth scenarios were presented in the WWFP, based on future development projections provided by Humboldt County. The “Alternative B with Multi-Family (BMID-MF)” scenario was selected to be analyzed using the sewer model, since this growth scenario was most closely aligned with what the population would be in year 2030 under the assumed 1.8% growth rate. Flows in the model were allocated based on a County-provided GIS dataset that included a direct allocation of development by region. Under the BMID-MF scenario, the model showed that the middle crossing would surcharge under dry weather conditions. Both Lines 3 and 5 surcharged under the 5-year RDII event. There was much more extensive surcharging in Lines 3 and 5 in the model under this growth scenario with 100-year RDII conditions.

The WWFP identifies the gravity lines that cross the highway, especially Line 3 (which includes the south Highway 101 crossing) and Line 5 (which includes the middle Highway 101 crossing), as critical areas for upgrades. The WWFP recommends lining the 10-inch asbestos cement (AC) pipes that comprise Line 5 with cured in place pipe (CIPP) and installing a parallel 12-inch pipe to increase capacity. It recommends lining the existing 15-inch Line 3 with CIPP and installing a new parallel 15-inch pipe. Another alternative to these recommended improvements is direct pipe replacement (rather than parallel pipe installation).

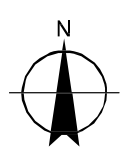
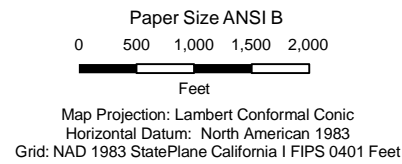
Lastly, the Letz, Hiller, and Fischer lift stations were also recommended for upgrade. Recommended upgrades included replacing the pumps, motors, and heating and ventilation systems, as well as installing new motor control centers, variable frequency drives, programmable logic controllers, new level sensing equipment, and updating the electrical systems to comply with current code requirements. The WWFP also recommends a new generator and automatic transfer switch at the Hiller lift station, which was completed as a part of recent WWMF upgrades (the lift station is tied into the WWMF generator).

The WWFP gives an estimated cost of approximately \$3.4 million for the recommended collection system and lift station improvements, including construction, contingency, engineering, and administration costs.





Sewer Main Size



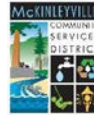
McKinleyville Community Services District  
Sanitary Sewer Main Line Rehabilitation Master Plan (Phase 1)

Job Number 11125090.03  
Revision A  
Date 17 Oct 2017

Sewer System  
Line Number Designations

Figure 4





### 1.3.2 Sewer Capacity Analysis, MCSD Sewer Collection System, Revision 1, SHN – September 2013

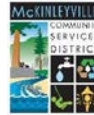
SHN prepared a *Sewer Capacity Analysis* (SCA) for MCSD in September 2013. The SCA presented an analysis of the capacity of the three gravity trunk lines that cross Highway 101, as they are the known limiting segments of the collection system. These three lines are referred to as Line 2 (north crossing), Line 5 (middle crossing), and Line 3 (south crossing). The sanitary sewer model that was developed as a part of the *Wastewater Facilities Plan* was adjusted to reflect verified as-built conditions that were not previously reflected in the model, and then used to perform the necessary modeling for the updated SCA. SHN modeled an existing conditions scenario with no RDII, as well as RDII scenarios that included the 5-year, 25-year, and 100-year, 24-hour events. Pipeline capacity and downstream lift station capacity were both considered in the analysis. Lift station capacity was based on the firm capacity of each respective lift station, which is the capacity of the station under the emergency situation where the largest pump is out of service. The firm capacity for the lift station downstream of the north crossing (Letz lift station) was given as 673 gallons per minute (gpm), while the capacity of the limiting segment of Line 2 was given as 1,484 gpm. Thus, the total flow capacity for Line 2 was set as the firm capacity of the Letz lift station. The firm capacities for the lift stations downstream of Lines 3 and 5 exceeded the total flow capacity of the pipelines themselves. Available flow capacity was determined by subtracting the peak flow rate, based on model results, from the total flow capacity of each segment. A peaking factor of 1.34 was applied as a part of the sanitary time step pattern.

Model results showed that all crossings have capacity to accommodate additional flow beyond the 5-year RDII event. The north crossing (Line 2) does not have enough capacity to accommodate the 25-year RDII event, and the middle and south crossings have additional capacities of 45 and 86 gpm, respectively. None of the crossings have enough capacity to accommodate the 100-year RDII event. However, it should be noted that the modeled peak flow in Line 2 under the 100-year RDII event was given as 794 gpm, which is well under the Line 2 pipe capacity of 1,484 gpm. The 100-year event could also be handled by the Letz lift station if the assumption were not made that the largest pump was out of service. Assuming that all the pumps in the Letz lift station were in service, Line 2 could accommodate both the 25-year and 100-year, 24-hour RDII events.

The SCA recommends that MCSD use the capacity analysis results based on the 25-year, 24-hour RDII scenario for future planning purposes.

### 1.3.3 MCSD Sanitary Sewer Management Plan, Freshwater Environmental Services – January 2014

Freshwater Environmental Services prepared a *Sanitary Sewer Management Plan* (SSMP) for MCSD in January 2014. The SSMP was prepared to meet the Statewide General Waste Discharge Requirements (WDR) for Sanitary Sewer Systems. The WDR defines eleven mandatory SSMP elements and associated monitoring, record keeping, reporting, and public notification requirements, all of which are addressed in the SSMP. The SSMP outlines all sanitary sewer management programs, plans, and expectations of the MCSD. The recommended capacity improvement projects were for the following: Line 5 between manholes (MH) 5-2 and 5-3 (middle crossing), Line 6.3 between MH 6-17 and MH 6-6 (section of pipe along McKinleyville Avenue that runs south from the intersection with Hiller Road for approximately 380 feet), and Line 6 between



MH 6-3 and 6-4 (section of pipe along Hiller Road between Walker Avenue and Taves Avenue). However, these sections of the system (aside from the middle crossing) were not identified as areas of concern in the SHN modeling analyses.

#### 1.3.4 McKinleyville Capital Improvement Plan, HSU Student Capstone Project – May 2015

A group of Humboldt State University (HSU) engineering students prepared the *McKinleyville Capital Improvement Plan* as part of a school project. Among other information and analyses, the report provides recommendations for infrastructure upgrades of MCSD's water distribution and sewer collection systems, preliminary designs for specific projects, and a schedule and estimated costs for systematically replacing the entire sanitary sewer collection and water distribution systems, accounting for expansion of each system to accommodate projected population growth. This report also analyzed how the "full buildout" scenario (developed based on potential rezoning and projected population growth per the Humboldt County General Plan) would affect the capacity and performance of each system.

This report developed design parameters for replacement of the aforementioned, under-capacity Lines 3 (south crossing) and Line 5 (middle crossing). The report recommended replacement of 1,300 feet of Line 3 with 15" high density polyethylene (HDPE) pipe at a slope of 1.8%. The report noted that the portion of new pipe that would be under the highway would need to be inside a 250-foot-long 21" steel casing to comply with Caltrans requirements. The report recommended replacing the southern crossing with 24" HDPE pipe at the original slope. The 250-foot portion of this new pipe that went under the highway would be inside a 30" steel casing. The report notes that even with this replacement, Line 5 would still surcharge near the lift station west of the highway (Hiller lift station), likely due to undersized pumps in the lift station.

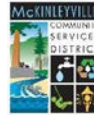
The recommended replacement schedule for the entire collection system was broken into two sections, replacing 6,500 ft/year until 2060 and then 4,200 ft/year until 2096. The total present worth cost for replacement of the sewer collection system was given as \$24 million.

Model results showed that the current collection system is not sufficient to accommodate the "full buildout" scenario, which included RDII from a 25-year design storm. The largest problem was surcharging at the south Highway 101 crossing, and model results showed surcharging in the area of the middle crossing as well. The report notes that the lift station downstream of the south crossing (Fischer Road lift station) is undersized to accommodate this scenario, and that a 1,500 gpm increase in capacity is required to prevent surcharging in the south crossing.

#### 1.3.5 Water and Sewer Capacity Fee Study, Willdan Financial Services – September 2011

Willdan Financial Services (Willdan) prepared a *Water and Sewer Capacity Fee Study* for MCSD in September 2011. Capacity fees are one-time charges that are collected as a condition of establishing a connection to the District's systems. These fees are proportional and related to the capital facility demands of new development. Capacity fees are collected separately from connection fees, which are used to offset the costs associated with the physical connection to the utility. Willdan recommended a sewer capacity fee of \$4,497 per equivalent residential unit (ERU),





which is defined as any single-family residential structure. This was an increase from the previously existing sewer capacity fee of \$1,761 per ERU, which was established in 1999.

#### 1.3.6 Sewer Rate Analysis, Willdan Financial Services – May 2015

Willdan prepared a *Sewer Rate Analysis* (Rate Analysis) for MCSD in May 2015. The Rate Analysis was largely prepared to propose an increased rate structure to ensure sufficient funding to repay debt for the construction of upgrades to the WWMF, as well as to pay for projected increased operation costs after construction. The existing sewer charges for single family residences at the time the Rate Analysis was prepared (fiscal year 2014/2015) included a fixed monthly charge of \$17.57 and a variable monthly charge of \$1.49 per hundred cubic feet (HCF) of water used. The recommended sewer rates increase annually through fiscal year 2019/20. The recommended charges for fiscal year 2019/20 include monthly fixed charge of \$33.94 and a variable charge of \$2.84 per HCF of water used.

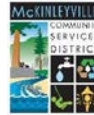
### 1.4 Anticipated Growth

It is important to consider future demand when planning future rehabilitation and replacement of sewer main pipelines. Appropriate growth considerations can be used to determine if a pipe should be replaced in kind, or if the size should be increased to provide additional capacity.

The 2002 McKinleyville Community Plan (a subsection of the Humboldt County General Plan) notes that the most probable growth projection for McKinleyville was 1.8%, based on the growth trends at the time. The McKinleyville Community Plan has not since been updated.

McKinleyville had a population of 13,599 in 2000 (based on the 2000 census) and 15,177 in 2010 (based on the 2010 census). Based on data from the American Community Survey (ACS) 5-year Estimate performed by the United States Census Bureau, McKinleyville had a population of 16,291 in 2015. Using these figures, population growth from 2000 to 2015 was approximately 1.21% per annum, and growth from 2010 to 2015 was approximately 1.43% per annum. The District has indicated that they would consider using a rate of 1% per annum for growth projections when considering future development potential within District service boundaries.

The only major subdivision development that has occurred since 2010 was the Central Estates Subdivision. Any population increase that resulted from this subdivision likely would have been captured in the 2015 ACS 5-year Estimate, and the contributing flows from this subdivision were also included in the sewer modeling that was performed by SHN (as presented in the 2012 *Wastewater Facilities Plan* and the 2013 *Sewer Capacity Analysis*). Additionally, the Humboldt County General Plan has not been updated since the sewer modeling was performed. Modeling scenarios described in the *Wastewater Facilities Plan* included projected flows for 2030 that were developed based on a 1.8% annual increase in population, which is conservative when considering the recent population growth trends described above.



## 2. Preliminary Needs Assessment

A preliminary needs assessment was completed based on a review of the existing documents discussed in Section 1.3, data provided by the District, and discussions with District staff. The completion of this preliminary needs assessment is a critical step in identifying critical issues in the system. The preliminary needs assessment focused on the following major areas of interest:

- Issues related to capacity
- Areas that have required excessive maintenance in the past
- Areas that could foreseeably require excessive maintenance or difficult repairs in the future

This section also presents an analysis of the existing system with respect to considerations for replacement, including the following:

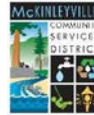
- A tabulation of pipe age, material, and diameter
- Information on material life for various pipe materials
- A discussion of other risk-based factors that may influence when replacement should be considered for specific sections or system components

It should be noted that no flow monitoring or other field studies were performed as a part of this Phase 1 effort. Data gaps identified through this Phase 1 effort will be analyzed further in Phases 2 or 3 of the master planning process. Additionally, Phase 1 did not include any video surveys, field testing, or physical evaluation of the pipe, appurtenances, pump station components, soil conditions (including pH), or cathodic protection. More detailed evaluations will be completed in future Phases as warranted. A more in-depth analysis of selected critical system components and proposed major component replacement scheduling is planned for Phase 2 of this master planning effort.

### 2.1 Issues Related to Capacity

SHN developed a model of the District's sanitary sewer system using Autodesk Storm & Sanitary Analysis software. This model was used in the *Wastewater Facilities Plan* (SHN, 2012) to analyze capacity in the system under dry weather and wet weather scenarios for both existing population and projected population conditions (see Section 1.3.1 for a more in-depth summary of the *Wastewater Facilities Plan*). The BMID-MF population scenario (development projection provided by Humboldt County that most closely aligned with the assumed 1.8% growth rate) was input into the model to simulate conditions for the year 2030. Rain-derived infiltration and inflow (RDII) was added into the model under each population condition for 5-year and 100-year, 24-hour storm scenarios. As shown on Figures 2 and 3, there are three gravity trunk lines that cross under Highway 101 that convey the majority of the sanitary sewer system flows from the east side of Highway 101 to the west side, where the wastewater management facility is located. Model results do not indicate any capacity issues with the north crossing pipeline (Line 2). The *Wastewater Facilities Plan* presented the following results regarding the middle crossing (Line 5) and south crossing (Line 3):

- Each crossing was able to convey up to the 5-year RDII without surcharging under existing population conditions.



- Each crossing showed surcharging during the 100-year RDII event under existing population conditions.
- The middle crossing showed surcharging under the BMID-MF population scenario with dry weather conditions. The south crossing did not surcharge under this model scenario.
- Both crossings showed some surcharging during the 5-year RDII event under the BMID-MF population scenario.
- Extensive surcharging occurred in both crossings during the 100-year RDII event under the BMID-MF population scenario.

SHN performed additional modeling of the sanitary sewer system in 2013, and the results were presented in their *Sewer Capacity Analysis* (see Section 1.3.2 for a more in-depth summary of the *Sewer Capacity Analysis*). The model was updated slightly from 2012 to 2013 to reflect verified as-built conditions that were not previously reflected in the model results summarized in the *Wastewater Facilities Plan*. SHN modeled dry weather, 5-year, 25-year, and 100-year, 24-hour RDII events under existing population conditions and summarized the results in the *Sewer Capacity Analysis*. The key focus of the *Sewer Capacity Analysis* was to analyze the capacity of the three Highway 101 crossings (north, middle, and south). Model results showed that the north crossing pipeline has ample capacity to convey flows up through the 100-year, 24-hour RDII event. The following results were given regarding the middle and south crossings:

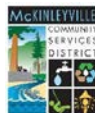
- Both crossings can convey up through the 25-year, 24-hour RDII event. However, there is not much capacity remaining in either crossing under this scenario (45 gpm of remaining capacity for the middle crossing and 86 gpm of remaining capacity for the south crossing).
- Both crossings surcharged under the 100-year RDII event.

The results from previous modeling show that the areas of the MCSD collection system that have critical capacity issues are the middle and south Highway 101 crossings. The District has also identified capacity issues at both the Railroad Drive/Spruce Avenue and Hiller Road/Thiel Avenue intersections, though the issues at these locations are not made apparent in the model results. Field testing and physical evaluations at these locations may occur under Phase 2 of this effort.

The sanitary sewer model did not require updates for this Phase 1 Master Plan effort, as SHN ran model scenarios that accounted for conservative population growth projections, and no significant developments have occurred in McKinleyville since the model was developed.

## 2.2 Potential Areas of Excessive Maintenance

The MCSD sanitary sewer collection system is generally free of excessive maintenance issues. However, there have been main line patches and manhole repairs over the years that have been made to minimize infiltration and inflow (I&I). Additionally, the asbestos cement (AC) main on Central Avenue from Sutter Road to Hiller Road has become severely corroded. Bacteria in sanitary sewer pipes convert sulfates in raw sewage into sulfides. When sulfides mix with the liquid, hydrogen sulfide (H<sub>2</sub>S) gas is released into the upper portion of the pipe. This gas then comes into contact with additional bacteria at the top of the pipe that converts the hydrogen sulfide gas to sulfuric acid, which is particularly corrosive to AC pipe. The joints of the main along Central Avenue



have corroded away to the point where the gaskets at the joints are actually exposed. While this is not a severe maintenance issue yet, if the problem is not addressed in the near term (next approximately 5-10 years), this section of pipe could present serious issues with I&I and pipe failure. Physical assessment of this section of pipe should occur in the near term to determine the urgency for replacement.

## 2.3 Analysis of Existing System Attributes and Replacement Considerations

Prior to direct physical assessment, age and material can both be preliminary indicators of the condition of various sections of the District's collection system piping. This section provides a summary of the District's existing sewer mains with regard to age, size, and material, and outlines the implications of these considerations. This section also discusses special replacement considerations for key areas of the collection system.

As noted in Section 1.2, the District maintains approximately 73 miles of sewer mains (including approximately 1.7 miles of force mains). Table 1 provides a tabulation of system pipe lengths by both nominal diameter and material type based on information gathered from the District's existing geographic information system (GIS) data.

**Table 1: Existing Collection System Pipe Lengths by Diameter and Material**

Diameter (in)	Length (ft)					Total
	PVC	AC	DIP	VCP	Steel	
1.5	397	-	-	-	-	397
2	6,041	101	-	-	-	6,142
3	-	566	-	-	-	566
4	-	1,280	-	-	-	1,280
6	155,351	115,487	372	-	-	271,210
8	19,689	14,632	-	1,255	-	35,576
10	-	16,744	438	-	-	17,182
12	-	18,594	-	-	-	18,594
15	-	10,860	-	-	-	10,860
16	-	7,575	165	-	-	7,740
18	-	2,674	-	-	105	2,779
21	-	1,918	-	-	-	1,918
24	-	9,332	-	-	-	9,332
<b>Total</b>	<b>181,478</b>	<b>199,763</b>	<b>975</b>	<b>1,255</b>	<b>105</b>	<b>383,576</b>

An age profile of the collection system has also been developed that includes a tabulation of system pipe lengths by age and material based on an Excel spreadsheet provided by the District<sup>1</sup> (Table 2). For the details of pipe age, material, and size, see Appendix A.

<sup>1</sup> Note that there are minor inconsistencies in the footage given in the Excel spreadsheet provided by the District compared to data in the District's GIS. There are no pipe age data or data pertaining to whether a section of pipe is gravity or force main in the District's GIS.

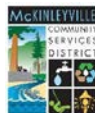


Table 2: Existing Collection System Pipe Lengths by Age and Material

Age (years)	Length (ft)						Total
	PVC	AC	DIP	VCP	Steel	Force Main (PVC and AC)	
1-9	10,540	-114 <sup>2</sup>	36	-	-	-	10,462
10-19	42,009	-	40	-	-	519	42,568
20-29	36,627	10,852	425	-	-	2,570	50,474
30-39	15,740	9,780	-	-	-	1,547	27,067
40-41	22,610	192,553	563	1,012	135	4,100	220,973
<b>Total</b>	<b>127,526</b>	<b>213,071</b>	<b>1,064</b>	<b>1,012</b>	<b>135</b>	<b>8,736</b>	<b>351,544</b>

As previously mentioned, no physical evaluations of the existing pipe were performed for this Phase of the master plan process. Standard literature values suggest the following life expectancies for various pipe materials:

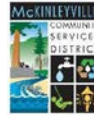
- Polyvinyl Chloride (PVC): generally 50-70 years, with a lifetime potential of 100+ years
- Asbestos Cement (AC): 50-70 years
- Ductile Iron Pipe (DIP): 75-100 years
- Vitrified Clay Pipe (VCP): 100+ years
- Steel: 40-70+ years

However, it should be noted that pipe in the District's system could feasibly have a lifetime that is longer than these literature values suggest. Literature values are often based on economic considerations for depreciation or general replacement schedules. Actual experience of wastewater agencies suggest that under the right conditions, wastewater collection elements can have a longer actual service life than a typical literature value for planning purposes. The actual service life will depend on many factors.

Eventually the various elements of the sewer collection system piping will reach the end of their practical useful life and will need to be replaced to continue to provide service. Not all piping will warrant replacement at the same time. When and where to begin depends on multiple factors, including pipe material, installation conditions, the actual condition of the pipe (which is pending physical evaluation in Phase 2), service characteristics, ability to meet hydraulic needs, risks of failure, etc.

The vast majority of the collection system is either PVC or AC. With nearly 200,000 feet of AC pipe at over 40 years old, and considering AC pipe's vulnerability to corrosion when used in a sanitary sewer system, it is critical to begin a program of assessing and systematically replacing the piping in the collection system. The older PVC and DIP will likely remain in serviceable condition for another 20 to 60+ years (pending physical evaluation). More recently installed PVC and DIP could potentially last 100 more years. However, it should be noted that there is no cathodic protection in place to protect the District's DIP mains from corrosion. DIP generally corrodes over time without

<sup>2</sup> This negative footage accounts for 114 feet of AC that was replaced with 95 feet of PVC as a part of the Ocean West Sewer Realignment.



cathodic protection, but not all soil conditions are corrosive to DIP. Although corrosion is likely occurring on the DIP in the District's system, the corrosion rate may be relatively low, and a cathodic protection system may not be cost effective. Field testing during Phase 2 can be completed to help evaluate the condition of the variety of piping within the system and provide further insights into developing a replacement schedule.

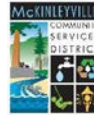
There are also very small amounts of VCP and steel pipe in the District's collection system. VCP is known to be strong and have a very long lifetime, and it is also highly resistant to corrosion. However, the VCP in the MCSD system is over 40 years old, and it could be prudent to physically assess some of this pipe in Phase 2 to gain a better understanding of its condition. The steel pipe in the system could be nearing the end of its life in the next 10 to 30 years, especially when considering electrochemical corrosion due to the lack of cathodic protection in the system and corrosion due to sulfuric acid. The steel pipe in the system should also be physically assessed in Phase 2.

Approximately half of the force mains in the system are over 40 years old, and the majority of the force mains are AC pipe. There are five sewer lift stations in the MCSD system (B Street, Fischer Road, Letz Lane, Kelly Avenue, and Hiller Road lift stations; see Figures 2 and 3). Four of them (Fischer, Letz, Kelly, and Hiller) are on the west side of Highway 101, and all of the wastewater flow in the system is ultimately routed through these four lift stations. If one of the force mains downstream of these stations were to fail, it would pose a very serious issue for the District. User flows would of course continue to be contributed to the system, and it would be very difficult and time-consuming to bypass flows around the failed force main. The lift station associated with the failed force main would likely overflow with sewage within hours, which would also cause backup within the pipe network. This could lead to serious environmental impacts as well as fines imposed on the District. Due to the serious repercussions of a failed force main in this system, it is critical to physically assess the condition of these force mains as a part of the Phase 2 effort to determine when it will be appropriate to begin planning for replacement.

Another key consideration is that it would take a considerable amount of planning to replace the pipeline along Central Avenue. This is the busiest street in McKinleyville, and due to the high volume of traffic on Central Avenue, repairing a failed pipeline in this area would not be a straightforward task. This is another area where it is critical to physically assess the condition of the pipe and identify when replacement will be required, especially given the corrosion of this section of pipe (discussed in Section 2.2). With ample planning time, this section of pipeline can be replaced with minimal disruption. According to the District's GIS data, the vast majority of the water mains and sewer mains along Central Avenue are both on the east side of the road. When it is determined that the pipe for one of these systems should be replaced, it would be prudent to replace both at the same time, thereby minimizing the overall disruption to Central Avenue traffic, and minimizing the costs for replacement through this section for each system.

According to the District's GIS, there are eleven locations where sewer main lines cross streams. These crossings are generally within constantly wet soil, making them somewhat less stable than other sections of pipe in the system. A failure in one of these sections could cause a major release of raw sewage to a stream, which could have adverse effects on sensitive habitat and would likely result in fines imposed on the District. Additionally, a repair of a failure of this type would be very difficult and time consuming, as it is challenging from both permitting and construction standpoints





to put in a new pipe under a stream. Particular attention should be given to these areas in Phase 2 of this Master Plan effort.

A final important consideration to make is that there are three locations where sewer mains in the system cross beneath Highway 101 (the north, middle, and south crossings). As discussed earlier, these three crossings ultimately convey the majority of the flows in the sewer system from the east side of Highway 101 to the west side. In addition to the capacity issues associated with the middle and south crossings, pipe failure in one of these crossings would be extremely difficult to repair. It would likely take months to repair one of these crossings, and a significant portion of overall system flows would need to be bypassed until the repair was made. While it is recommended that the middle crossing and south crossing both be upgraded/replaced in the near term, it is also critical to physically assess the north crossing to gain a better understanding of the condition of this pipe.

### 3. Long-Term Replacement Analysis and Near-Term Rehabilitation Plan

This section presents a long-term replacement analysis for systematically replacing the District's entire sanitary sewer collection system and a near-term (next 5 to 10 years) rehabilitation plan that includes an analysis of high-priority projects. A high-level, Class 4 AACE International construction cost estimate (+/- 20%) was developed for the long-term replacement analysis. Using the final estimated costs, financial analyses based on replacement schedules of 50, 75, and 100 years are given in Section 4. The near-term rehabilitation plan includes a discussion of high-priority projects, as well as preliminary design alternatives and associated cost estimates for addressing the issues with the middle crossing.

#### 3.1 Long-Term Replacement Cost Analysis

Phase 1 includes a high-level assessment of the District's collection system for use in initial planning for replacement, rehabilitation, and upgrades to the system. Cost estimates are presented in an effort to understand what the overall cost would be to systematically replace the entire system, and to determine what the overall impact to user rates would be. The intent is to use this information as a starting point for Phase 2 of the Master Plan effort. Phase 2 will consist of more detailed cost estimates and more detailed scheduling/phasing for the replacement of the District's sewer mains.

The replacement cost for the majority of the collection system (everything except the Highway 101 crossings) is summarized in Table 3 below. A key assumption was that all of the piping in the system would be replaced within new alignments to allow the existing pipe to remain in service during construction.

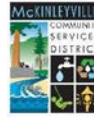
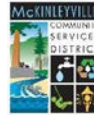


Table 3: Opinion of Probable Cost for Replacement of Sewer Mains and Manholes in the Collection System except the Highway 101 Crossings

Item	Description	Units	Quantity	Unit Cost	Total Cost
1	Mobilization/Demobilization	LS	1	\$8,000,000	\$8,000,000
2	Construction Staking	LS	1	\$690,000	\$690,000
3	Traffic Control	LS	1	\$3,758,000	\$3,758,000
4	Erosion and Sediment Control, Revegetation	LS	1	\$1,600,000	\$1,600,000
5	4-inch PVC <sup>1</sup>	LF	8,385	\$90	\$755,000
6	6-inch PVC <sup>1</sup>	LF	271,209	\$100	\$27,121,000
7	8-inch PVC <sup>1</sup>	LF	35,575	\$105	\$3,735,000
8	10-inch PVC <sup>1</sup>	LF	17,181	\$110	\$1,890,000
9	12-inch PVC <sup>1</sup>	LF	18,594	\$115	\$2,138,000
10	16-inch PVC <sup>1</sup>	LF	18,602	\$125	\$2,325,000
11	18-inch PVC <sup>1</sup>	LF	2,779	\$135	\$375,000
12	24-inch PVC <sup>1</sup>	LF	11,250	\$160	\$1,800,000
13	Excavation (4"-12" Pipe)	CY	248,853	\$10	\$2,489,000
14	Excavation (14"-24" Pipe)	CY	56,305	\$12	\$676,000
15	Backfill (including Compaction, within Roadway)	CY	261,814	\$40	\$10,473,000
16	Backfill (including Compaction, outside Roadway)	CY	36,419	\$22	\$801,000
17	Hauling off Excavated Material	CY	141,881	\$10	\$1,419,000
18	Paving for 2"-6" Pipe Trenches	LF	275,184	\$20	\$5,504,000
19	Paving for 8"-12" Pipe Trenches	LF	55,542	\$25	\$1,389,000
20	Paving for 14"-18" Pipe Trenches	LF	13,617	\$30	\$409,000
21	Paving for 24" Pipe Trenches	LF	7,948	\$35	\$278,000
22	Manholes (up to 10 Feet Deep)	EA	379	\$7,000	\$2,653,000
23	Manholes (10-20 Feet Deep)	EA	595	\$10,000	\$5,950,000
24	Manholes (20-30 Feet Deep)	EA	50	\$13,000	\$650,000
25	Stream Crossings	EA	11	\$200,000	\$2,200,000
<b>Construction Subtotal</b>					<b>\$89,078,000</b>
Contingency (20%)					\$17,816,000
<b>Opinion of Probable Construction Cost</b>					<b>\$106,894,000</b>
Permitting (10%)					\$10,689,000
Engineering Design (10%)					\$10,689,000
Construction Management (10%)					\$10,689,000
<b>Total Opinion of Probable Cost (nearest million)</b>					<b>\$139,000,000</b>

<sup>1</sup> Includes cost for pipe material and installation only (does not include cost for excavation, backfill, paving, etc.)





The quantities/costs given in Table 3 were determined as follows:

- The District's GIS was used to determine the following quantities: length of pipe within and outside of roadways, manholes, and stream crossings.
- The District's GIS was used to determine depths of pipe and manholes.
- Mobilization/demobilization costs were assumed to be approximately 10% of the construction subtotal.
- Construction staking was estimated as \$450 per hour for a crew staking 2,000 feet per 8-hour day.
- Traffic control was estimated as \$400 per hour for a crew, with 300 feet of pipe installed per 8-hour day. This was calculated for only the amount of pipe that would be installed within a roadway.
- Erosion and sediment control was assumed to be approximately 2% of the construction subtotal.
- Costs for the rest of the construction items were based on figures from recently bid construction projects and engineering judgment.
- 4-inch pipe would be used to replace all existing 1.5-, 2-, and 3-inch pipe in the collection system.
- 16-inch pipe would be used to replace the existing 15-inch pipe in the system.
- 24-inch pipe would be used to replace the existing 21-inch pipe in the system.
- Excavation and backfill quantities were calculated based on average pipe depths in the system, and assuming that trenches would be at least one foot wider than the corresponding pipe size. Backfill volume calculations included considerations for the volume occupied by the new pipe.
- It was assumed that 50% of excavated material would be suitable for reuse as backfill within a roadway, 80% of excavated material would be suitable for reuse in sections outside of a roadway, and that fill would be imported to make up the difference.
- Paving costs were only included for sections where there is pipe within a roadway.
- Paving unit costs were determined based on the width of the trench required for installation of various sizes of pipe.
- Permitting, engineering design, and construction management percentage values were based on engineering judgment and experience from previously completed similar projects.

Costs for alternatives that would address the middle crossing issue are developed in Section 3.2.1. The more expensive alternative (auger boring a new parallel line) would cost approximately \$1,000,000 for the middle crossing (see Table 6 for more detail). While costs have not been developed specifically for the north and south crossings, it is reasonable to assume that installing parallel pipes at these locations would cost roughly the same amount as for the middle crossing. Given this, the cost estimate for the replacement of the entire collection system, including all three highway crossings, is given in Table 4.

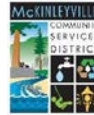


Table 4: Total Opinion of Probable Cost for Replacement of the Collection System Sewer Mains and Manholes

Item	Description	Total Cost
1	Collection System Main Replacement	\$139,000,000
2	Highway Crossings (North, Middle, and South)	\$ 3,000,000
<b>Total Opinion of Probable Cost</b>		<b>\$142,000,000</b>

The total Class 4 AACE International construction cost estimate for replacing the entire sanitary sewer collection system is \$142 million in today's dollars.

### 3.2 Near-Term Rehabilitation Plan

In addition to analyzing considerations for the long-term systematic replacement of all the pipes and manholes in the sewer collection system, it is also essential to determine areas of the system with critical issues that need to be addressed in the near term. This section includes an analysis of potential near-term projects that have been previously identified in this document, as well as schedule considerations and cost information for these projects. An alternatives analysis and preliminary design are presented for addressing the issues associated with the middle Highway 101 crossing. Other areas of the collection system that are discussed in this section include the south Highway 101 crossing, the Central Avenue main (from Sutter Road to Hiller Road), and the force mains in the system.

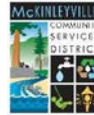
#### 3.2.1 Middle Highway 101 Crossing

One of the critical areas of the collection system that has issues that will need to be addressed within the next approximately 5 to 10 years is the middle Highway 101 undercrossing (middle crossing). This is the highest priority capital project for the District's collection system. The middle crossing is a portion of Line 5 that crosses under the highway near Thiel Avenue just north of Kirkwood Court and ultimately conveys flow to the Hiller lift station (see Figures 2 and 3). This crossing consists of a 10-inch diameter DIP gravity sewer main that is encased in a 21-inch diameter, 215-foot-long steel casing. The District has been aware of capacity issues with this middle crossing for many years. The capacity issues with this crossing are discussed in Sections 1.3.1, 1.3.2, and 2.1.

This section presents preliminary concept designs for two alternatives to resolve the flow constriction issues at this location:

1. Direct replacement of the pipe within the existing casing (Section 3.2.1.1; Figure 5).
2. Auger boring a new parallel pipe (Section 3.2.1.2, Figure 6).

District staff excavated and exposed the existing pipe and casing on the west side of the crossing near MH 5-2 on July 24, 2017. They uncovered what appears to be 10-inch DIP coming out of a 21-inch steel casing, while the 1976 construction plans show that the middle crossing pipe is 10-inch AC. There was a chunk of concrete poured at the edge of the casing that was likely intended to function as the seal for the casing (the plans show a ¼" steel plate being used as a seal). The DIP appeared to be resting on the bottom of the casing, meaning that there might not be any



centralizers or skids within the casing, which is also contrary to what is shown on the construction plans. The edge of the casing was approximately 9.5 feet from the center of MH 5-2, and the top of the DIP was approximately 9.5 feet below the ground surface.

It should be noted that the preliminary designs presented herein would solely resolve the anticipated flow constrictions in the section of pipe underneath the highway, between MH 5-3 and MH 5-2. Model results showed that under projected growth conditions and with RDII from a 5-year, 24-hour storm, there will be capacity issues upstream from the middle crossing, southward along Thiel Avenue to MH 5-4A (at Kirkwood Court). Under projected conditions and with RDII from a 100-year, 24-hour storm, the capacity issues extend southward along Thiel Avenue to MH 5-6 (which is directly west of the end of Taylor Road), as well as downstream of the middle crossing (westward) to the junction with the Hammond Trail. It would be prudent to analyze these sections of pipe further and determine if it would be appropriate to upgrade these sections concurrently with the middle crossing work, thereby addressing all the issues in the area at the same time and minimizing costs to the District.

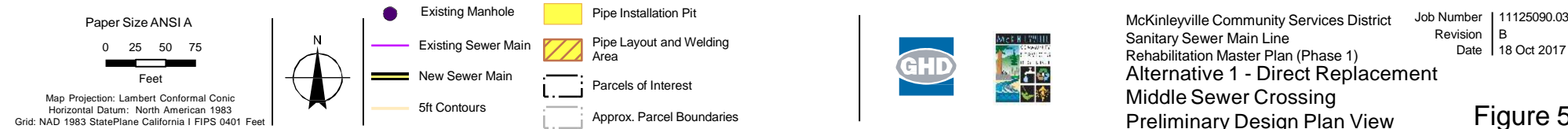
#### 3.2.1.1 **Alternative 1 – Direct Replacement within Existing Casing**

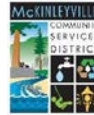
One alternative for upgrading the middle crossing is direct replacement of the existing pipe with new pipe within the existing casing (see Figure 5). Because the existing steel casing at the middle crossing is 21 inches in diameter and the existing DIP is 10 inches in diameter (according to the 1976 construction plans), there is space available to install a new, larger pipe within the existing casing. High-density polyethylene (HDPE) is likely the pipe material that would be used to replace the existing pipe. HDPE is flexible and fusible, and the approximately 215-foot length of pipe that would be required could be fused together above ground and pulled through the existing casing. The existing DIP would need to be either removed prior to installing the new HDPE or burst in place while simultaneously pulling through the new HDPE.

Pipe bursting is a trenchless method of pipe replacement that uses a pneumatic, hydraulic, or static pulled bursting head to break up the old pipe while simultaneously pulling through the prefabricated, fused new pipe. Alternatively, if the existing pipe were removed prior to installing the new pipe, it would be cut into 10- to 20-foot sections as it was being pulled out. Because there is limited space within the existing casing, and because there is potential for skids/centralizers to be present within the casing, it is recommended to remove the existing components present inside the casing prior to pulling the new pipe through, rather than bursting the existing pipe in place.

Two to four inches of clearance from the casing will be required all around the new pipe, so a 16-inch outside diameter (OD) pipe is the largest pipe that can be pulled through the existing 21-inch casing and is the recommended pipe size for this alternative. Because this is a gravity main, thin-walled HDPE (DR 32.5) could potentially be used. However, to be conservative, it was assumed for this analysis that slightly thicker-walled DR 17 16-inch OD HDPE would be required, which has an inside diameter (ID) of approximately 14 inches. Upon further analysis of the existing conditions, it could be determined that a 14-inch OD pipe would be the largest that could be pulled through the existing casing.







A hydraulic analysis using the Chezy-Manning equation was performed to determine the capacity of the existing pipe and what the capacity would be for other sizes of new pipe. The full flow capacity of the existing 10-inch pipe was calculated to be approximately 573 gpm, assuming the existing pipe was installed at a slope of 0.45% (as shown on the construction plans), has an ID of 10 inches, and has a Manning's roughness coefficient of 0.015. The calculated capacity of 573 gpm matches the capacity that was given in SHN's *Sewer Capacity Analysis*. Using the same methodology, estimated capacities of two different sizes of new DR 17 HDPE were calculated:

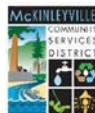
- 16-inch (nominal, OD) DR 17 HDPE has an ID of 14.0 inches. At a slope of 0.45%, and assuming a Manning's roughness coefficient of 0.013 (which is conservative), the full flow capacity would be approximately 1,620 gpm.
- 14-inch (nominal, OD) DR 17 HDPE has an ID of approximately 12.2 inches. At a slope of 0.45%, and assuming a Manning's roughness coefficient of 0.013 (which is conservative), the full flow capacity would be approximately 1,120 gpm.

The *Sewer Capacity Analysis* notes that under existing population conditions with RDII from a 100-year, 24-hour storm, the peak flow at the middle crossing would be 580 gpm. At the existing slope, 16-inch OD DR 17 HDPE would be able to convey almost triple this flow, and 14-inch OD DR 17 HDPE would be able to convey almost double. Either size pipe would be able to accommodate flows under projected growth conditions with RDII from extreme storm events. Because the cost increase from using 14-inch to 16-inch HDPE would be minimal, it is recommended to use 16-inch for this project to achieve the maximum capacity possible.

Pits will be required on the entry and exit sides of the highway to allow for access to the casing and existing pipe, as well as to allow for the new pipe to be pulled through the casing. The entry pit is on the side where the new pipe will enter the casing. It will have a mild slope to safely lead the new pipe down into the casing without overstressing and damaging the new pipe. The exit pit is where the majority of the equipment will be staged and where the majority of the construction operations will occur. For this project, the exit pit would be on the west side of the highway on District property. There is plenty of staging area on this side, and it is farther away from residences, so disturbance due to construction traffic and noise would be less of an issue. The HDPE would be staged and fused on the entry side. Humboldt County has a drainage right-of-way on the east side of the highway, west of Thiel Avenue. The pipe staging area would begin within this right-of-way, go across Thiel Avenue (with a temporary ramp built over the pipe to allow traffic to pass over), and then into a narrow parcel owned by Humboldt County.

Construction would be sequenced so that the length of time for bypassing flows would be kept to a minimum. Entry and exit pits would be excavated around MH 5-2 and MH 5-3, new HDPE pipe would be staged and fused, and a system for bypassing flows would be set up, all while keeping the existing middle crossing in service. Flow bypassing would begin after all of the preparation work for the pipe replacement is completed. Flows would be bypassed from MH 5-4 to MH 5-1 using pumps and a temporary hose or solid-walled PVC pipe. The bypass pipe would lay across Thiel Avenue and run through an existing large storm drain culvert under Highway 101 to the west side of the highway and to MH 5-1.

After all of the preparation work is complete and the system has been set up to bypass flows, the existing pipe would be cut at each end of each manhole (manholes 5-2 and 5-3), and the existing



manholes would be removed. The existing pipe would then be removed from the casing. After this is accomplished, the new pipe would be pulled through the casing, new manholes would be set at each end of the crossing, and the new pipe and existing pipe would be connected to each manhole. It is anticipated that flows would need to be bypassed for four days while this work was occurring.

### 3.2.1.1.1 **Cost Estimate**

A cost estimate has been prepared for Alternative 1 and is presented in Table 5. Costs were based on figures from recently bid construction projects and engineering judgment.

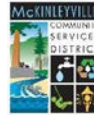
**Table 5: Opinion of Probable Cost to Replace the Middle Highway 101 Crossing Pipe within the Existing Casing**

Item	Description	Units	Quantity	Unit Cost	Total Cost
1	Mobilization/Demobilization	LS	1	\$70,000	\$70,000
2	Clearing and Grubbing	LS	1	\$10,000	\$10,000
3	Erosion and Sediment Control	LS	1	\$15,000	\$15,000
4	Revegetation	LS	1	\$15,000	\$15,000
5	Traffic Control	LS	1	\$20,000	20,000
6	Temporary Construction Access Improvements	LS	1	\$10,000	\$10,000
7	Highway 101 Crossing – Direct Replacement with 16-inch OD HDPE Sewer Main	LF	215	\$650	\$140,000
8	Excavation and Shoring for Pipe Replacement Access	LS	1	\$75,000	\$75,000
9	Replace Existing Manholes and Connect to New Manholes	EA	2	\$15,000	\$30,000
10	Bypass Pumping (Four Days)	LS	1	\$40,000	\$40,000
<b>Construction Subtotal</b>					<b>\$425,000</b>
Contingency (20%)					\$85,000
<b>Opinion of Probable Construction Cost</b>					<b>\$510,000</b>
Geotechnical Investigation					\$30,000
Survey and Land/ROW Acquisition (10%)					\$51,000
Engineering Design (20%)					\$102,000
Permitting (15%)					\$77,000
Construction Management (15%)					\$77,000
<b>Total Opinion of Probable Cost</b>					<b>\$847,000</b>

### 3.2.1.1.1 **Advantages/Disadvantages**

Alternative 1 (direct replacement of the pipe within the existing casing) has the following advantages:





- The key advantage to this alternative is that it is the most cost effective option for providing adequate capacity at the middle crossing.
- Because there is already an existing pipe and casing in place, this alternative would be the simplest to permit through Caltrans.
- The construction would be straightforward and would not be significantly affected by soil characteristics.
- The design for this project would be simpler than the design for Alternative 2.

The disadvantages to this alternative include the following:

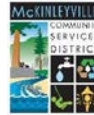
- The main disadvantage to this alternative is the fact that the condition of the existing casing and pipe are largely unknown. Valuable information was gained from the District excavating and exposing the pipe and casing on the west side of the crossing. However, the ease of removing the existing pipe cannot be characterized very well at this time. Additionally, if the existing casing were in particularly bad condition, it could make it very difficult to remove the existing pipe or pull new pipe through.
- It requires a prefabricated string of pipe to be staged across Thiel Avenue.
- It requires bypassing flows for an estimated four days, while Alternative 2 only requires an estimated two days of bypassing flows.

#### 3.2.1.2 **Alternative 2 – Auger Boring a New Parallel Pipe**

The alternative to directly replacing the existing pipe within the existing casing is installing a new parallel pipe. Because a trench cannot be dug across Highway 101, a trenchless method of pipe installation would be required to install a new parallel pipe. While there is potential that Caltrans would not require a casing since this is a gravity sewer main, it is conservative, and likely realistic, to assume that Caltrans will require the new sewer main to be placed inside a casing.

There are a variety of different trenchless methods and technologies for installing pipe. Horizontal directional drilling (HDD) is completed by boring a pilot hole, reaming out the hole to the desired size by completing multiple passes with a cutting head to enlarge the hole, and then pulling a fused string of pipe through the hole. HDD was considered during the preliminary design phase for this project; however, using HDD for a gravity main with a slope of less than 2% is typically not recommended. HDD steering technology is generally not accurate enough, as the bore could oscillate up and down by a couple inches, and with such a flat slope, this could cause issues with flow. This method could work if a siphon were set up, but this would be difficult to maintain.

Microtunneling is a process that uses a remotely controlled microtunnel boring machine combined with pipe jacking to directly install pipelines underground in a single pass. A cutting head attached to a rigid pipe section is jacked in a forward direction while the material that is being cut flows back through the pipe sections being installed. A parallel pipeline could likely be installed via microtunneling but this is a complex and expensive method. It is meant to be used in areas with soft, unstable soils, or areas with high groundwater. If the ground conditions are more stable, which is anticipated for this project, it is possible to use the auger boring method, which is the least expensive of these trenchless methods.

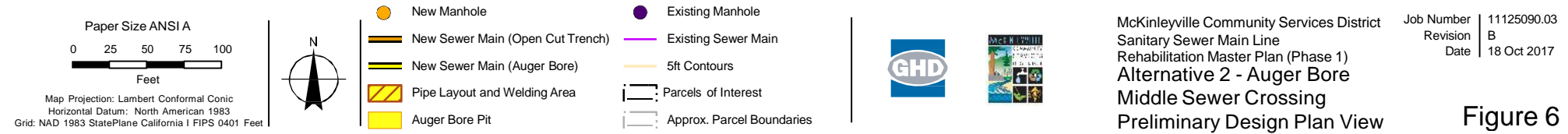
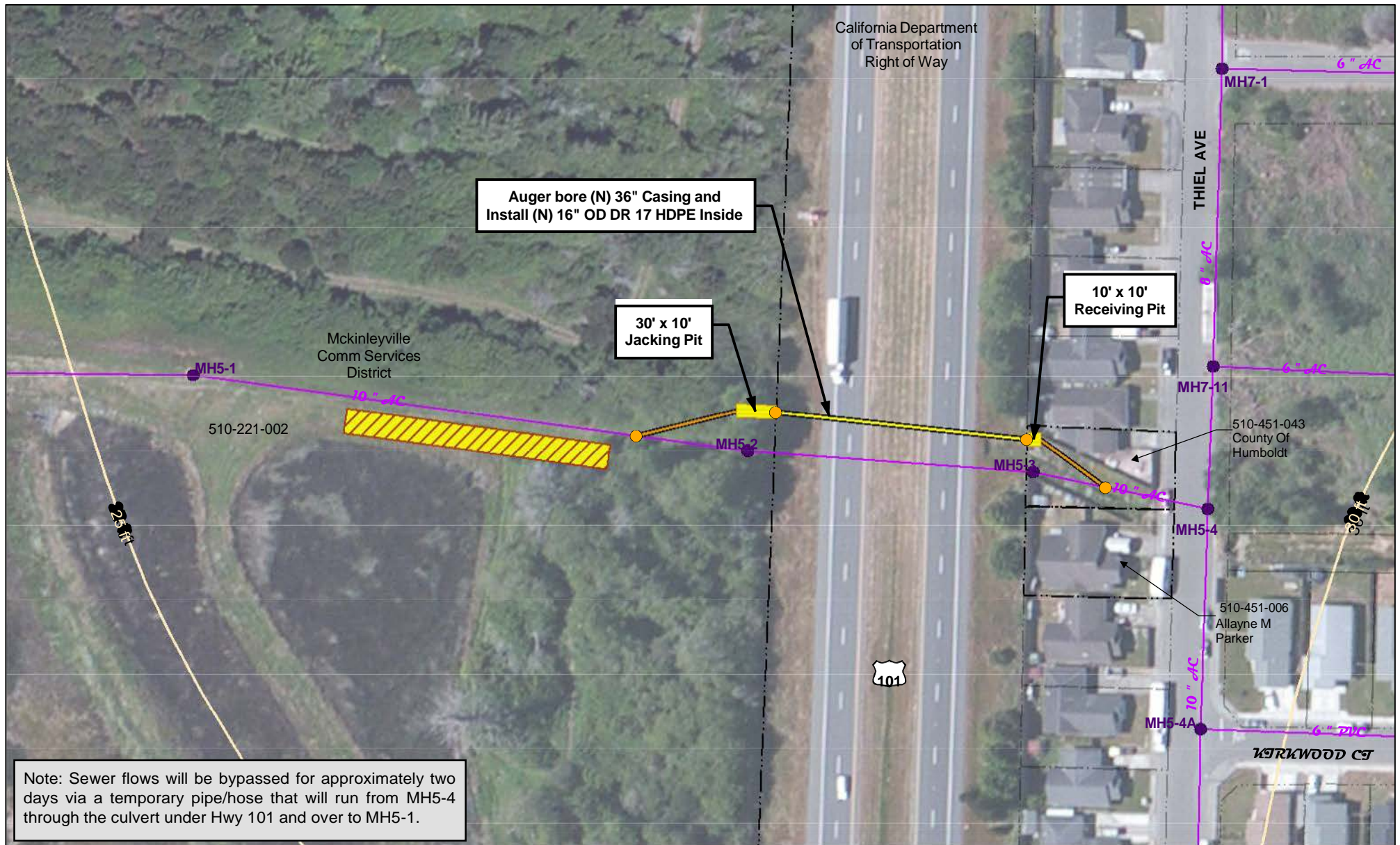


Auger boring, also known as jacking and boring, is the recommended trenchless method for installing a new parallel pipe for this project (see Figure 6). In this method, a pit is excavated on each end of the bore. The side the jacking pit is on is the side where all of the casing pipe, sewer pipe, auger pieces, etc. are staged, and is the side where the bore begins. For this project, this would be on the west side of Highway 101 on District property. The receiving pit is at the exit side of the bore and would be on the east side of Highway 101 within the Humboldt County drainage right-of-way. A cutting head is attached to a stick of casing pipe with an auger inside that is used for cutting through material and to convey the material back to the entry pit. Additional auger sections and sticks of casing pipe are added as the bore advances, until it ultimately emerges at the exit pit. Once the casing pipe is installed, the sewer main (fused 16-inch OD DR 17 HDPE) will be pushed into the casing using the boring machine or pulled through from the east side of the highway with a winch.

Auger boring is an unguided, non-steered, straight line method, so it is critical that the boring machine is set to the correct grade line, as there is no way to change direction once the process has begun. For this reason, the casing needs to be made much larger than the pipe itself so that if the casing does not get installed at the proper grade, there is room inside to adjust the gravity sewer pipe. For this project, a 36-inch casing would likely be installed, with a new 16-inch OD HDPE gravity sewer main installed within the casing. As discussed in Section 3.2.1.1, 16-inch OD DR 17 HDPE would be able to convey much more flow than required at this section when accounting for population growth and I&I.

After the new casing and pipe are installed, a new manhole would be installed at each end of the new pipe, and the new pipe would be connected to each manhole. A new open-cut trench pipe (likely 16-inch PVC) would be connected to each manhole and installed from the manhole to the previously existing pipe on each side. Once the new open-cut trench pipe has been installed and the existing pipe has been uncovered, the existing pipe would be cut and a new manhole installed to connect the new pipe and existing pipe on each end. This manhole installation and associated pipe connections would likely take one day on each side. While this work was occurring on the east side, flows would be bypassed using a pump and temporary hose from MH5-4 to MH 5-3. On the west side, flows would be bypassed from MH 5-2 to MH 5-1, for a total estimated two days required for bypassing flows.







### 3.2.1.2.1 **Cost Estimate**

A cost estimate has been prepared for Alternative 2 and is presented in Table 6. Costs were based on figures from recently bid construction projects and engineering judgment.

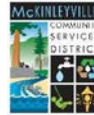
**Table 6: Opinion of Probable Cost to Upgrade the Middle Highway Crossing via Auger Boring a New Parallel Line**

Item	Description	Units	Quantity	Unit Cost	Total Cost
1	Mobilization/Demobilization	LS	1	\$70,000	\$70,000
2	Clearing and Grubbing	LS	1	\$10,000	\$10,000
3	Erosion and Sediment Control	LS	1	\$15,000	\$15,000
4	Revegetation	LS	1	\$15,000	\$15,000
5	Traffic Control	LS	1	\$5,000	\$5,000
6	Temporary Construction Access Improvements	LS	1	\$10,000	\$10,000
7	Highway 101 Crossing - Auger Bore 36-inch Casing and Install 16-inch OD HDPE	LF	215	\$850	\$183,000
8	Preparation of Jacking/Receiving Pits	LS	1	\$80,000	\$80,000
9	Demo Existing Manholes (2), Install New Manholes (4), Connect to New Manholes	LS	1	\$50,000	\$50,000
10	Open Cut Trenching and Installation of 16-inch PVC	LS	1	\$30,000	\$30,000
11	Bypass Pumping (Two Days)	LS	1	\$20,000	\$20,000
<b>Construction Subtotal</b>					<b>\$488,000</b>
Contingency (20%)					\$98,000
<b>Opinion of Probable Construction Cost</b>					<b>\$586,000</b>
Geotechnical Investigation (15%)					\$88,000
Survey and Land/ROW Acquisition (10%)					\$59,000
Engineering Design (20%)					\$117,000
Permitting (15%)					\$88,000
Construction Management (15%)					\$88,000
<b>Total Opinion of Probable Cost (nearest hundred thousand)</b>					<b>\$1,000,000</b>

### 3.2.1.2.1 **Advantages/Disadvantages**

Alternative 2 (auger boring a new parallel pipe) has the following advantages:

- This alternative does not depend upon the condition of the existing casing or pipe.
- Both the new pipe and the existing pipe would be in service after construction, allowing for additional flow capacity and redundancy.
- This alternative only requires bypassing flows for two days, as opposed to the four days required for Alternative 1.



The disadvantages to this alternative include the following:

- This alternative would require a Caltrans permit for the installation of a new highway crossing, which would be difficult and expensive.
- The success of auger boring is dependent upon the soil conditions present. However, it is anticipated that the soils under Highway 101 in this area will be stable enough to allow for successful auger boring.
- This alternative is more expensive than Alternative 1 (direct replacement with a new pipeline within the existing casing).
- The geotechnical and engineering design efforts required for this alternative would be more extensive and expensive than for Alternative 1.

### 3.2.1.3 Recommended Alternative

Each alternative would adequately address the capacity issues associated with the middle crossing. Because this is the case, the more cost effective Alternative 1 (direct replacement within the existing casing) is the recommended alternative. In addition to being the more cost effective of the two alternatives, it would be simpler to both design and construct, with less potential for unforeseen circumstances.

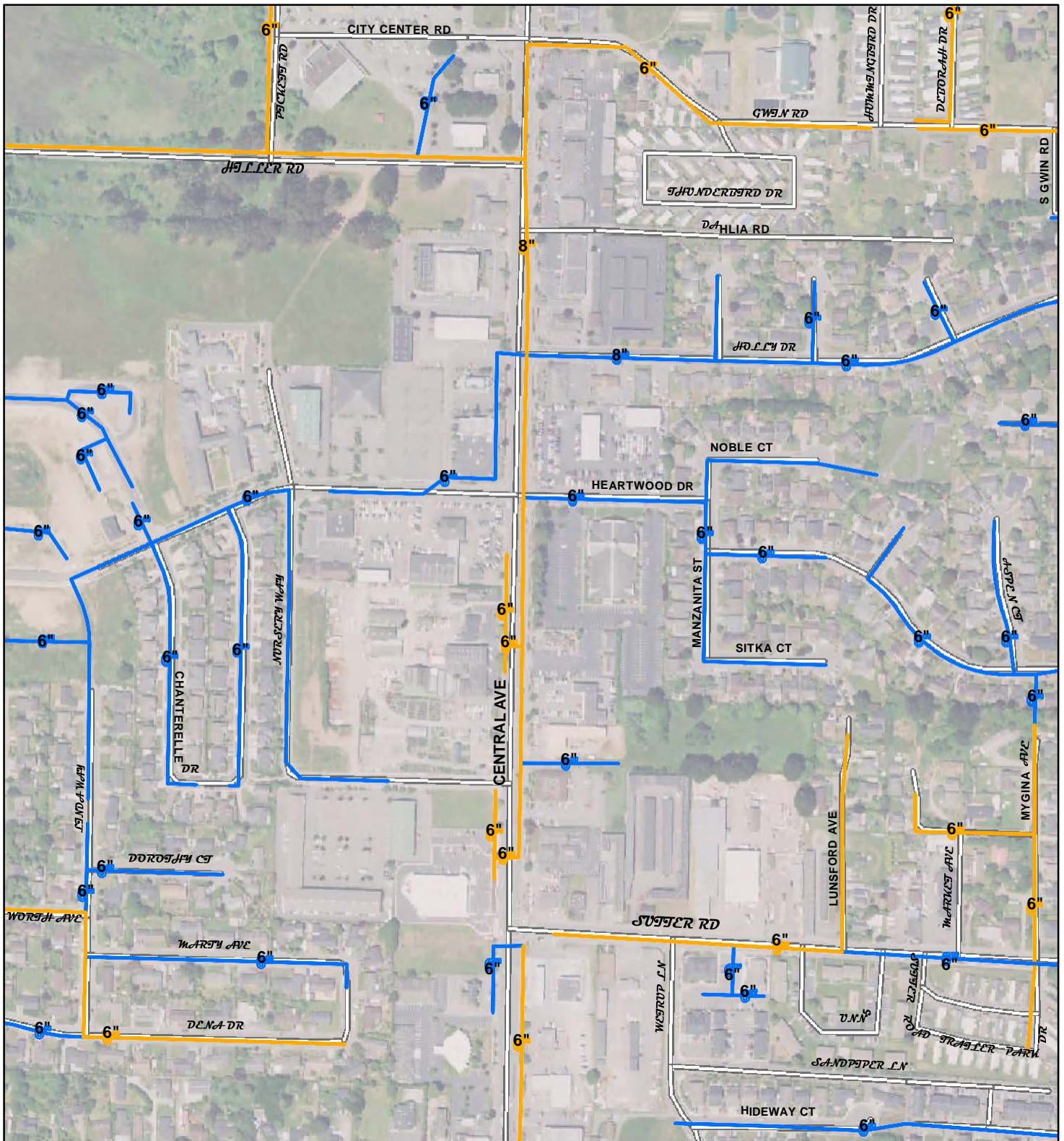
### 3.2.2 South Highway 101 Crossing

As discussed in Section 2.1, there are capacity issues with the south Highway 101 crossing as well. While the issues associated with the south crossing are not as high-priority as those associated with the middle crossing, this is still a near-term project that should be addressed within the next ten years. After the District has completed the middle crossing work, they should start planning and budgeting for design and construction to address the issues with the south crossing. A detailed cost estimate for this work could be developed as a part of Phase 2. However, for budget purposes, it can be assumed that the cost for upgrading the south crossing would be similar to the cost for upgrading the middle crossing, or approximately \$1 million.

### 3.2.3 Central Avenue Main from Sutter Road to Hiller Road

As discussed in Section 2.2, the 8-inch asbestos cement (AC) main on Central Avenue from Sutter Road to Hiller Road (Figure 7) has become severely corroded by hydrogen sulfide gas. The joints of the main in this area have corroded away to the point where the gaskets at the joints are actually exposed. If the problem is not addressed in the near term (next approximately 5-10 years), this section of pipe could present serious issues with I&I and pipe failure. Physical assessment of this section of pipe should occur in the near term to determine the urgency for repair or replacement. While it is possible that this sewer main could be repaired by lining the existing pipe, the pipe may need to be replaced to provide sufficient structural support. To be conservative in estimating costs, the assumption has been made that this section of pipe will need to be replaced. The cost for replacing this section of the system has been estimated in Table 7. These costs have also been included in the overall cost estimate presented in Table 3, and the assumptions made in developing these costs were the same assumptions used to develop the costs presented in Table 3.





- Asbestos Cement
- Polyvinyl Chloride
- Roads

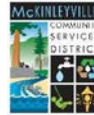


Table 7: Opinion of Probable Cost for Replacement of the Sewer Main on Central Avenue from Sutter Road to Hiller Road

Item	Description	Units	Quantity	Unit Cost	Total Cost
1	Mobilization/Demobilization	LS	1	\$50,000	\$50,000
2	Construction Staking	LS	1	\$5,000	\$5,000
3	Traffic Control	LS	1	\$50,000	\$50,000
4	8-inch PVC (Pipe Material and Installation Only)	LF	2,020	\$105	\$212,000
5	Excavation	CY	1,800	\$10	\$18,000
6	Backfill (including Compaction)	CY	1,800	\$40	\$72,000
7	Hauling off Excavated Material	CY	900	\$10	\$9,000
8	Paving	LF	2,020	\$25	\$51,000
9	Manholes	EA	8	\$10,000	\$80,000
<b>Construction Subtotal</b>					<b>\$547,000</b>
Contingency (20%)					\$109,000
<b>Opinion of Probable Construction Cost</b>					<b>\$656,000</b>
Permitting (10%)					\$66,000
Engineering (10%)					\$66,000
Construction Management (10%)					\$66,000
<b>Total Opinion of Probable Cost</b>					<b>\$854,000</b>

### 3.2.4 Force Mains

Approximately half of the force mains in the system are over 40 years old, and the majority of the force mains are AC pipe. There are five sewer lift stations in the MCSD system (B Street, Fischer Road, Letz Lane, Kelly Avenue, and Hiller Road lift stations; see Figures 2 and 3). Four of them (Fischer, Letz, Kelly, and Hiller) are on the west side of Highway 101, and all of the wastewater flow in the system is ultimately routed through these four lift stations. If one of the force mains downstream of these stations were to fail, it would pose a very serious issue for the District. User flows would of course continue to be contributed to the system, and it would be very difficult and time-consuming to bypass flows around the failed force main to allow for repair. The lift station associated with the failed force main would likely overflow with sewage within hours, which would also cause backup within the pipe network. This could lead to serious environmental impacts as well as fines imposed on the District. Due to the serious repercussions of a failed force main in this system, it is critical to begin assessment of the system force mains in the near term to determine when it will be appropriate to begin force main replacement. The cost for force main replacement has been included in the cost estimate presented in Table 3.



## 4. Financial Analysis

Willdan Financial Services (Willdan) was retained by the District to develop a multi-year pro forma analysis for the sewer system reflecting the potential financial impact of the long-term systematic replacement of the entire collection system as discussed in Phase 1 of this Master Plan. Specifically, Willdan prepared 30-year projections of net operating results under three specific scenarios for funding the improvements analyzed in Section 3.1. These scenarios included completing the improvements in 50 years, 75 years, and 100 years, with an analysis of how each of these three planning horizons affect District finances in a 30-year projection period.

Within each of these scenarios, Willdan developed three distinct analyses depicting operating results under the following rate paths:

- No Rate Increases – referred to as the “do nothing” scenario and assesses the District’s ability to support operations and capital improvements assuming no future rate increases.
- Just-in-Time Rate Increases – calculates the level of rate adjustments needed on a “just-in-time” basis to meet system revenue requirements, including capital improvements.
- Phased-In Rate Increases – depicts a possible rate path that attempts to avoid large rate adjustments by phasing them in over time.

Ultimately the “no rate” increases scenario was not deemed viable, as the projected cash reserves would fall under the recommended reserves immediately after the implementation of the system replacement projects.

Willdan produced a technical memorandum (memo) that has been included as Appendix B. The memo provides the following:

- The general approach of the analysis and the assumptions that were made
- Projected revenues and expenses
- Required rate adjustments for the different scenarios described above
- Net operating results
- Debt projections and debt service coverage
- Projected cash reserves

A summary of the rate adjustments required to support the long-term replacement of the entire system is provided in Table 8.



Table 8: Range of Potential Rate Adjustments

Amortization Period	Rate Scenario	Rate Adjustments
50-year	Just-in-Time	0.00% - 43.40%
	Phased-In	Average – 8.62% 7.25%
75-year	Just-in-Time	0.00% - 42.10%
	Phased-In	Average – 7.16% 6.10%
100-year	Just-in-Time	0.00% - 44.00%
	Phased-In	Average – 6.37% 5.50%

A bar graph illustrating rate adjustments required using the phased-in method is provided as Figure 8.

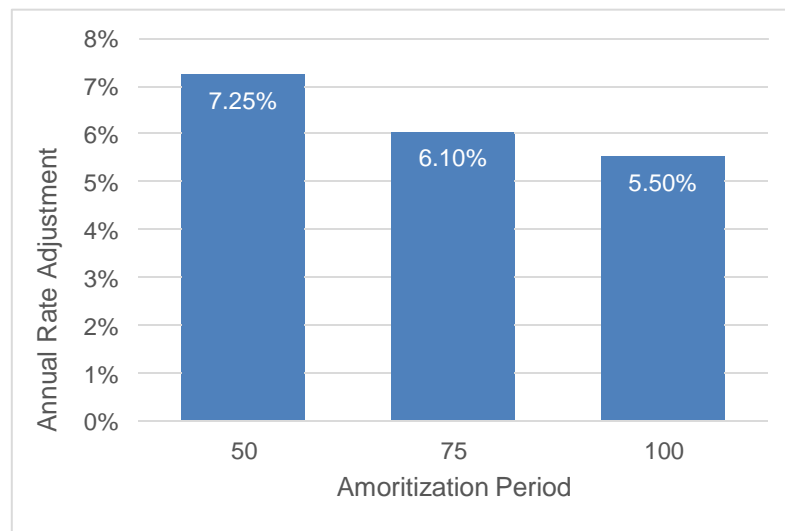
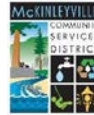


Figure 8: Estimated Annual Rate Adjustments Required Using the Phased-In Method

It is important to emphasize that we are not recommending that the District begin implementing the rate increases presented in this section. This is simply an analysis to assess what effect the replacement of the entire sanitary sewer collection system would have on user rates and District finances.

It should be noted that MCSD currently has a policy prescribing that all capital improvement projects exceeding \$500,000 in a given year will be funded by debt. Likewise, any project under the \$500,000 threshold will be funded on a pay-as-you-go basis with available unrestricted cash. The scenarios summarized in the Willdan memo assume MCSD will continue with this policy. However, as part of this exercise, the project team discussed the possibility of revising this policy to allow for “bundling” of project costs into few borrowings to take advantage of any available savings in debt



issuance costs. For example, MCSD could bundle three years of project costs into a single borrowing, possibly resulting in efficiencies and savings. It is important to note that Willdan is not a registered financial advisor and is not recommending a particular debt structure. Should MCSD be interested in examining any potential benefits from alternative debt management approaches, we encourage you to consult with your financial advisor.

## 5. Conclusions, Recommendations, and Next Steps

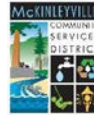
This document presents Phase 1 of the MCSD Sanitary Sewer Main Line Replacement and Rehabilitation Master Plan, a high-level assessment of the District's sanitary sewer collection system for use in initial planning for rehabilitation and upgrades to the system. Phase 1 has provided the following:

- Overview of the existing collection system.
- Summary of previous related studies.
- Information on anticipated population growth.
- Preliminary needs assessment.
- Long-term replacement analysis including estimated replacement costs.
- Discussion of near-term projects including cost and scheduling information.
- Financial analysis based on the cost estimates.

This final section presents conclusions, recommendations, and information on the next steps in the overall process:

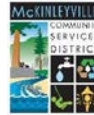
- While there are some critical areas and issues in the collection system that need to be addressed or further analyzed in the near term, the majority of the District's collection system is in good condition and has adequate capacity to serve District customers for the foreseeable future.
- The District's sanitary sewer collection system was constructed in 1976 and is aging. In addition to the near-term projects discussed in this document, it is critical that the District begin planning and budgeting for upgrades and replacement of other system components. The majority of the system is AC pipe that is over 40 years old, and pipe corrosion and failures will likely become an issue in the next 10 to 30 years if the District does not begin this process. As the system continues to age, replacement and rehabilitation of existing infrastructure will be necessary to maintain an effective, functional system. The total estimated cost to replace the entire collection system is \$142 million in today's dollars. Using the phased-in approach of rate increases as discussed in Section 4, it is projected that replacing the entire system over 50, 75, or 100 years would require annual rate increases of 7.25%, 6.10%, and 5.50%, respectively. It is important to emphasize that we are not recommending that the District implement these rates at this juncture or necessarily plan for the replacement of the entire collection system. Phase 2 of the Master Planning process will refine the recommended extent of system replacement and the necessary rates required to do so.





- The middle Highway 101 crossing is under capacity and needs to be addressed in the near term. Two alternatives were analyzed for solving the capacity problem: 1) direct replacement within the existing casing and 2) auger boring a new parallel pipe. These two alternatives are estimated to cost \$847,000 and \$1 million, respectively. The direct replacement alternative is the most cost effective alternative for addressing the problem and is the recommended alternative for this project.
- There are capacity issues at the south Highway 101 crossing. While the issues associated with the south crossing are not as high-priority as those associated with the middle crossing, this is still a near-term project that should be addressed within the next ten years. After the District has completed the middle crossing work, they should start planning and budgeting for design and construction to address the issues with the south crossing. Based on the cost estimate for the middle crossing, it is estimated that the cost for upgrading the south crossing would be approximately \$1 million.
- The 8-inch asbestos cement (AC) main on Central Avenue from Sutter Road to Hiller Road has become severely corroded by hydrogen sulfide gas. If the problem is not addressed in the near term (next approximately 5-10 years), this section of pipe could present serious issues with I&I and pipe failure. Physical assessment of this section of pipe should occur in the near term to determine the urgency for replacement. The cost for replacing this section of the system has been estimated to be \$854,000.
- Approximately half of the force mains in the system are over 40 years old, and the majority of the force mains are AC pipe. If one of the force mains were to fail, it would pose a very serious issue for the District. It would be very difficult and time-consuming to bypass flows around the failed force main to allow for repair. The lift station associated with the failed force main would likely overflow with sewage within hours, which would also cause backup within the pipe network. This could lead to serious environmental impacts as well as fines imposed on the District. Due to the serious repercussions of a failed force main in this system, it is critical to begin assessment of the system force mains in the near term to determine when to begin planning for replacement.

The long-term replacement analysis provided in this document presents cost estimates, and corresponding financial impacts, for replacing the entire system. However, the District likely does not need to replace (nor do we recommend that they replace) the entire collection system. There are certainly sections where it would be much more cost effective to repair areas rather than replace the whole section of main line, particularly in less densely populated areas with smaller pipes. The cost estimates provided in this document are presented in an effort to understand what the overall cost would be to systematically replace the entire system, and to determine what the overall impact to user rates would be. The intent is to use this information as a starting point for Phase 2 of the Master Plan effort. Phase 2 will consist of more detailed cost estimates and more detailed scheduling/phasing for the replacement of the District's sewer mains. The replacement schedule will be refined through field investigation of the actual condition of portions of the collection system. After specific areas of the system are assessed, appropriate replacement methodologies (e.g. lining, bursting, or direct replacement) will be further developed with associated construction cost estimates that are more refined. The updated replacement schedule and cost information will be used to refine the financial analysis provided in Phase 1.



Ultimately, the District needs to prioritize when to replace certain sections of pipe and further define how much will be replaced per year to develop a Capital Improvement Plan that outlines how many feet of pipe will be replaced in a given year in a given area. They then need to decide how to pay for this CIP effort. This information will be provided as a result of this overall Master Plan effort.

## Appendices

# Appendix A

## McKinleyville Sewer Collection System: Pipe Inventory by Age, Material, and Diameter

**McKinleyville Sewer Collection System**  
**Pipe Breakdown by Age, Material, and Diameter**

Year Installed	Age (years)	Amount of Sewer Pipe Installed (feet)																							Total
		PVC			AC								DIP		Clay			Steel	Pressure						
		6"	8"	12"	6"	8"	10"	12"	15"	18"	21"	24"	6"	16"	8"	18"	21"	18"	2"	2.5"	4"	6"	10"		
1976	41	22,610			132,400	14,409	11,200	10,300	8,500	2,334	1,310	12,100		563	391	231	390	135			1,500	1,100	1,500	220,973	
1977	40																							0	
1978	39																							0	
1979	38																							0	
1980	37	952			4,071	500																		5,523	
1981	36	2,517			1,265																			3,782	
1982	35	1,758																						1,758	
1983	34																							0	
1984	33	2,232																						2,232	
1985	32	2,634																						2,634	
1986	31	5,647																	315					5,962	
1987	30				3,944														787	445				5,176	
1988	29				5,165														83					5,248	
1989	28				5,687														29					5,716	
1990	27	5,982	564																342					6,888	
1991	26	5,162																						5,162	
1992	25	6,622																						6,622	
1993	24	8,038	1,887										340						1,936		127			12,328	
1994	23	4,486											85						53					4,624	
1995	22	942																						942	
1996	21	2,541																						2,541	
1997	20	403																						403	
1998	19	2,336	2,673																					5,009	
1999	18	2,184																						2,184	
2000	17	3,620																	308					3,928	
2001	16	3,563																						3,563	
2002	15	5,636	90																211					5,937	
2003	14	5,784																						5,784	
2004	13	1,042																						1,042	
2005	12	5,020																						5,020	
2006	11	2,354	5,543																					7,897	
2007	10	2,164											40											2,204	
2008	9	1,346											36											1,382	
2009	8	1,250																						1,250	
2010	7																							0	
2011	6	3,915																						3,915	
2012	5																							0	
2013	4	1,445																						1,445	
2014	3																							0	
2015	2	2,489		95				-114																2,470	
2016	1																							0	
Total		116,674	10,757	95	152,532	14,909	11,200	10,186	8,500	2,334	1,310	12,100	501	563	391	231	390	135	4,064	445	1,627	1,100	1,500	351,544	

Data provided by MCSD

6/22/2017

## Appendix B

# Summary Results of Financial Pro Forma Analyses (Willdan Financial Services, 2017)

# MEMORANDUM

To:	Pat Kaspari; Greg Orsini; James Henry; Colleen Trask
From:	Jeff McGarvey
Date:	November 21, 2017
Client:	McKinleyville Community Services District
Project:	Water and Sewer Master Plans
Subject:	Summary Results of Financial Pro Forma Analyses

Willdan Financial Services (Willdan) was retained by McKinleyville Community Services District (M/CSD) to develop multi-year pro forma analyses for both the water and sewer systems reflecting the potential financial impact of infrastructure improvements identified in the Master Plans recently completed by GHD, Inc (GHD). Specifically, Willdan prepared 30-year projections of net operating results for each system under three (3) specific scenarios for funding the improvements identified in the master plans. These scenarios included completing the improvements in 50 years, 75 years, and 100 years. Within each of these scenarios, Willdan developed three (3) distinct analyses depicting operating results under the following rate paths:

- No Rate Increases – referred to as the “do nothing” scenario and assesses the utilities ability to support operations and capital improvements assuming no future rate increases.
- Just-in-Time Rate Increases – calculates the level of rates adjustments needed on a “just-in-time” basis to meet system revenue requirements, including capital improvements.
- Phased-In Rate Increases – depicts a possible rate path that attempts to avoid large rate adjustments by phasing them in over time.

The following narrative provides a brief description of the process and assumptions that were used to develop the operating revenues and expenses as well as a summary of each of the scenarios. Additional detail is available should it be required.

## General Approach and Assumptions

To develop the requested scenarios, it was necessary to first develop a projection of the operating revenues and expenses for each system. As a note, while the requested scenarios consider up to 100 years, for purposes of the financial analysis, the projection period is limited to 30 years (Fiscal Years 2018-2047). For purposes of this technical memorandum, it was determined that it is only necessary to display 20 years (Fiscal Years 2018 – 2037). However, the detailed 30-year analysis and worksheets are available for review.

### Projected Revenues and Expenses

M/CSD’s approved operating budget for Fiscal Year 2018 served as the basis for projected operating revenues.



### Projected Revenues

- Water Base Charges, Water Metered Sales and Sewer Charges - future years were adjusted assuming growth (1.0%) and any rate adjustments considered as part of each respective scenario.
- Other System Revenues - with the exception of interest earnings, were projected using annual escalation factors that were reviewed with the M/CSD staff.
- Interest Earnings - were projected based on the average annual cash balances in each respective fiscal year assuming an interest earnings rate of 0.25%.

### Projected Expenses

- Each line item expense (per the budget) was analyzed and annual escalation factors were assigned to each item. As with the revenue, these escalation factors were reviewed and revised by M/CSD staff.
- Current Depreciation Expense was held constant throughout the projection period.
- Depreciation Expense associated with the infrastructure improvements identified in the Master Plans was estimated based on an Estimated Average Useful Life of 40 years.

### Capital Improvement Plan (CIP)

- Capital expenditures for the period FY2018-2036, excluding those anticipated by the Master Plans, were provided by M/CSD.
- Funding of the CIP was assumed to occur per M/CSD policy which states that expenditures exceeding \$500,000 per project per year will be funded through debt. Those projects costing less than \$500,000 are assumed to be funded from available cash on a pay-as-you-go basis.

### Master Plan

- Costs associated with the infrastructure improvements identified in the master plan(s) were developed by M/CSD's consulting engineer, GHD. Per GHD's master plans, the estimated costs of rehabilitation of the water and sewer systems are approximately \$142,000,000 each. Willdan assumed these costs estimates were reliable and did not attempt to independently verify.
- At the direction of GHD, it was assumed that the master plan projects would initiate in fiscal year 2027.

### Debt Service

- For purposed of estimating annual debt service payments we assumed a term of 30 years, interest rate of 4.0% and issuance costs of 2.0%.

## Observations and Comments

### General Findings

- The infrastructure improvements identified in the Master Plans are not feasible without rate increases. The level of rate adjustments necessary to support the Master Plan vary from scenario to scenario and are summarized below in Table 1:

**Table 1**

Range of Potential Rate Adjustments

Amortization Period	Rate Scenario	Water System	Sewer System
50 yr	None	-	-
	Just-in-Time	0.00% - 41.40% Avg - 7.28%	0.00% - 43.40% Avg - 8.62%
	Phased-In (levelized)	6.25%	7.25%
75 yr	None	-	-
	Just-in-Time	0.00% - 30.30% Avg - 5.59%	0.00% - 42.10% Avg - 7.16%
	Phased-In (levelized)	5.00%	6.10%
100 yrs	None	-	-
	Just-in-Time	0.00% - 24.20% Avg - 4.64%	0.00% - 44.00% Avg - 6.37%
	Phased-In (levelized)	4.10%	5.50%

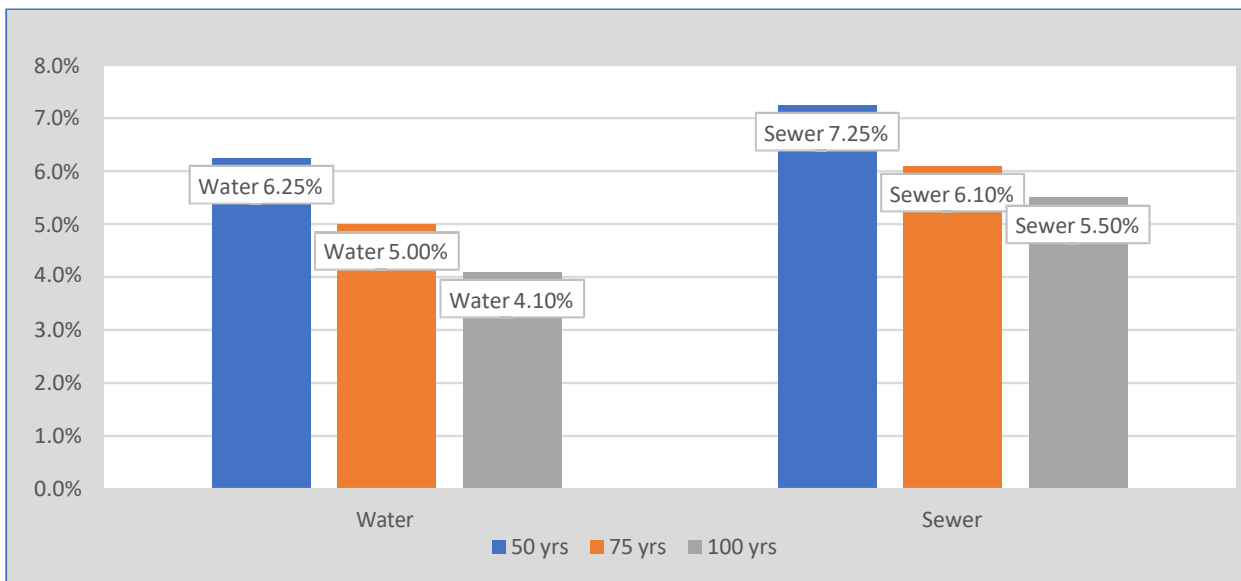
More detailed tables are included herein. Also, upon request we can produce the detailed worksheets from the analysis.

### Observations

- As can be seen from Table 1 and the supporting tables that follow, the longer amortization period has the effect of reducing the average rate adjustments required for each utility.

Figure 1 below presents the estimated annual rate adjustments necessary assuming M/CSD opts to use the Phased-In, or levelized, method to increase rates.

**Figure 1**  
Estimated Annual Rate Adjustments



- As described herein, M/CSD currently has a policy which indicates that all capital improvement projects exceeding \$500,000 in a given year will be funded by debt. Likewise, any project under the \$500,000 threshold will be funded on a pay-as-you-go basis with available unrestricted cash. The scenarios summarized in this memorandum assume M/CSD will continue with this policy. However, as part of this exercise, the project team discussed the possibility of revising this policy to allow for “bundling” of project costs into few borrowings to take advantage of any available savings in debt issuance costs. For example, M/CSD could bundle 3 years of project costs into a single borrowing possibly resulting in efficiencies and savings. It is important to note that Willdan is not a registered financial advisor and is not recommending a particular debt structure. Should M/CSD be interested in examining any potential benefits from alternative debt management approaches we encourage you to consult with your financial advisor.
- As indicated herein, for the Water System, Phased-In (Levelized) rate scenarios, cash reserves accumulate well above the targeted amounts. This is a result of the need to meet the targeted debt service coverage requirement of 1.20. It is not recommended that M/CSD accumulate excess cash reserves. In the event the need to meet debt service coverage requirements results in the generation of excess cash, this cash should be used to offset the need for future debt. As discussed during this effort, a more detailed and specific capital financing plan will be developed as part of a future engagement.

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# Water System

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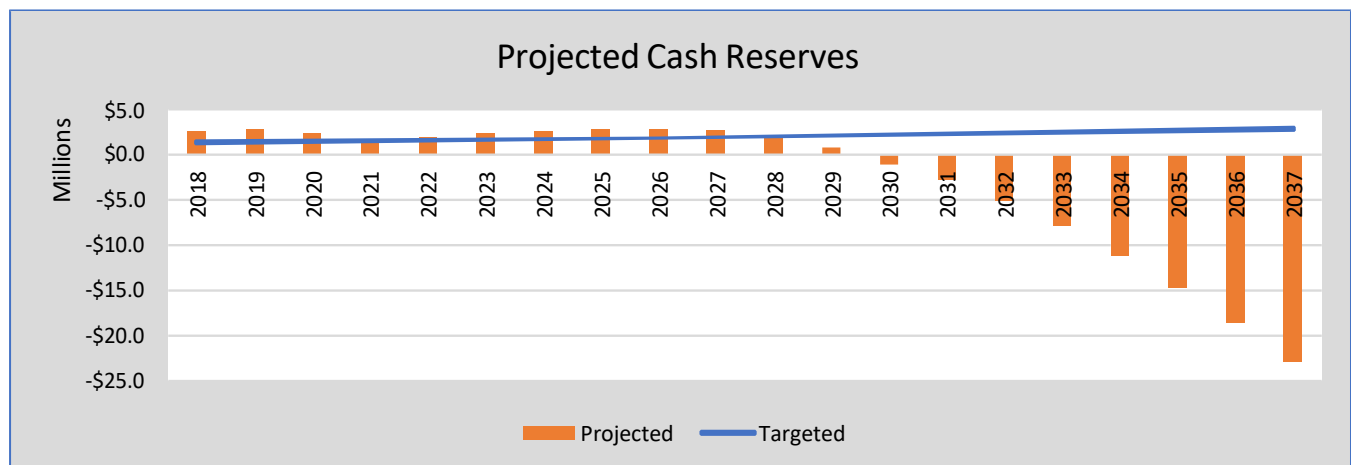
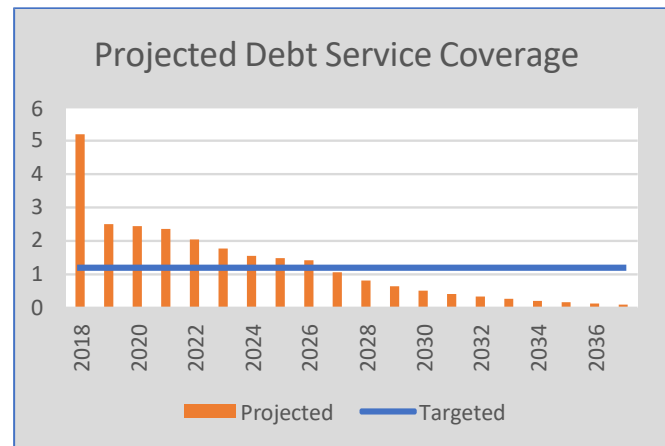
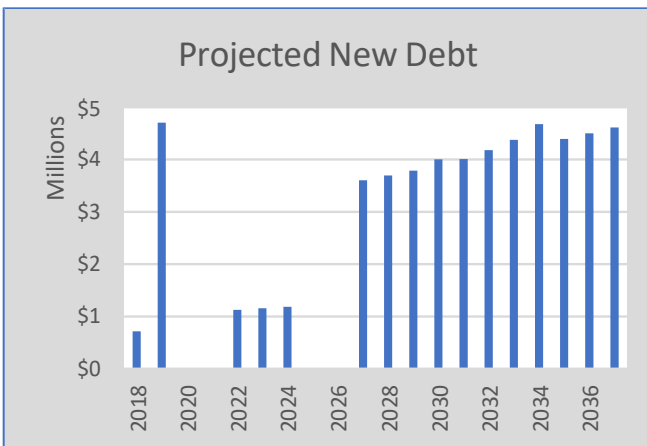
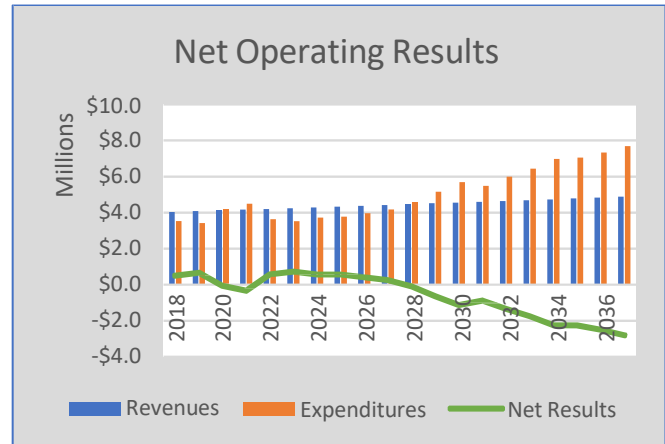
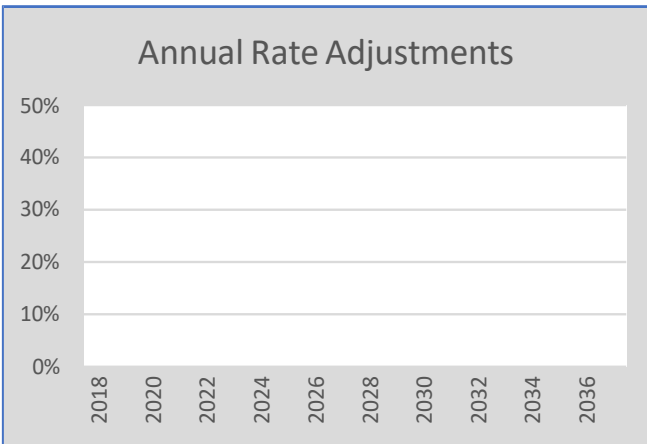
Scenario 1 Master Plan Amortized over 50 Years

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## Water System

### Scenario 1 – Master Plan Amortized over 50 Years

Rate Increase	None
Fund Approach	Current Policy - >\$500k debt funded in project year



Summary Results of Financial Pro Forma Analyses - continued

Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	-	1.20	5.19	1,362	2,548	-	1,554
2019	-	1.20	2.50	1,398	2,862	-	5,004
2020	-	1.20	2.44	1,436	2,448	-	1,085
2021	-	1.20	2.36	1,475	1,765	-	1,315
2022	-	1.20	2.04	1,515	1,990	-	1,406
2023	-	1.20	1.77	1,556	2,360	-	1,181
2024	-	1.20	1.55	1,599	2,577	-	1,251
2025	-	1.20	1.48	1,643	2,791	-	51
2026	-	1.20	1.42	1,688	2,852	-	155
2027	-	1.20	1.06	1,780	2,667	3,621	3,592
2028	-	1.20	0.81	1,874	2,043	3,712	3,760
2029	-	1.20	0.64	1,971	768	3,805	4,131
2030	-	1.20	0.51	2,070	(1,093)	3,900	4,540
2031	-	1.20	0.41	2,173	(2,805)	3,997	3,996
2032	-	1.20	0.33	2,278	(5,077)	4,097	4,313
2033	-	1.20	0.26	2,386	(7,860)	4,200	4,585
2034	-	1.20	0.20	2,498	(11,248)	4,305	5,039
2035	-	1.20	0.16	2,613	(14,762)	4,412	4,446
2036	-	1.20	0.12	2,731	(18,627)	4,523	4,456
2037	-	1.20	0.09	2,852	(22,911)	4,636	4,523

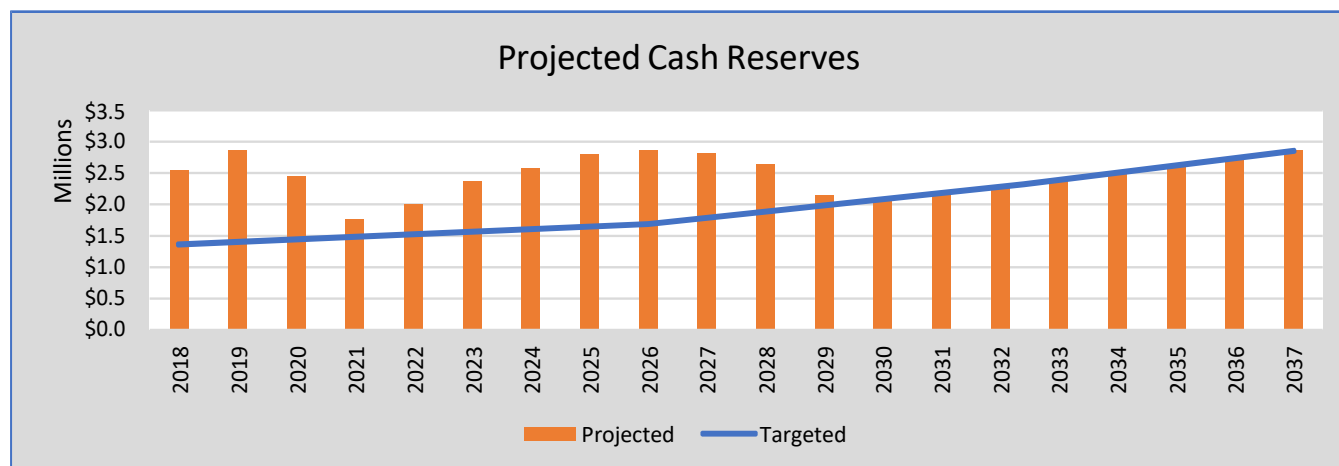
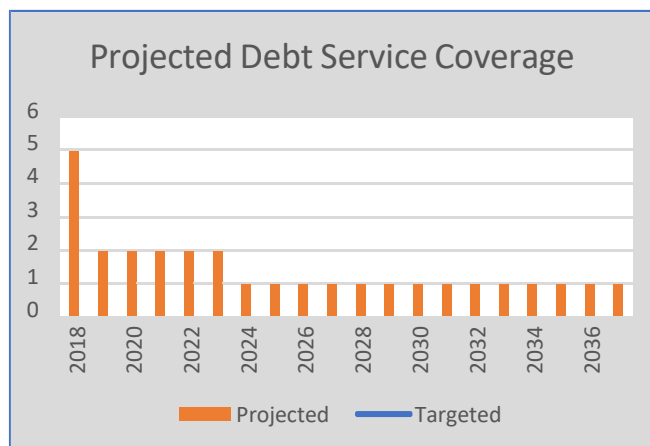
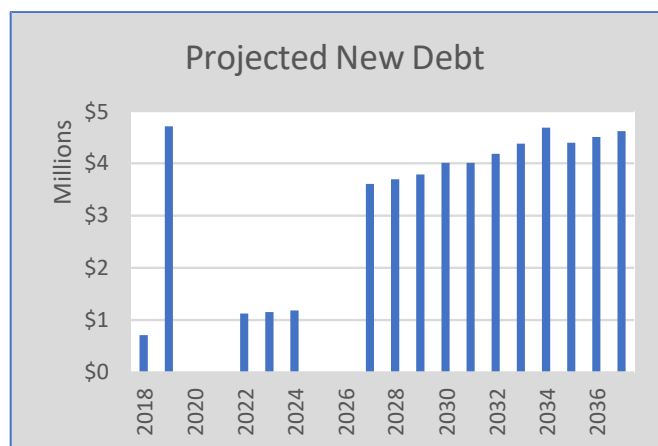
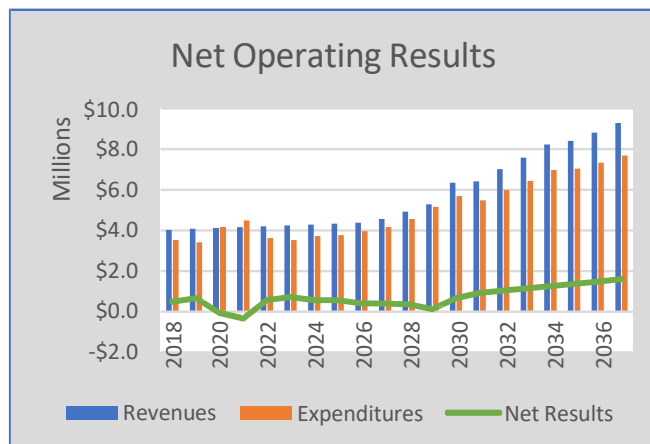
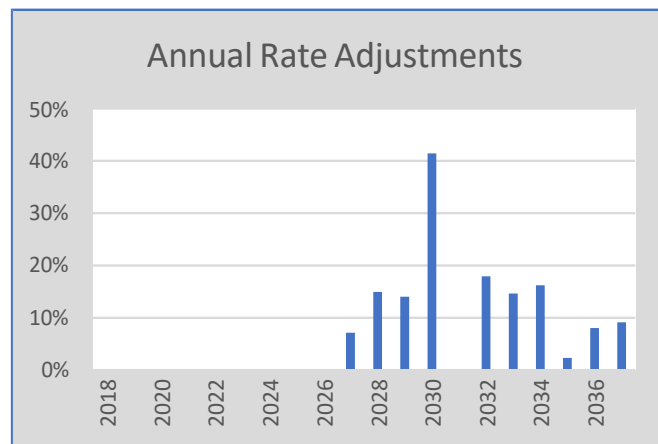
Note:

[1] Amounts shown in \$1,000's.

## Water System

### Scenario 1 – Master Plan Amortized over 50 Years

Rate Increase	Just in Time
Fund Approach	Current Policy - >\$500k debt funded in project year





Summary Results of Financial Pro Forma Analyses - continued

Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	0.00%	1.20	5.19	1,362	2,548	-	1,554
2019	0.00%	1.20	2.50	1,398	2,862	-	5,004
2020	0.00%	1.20	2.44	1,436	2,448	-	1,085
2021	0.00%	1.20	2.36	1,475	1,765	-	1,315
2022	0.00%	1.20	2.04	1,515	1,990	-	1,406
2023	0.00%	1.20	1.77	1,556	2,360	-	1,181
2024	0.00%	1.20	1.55	1,599	2,577	-	1,251
2025	0.00%	1.20	1.48	1,643	2,791	-	51
2026	0.00%	1.20	1.42	1,688	2,852	-	155
2027	7.10%	1.20	1.21	1,780	2,808	3,621	3,592
2028	14.90%	1.20	1.21	1,874	2,637	3,712	3,760
2029	14.00%	1.20	1.21	1,971	2,137	3,805	4,131
2030	41.40%	1.20	1.63	2,070	2,070	3,900	4,540
2031	0.00%	1.20	1.40	2,173	2,176	3,997	3,996
2032	17.90%	1.20	1.47	2,278	2,281	4,097	4,313
2033	14.60%	1.20	1.50	2,386	2,388	4,200	4,585
2034	16.20%	1.20	1.55	2,498	2,501	4,305	5,039
2035	2.30%	1.20	1.43	2,613	2,615	4,412	4,446
2036	8.00%	1.20	1.40	2,731	2,734	4,523	4,456
2037	9.10%	1.20	1.39	2,852	2,857	4,636	4,523

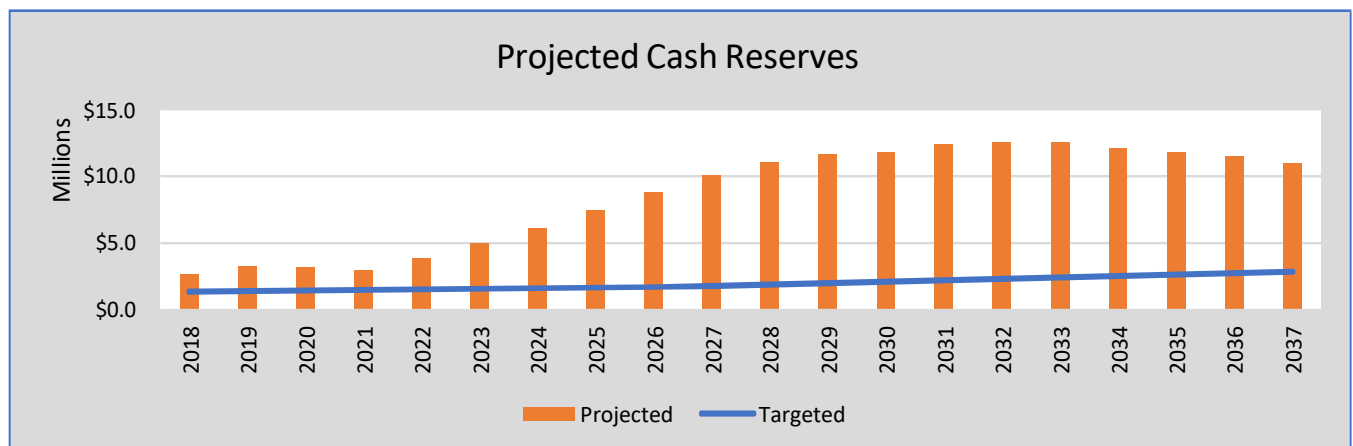
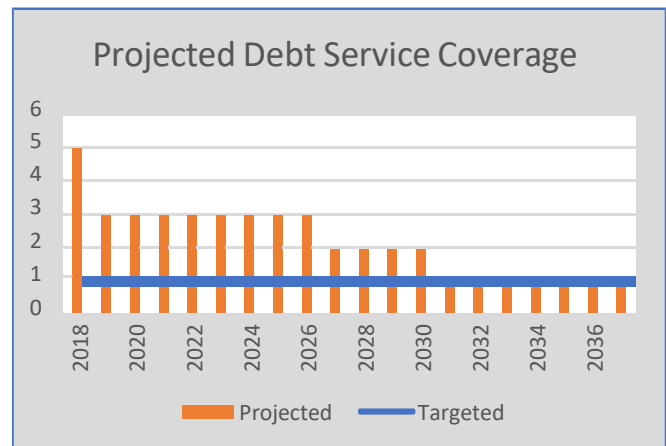
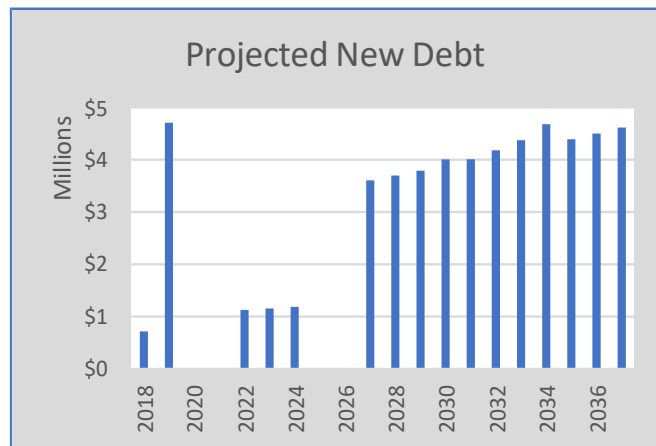
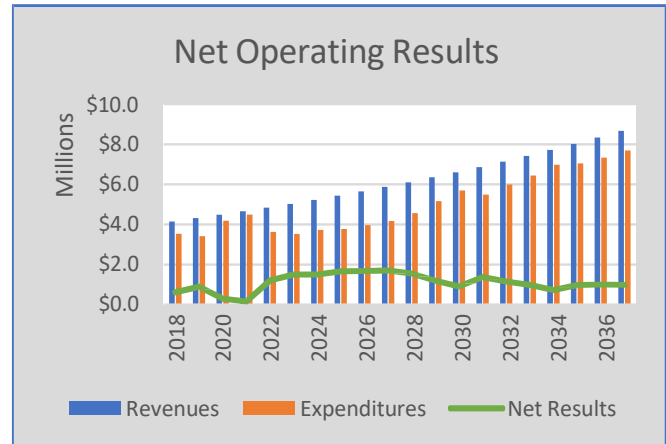
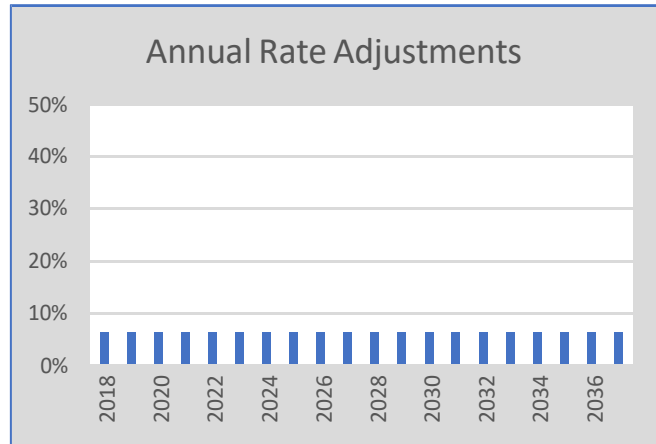
Note:

[1] Amounts shown in \$1,000's.

## Water System

### Scenario 1 – Master Plan Amortized over 50 Years

Rate Increase	Phased In (level)
Fund Approach	Current Policy - >\$500k debt funded in project year



Summary Results of Financial Pro Forma Analyses - continued

Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	6.25%	1.20	5.62	1,362	2,662	-	1,554
2019	6.25%	1.20	2.94	1,398	3,209	-	5,004
2020	6.25%	1.20	3.11	1,436	3,155	-	1,085
2021	6.25%	1.20	3.28	1,475	2,965	-	1,315
2022	6.25%	1.20	3.09	1,515	3,822	-	1,406
2023	6.25%	1.20	2.94	1,556	4,972	-	1,181
2024	6.25%	1.20	2.82	1,599	6,124	-	1,251
2025	6.25%	1.20	2.98	1,643	7,435	-	51
2026	6.25%	1.20	3.14	1,688	8,765	-	155
2027	6.25%	1.20	2.60	1,780	10,028	3,621	3,592
2028	6.25%	1.20	2.24	1,874	11,041	3,712	3,760
2029	6.25%	1.20	1.98	1,971	11,601	3,805	4,131
2030	6.25%	1.20	1.78	2,070	11,783	3,900	4,540
2031	6.25%	1.20	1.64	2,173	12,333	3,997	3,996
2032	6.25%	1.20	1.53	2,278	12,552	4,097	4,313
2033	6.25%	1.20	1.43	2,386	12,500	4,200	4,585
2034	6.25%	1.20	1.35	2,498	12,090	4,305	5,039
2035	6.25%	1.20	1.29	2,613	11,810	4,412	4,446
2036	6.25%	1.20	1.25	2,731	11,448	4,523	4,456
2037	6.25%	1.20	1.21	2,852	10,947	4,636	4,523

Note:

[1] Amounts shown in \$1,000's.

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# Water System

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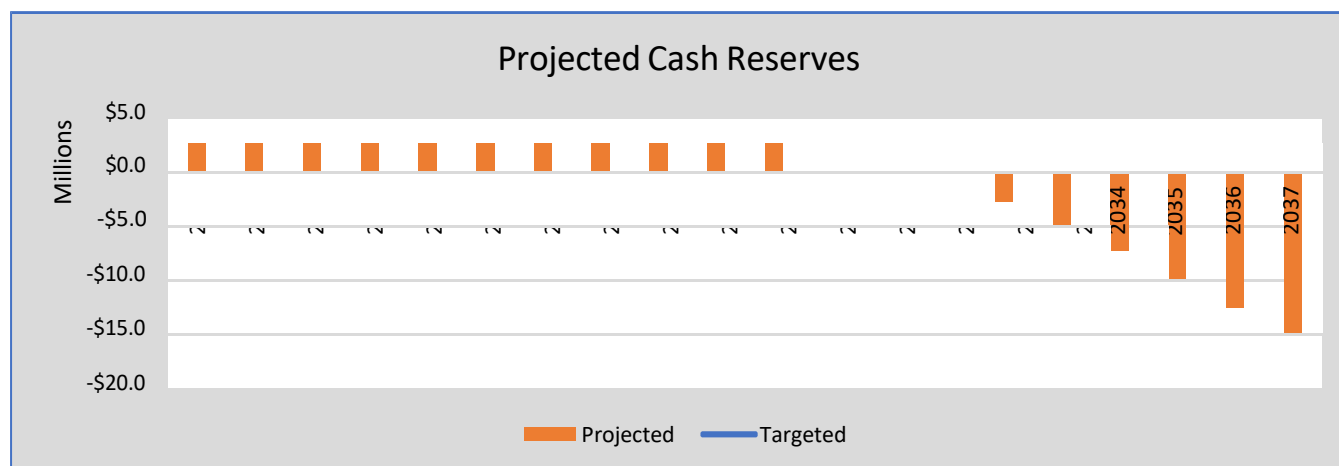
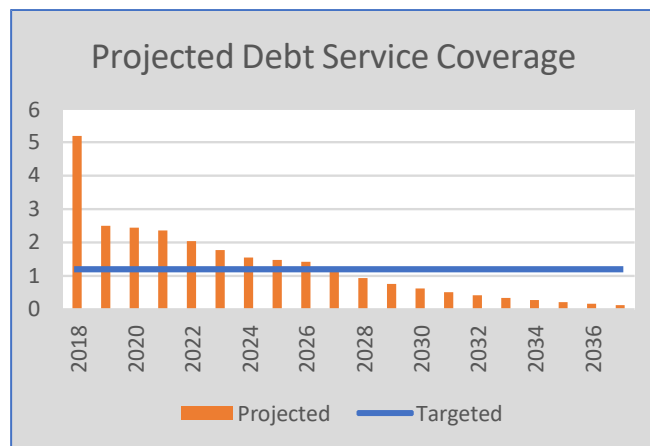
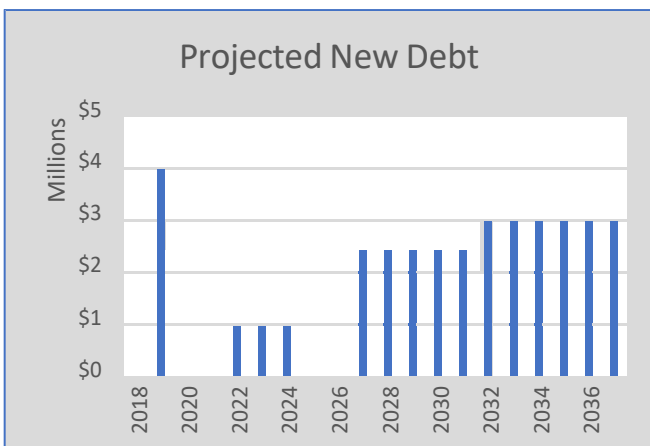
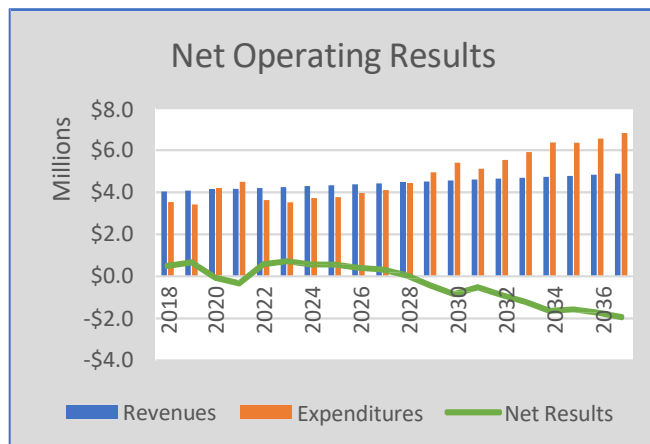
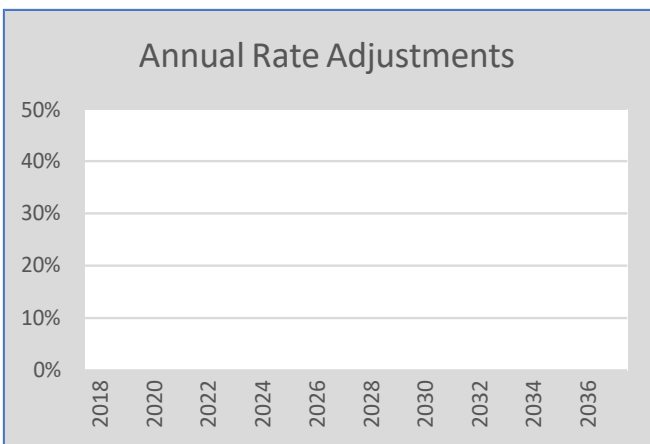
Scenario 2 Master Plan Amortized over 75 Years

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## Water System

### Scenario 2 – Master Plan Amortized over 75 Years

Rate Increase	None
Fund Approach	Current Policy - >\$500k debt funded in project year



Summary Results of Financial Pro Forma Analyses - continued

Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	-	1.20	5.19	1,362	2,548	-	1,554
2019	-	1.20	2.50	1,398	2,862	-	5,004
2020	-	1.20	2.44	1,436	2,448	-	1,085
2021	-	1.20	2.36	1,475	1,765	-	1,315
2022	-	1.20	2.04	1,515	1,990	-	1,406
2023	-	1.20	1.77	1,556	2,360	-	1,181
2024	-	1.20	1.55	1,599	2,577	-	1,251
2025	-	1.20	1.48	1,643	2,791	-	51
2026	-	1.20	1.42	1,688	2,852	-	155
2027	-	1.20	1.14	1,765	2,766	2,414	2,415
2028	-	1.20	0.93	1,844	2,344	2,475	2,553
2029	-	1.20	0.76	1,925	1,376	2,536	2,894
2030	-	1.20	0.62	2,008	(70)	2,600	3,272
2031	-	1.20	0.51	2,094	(1,255)	2,665	2,696
2032	-	1.20	0.42	2,183	(2,886)	2,732	2,981
2033	-	1.20	0.34	2,274	(4,910)	2,800	3,219
2034	-	1.20	0.27	2,368	(7,425)	2,870	3,639
2035	-	1.20	0.21	2,465	(9,945)	2,942	3,011
2036	-	1.20	0.16	2,564	(12,693)	3,015	2,985
2037	-	1.20	0.12	2,667	(15,733)	3,090	3,015

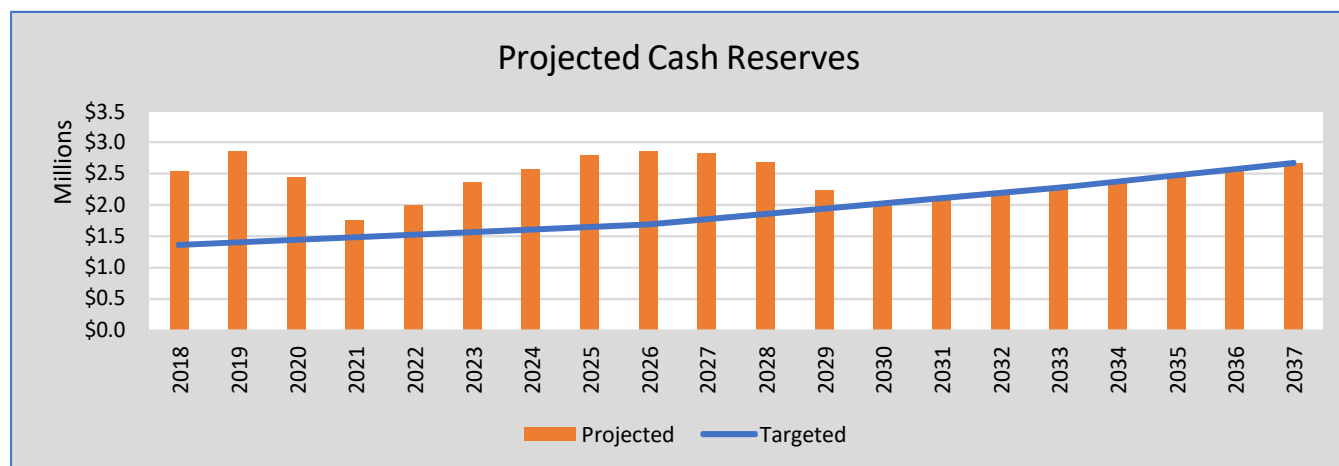
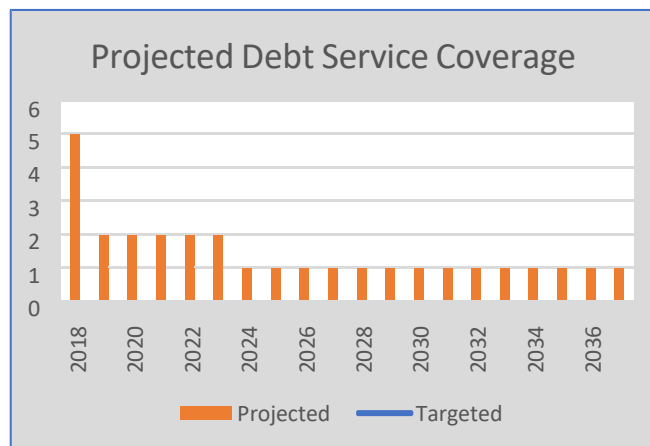
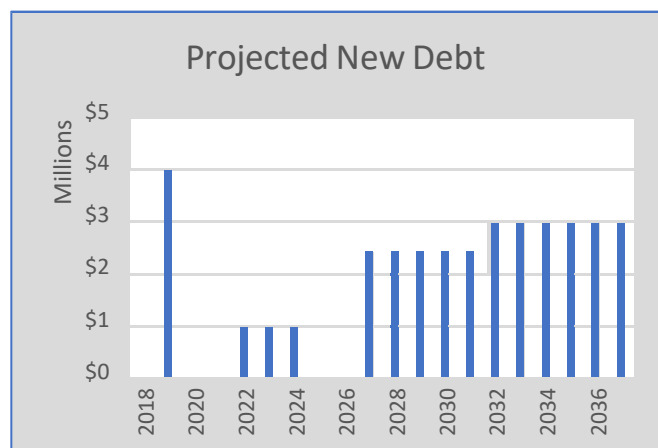
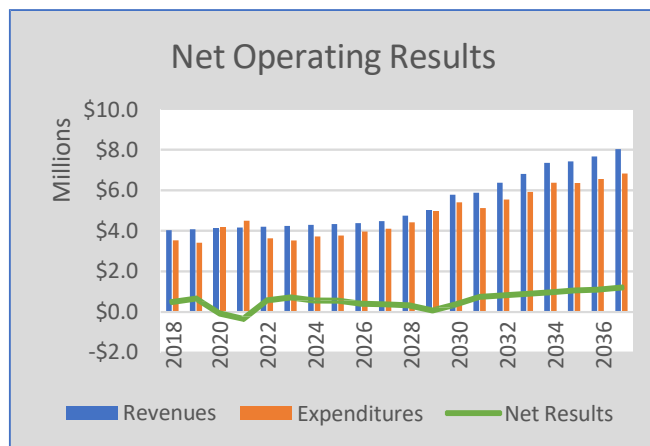
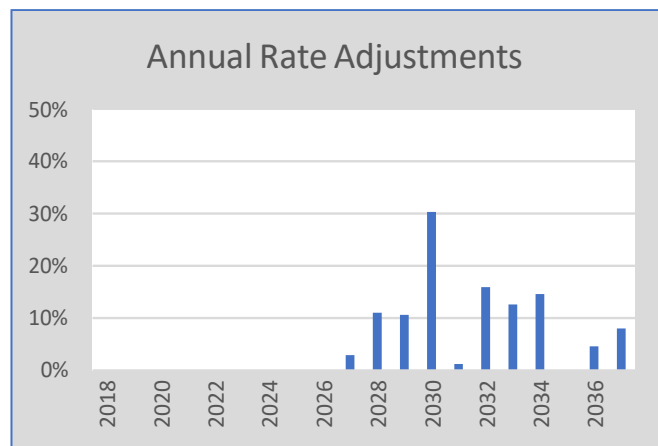
Note:

[1] Amounts shown in \$1,000's.

## Water System

### Scenario 2 – Master Plan Amortized over 75 Years

Rate Increase	Just in Time
Fund Approach	Current Policy - >\$500k debt funded in project year





Summary Results of Financial Pro Forma Analyses - continued

Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	0.00%	1.20	5.19	1,362	2,548	-	1,554
2019	0.00%	1.20	2.50	1,398	2,862	-	5,004
2020	0.00%	1.20	2.44	1,436	2,448	-	1,085
2021	0.00%	1.20	2.36	1,475	1,765	-	1,315
2022	0.00%	1.20	2.04	1,515	1,990	-	1,406
2023	0.00%	1.20	1.77	1,556	2,360	-	1,181
2024	0.00%	1.20	1.55	1,599	2,577	-	1,251
2025	0.00%	1.20	1.48	1,643	2,791	-	51
2026	0.00%	1.20	1.42	1,688	2,852	-	155
2027	2.90%	1.20	1.21	1,765	2,824	2,414	2,415
2028	11.00%	1.20	1.21	1,844	2,684	2,475	2,553
2029	10.60%	1.20	1.21	1,925	2,233	2,536	2,894
2030	30.30%	1.20	1.55	2,008	2,010	2,600	3,272
2031	1.20%	1.20	1.38	2,094	2,095	2,665	2,696
2032	15.90%	1.20	1.47	2,183	2,184	2,732	2,981
2033	12.60%	1.20	1.51	2,274	2,276	2,800	3,219
2034	14.60%	1.20	1.58	2,368	2,370	2,870	3,639
2035	0.00%	1.20	1.43	2,465	2,488	2,942	3,011
2036	4.60%	1.20	1.37	2,564	2,566	3,015	2,985
2037	8.00%	1.20	1.37	2,667	2,670	3,090	3,015

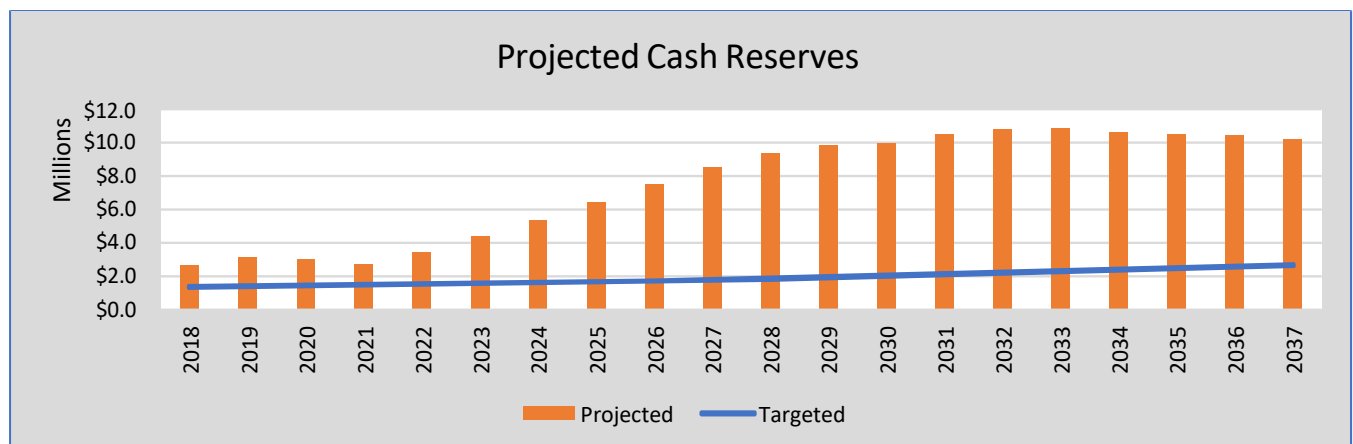
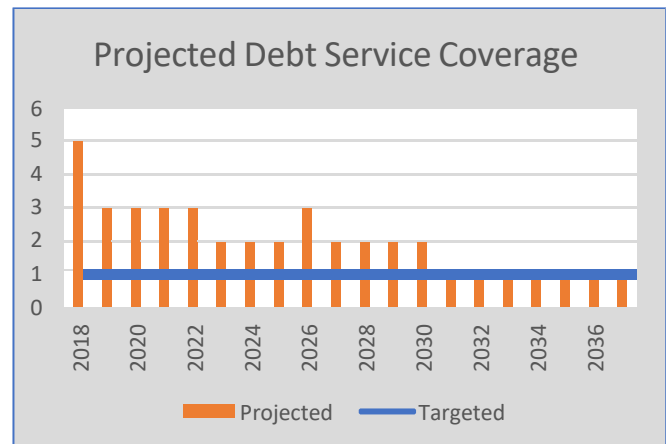
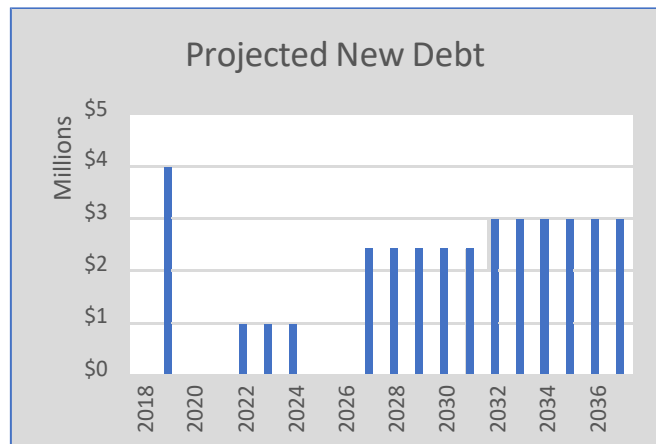
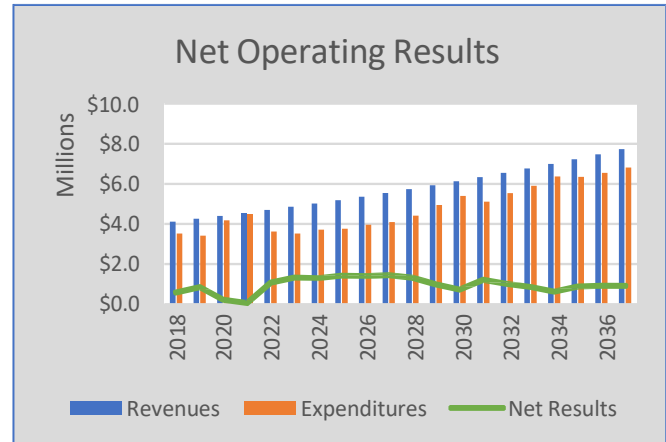
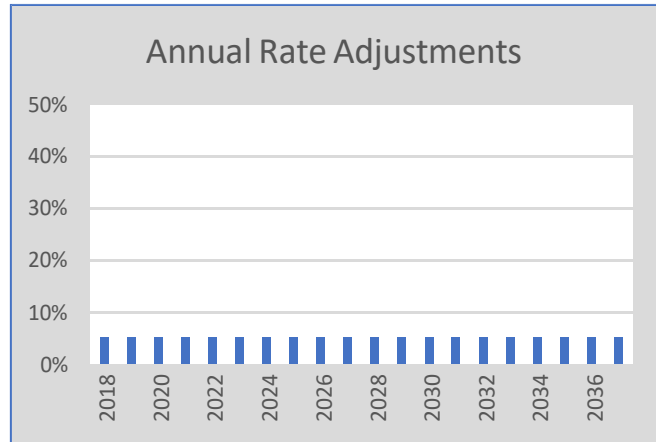
Note:

[1] Amounts shown in \$1,000's.

## Water System

### Scenario 2 – Master Plan Amortized over 75 Years

Rate Increase	Phased In (level)
Fund Approach	Current Policy - >\$500k debt funded in project year



Summary Results of Financial Pro Forma Analyses - continued

Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	5.00%	1.20	5.54	1,362	2,639	-	1,554
2019	5.00%	1.20	2.85	1,398	3,139	-	5,004
2020	5.00%	1.20	2.97	1,436	3,011	-	1,085
2021	5.00%	1.20	3.09	1,475	2,719	-	1,315
2022	5.00%	1.20	2.87	1,515	3,444	-	1,406
2023	5.00%	1.20	2.69	1,556	4,427	-	1,181
2024	5.00%	1.20	2.54	1,599	5,379	-	1,251
2025	5.00%	1.20	2.65	1,643	6,451	-	51
2026	5.00%	1.20	2.76	1,688	7,502	-	155
2027	5.00%	1.20	2.44	1,765	8,542	2,414	2,415
2028	5.00%	1.20	2.18	1,844	9,388	2,475	2,553
2029	5.00%	1.20	1.99	1,925	9,837	2,536	2,894
2030	5.00%	1.20	1.82	2,008	9,965	2,600	3,272
2031	5.00%	1.20	1.69	2,094	10,514	2,665	2,696
2032	5.00%	1.20	1.59	2,183	10,787	2,732	2,981
2033	5.00%	1.20	1.49	2,274	10,843	2,800	3,219
2034	5.00%	1.20	1.41	2,368	10,593	2,870	3,639
2035	5.00%	1.20	1.35	2,465	10,525	2,942	3,011
2036	5.00%	1.20	1.30	2,564	10,423	3,015	2,985
2037	5.00%	1.20	1.25	2,667	10,232	3,090	3,015

Note:

[1] Amounts shown in \$1,000's.

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# Water System

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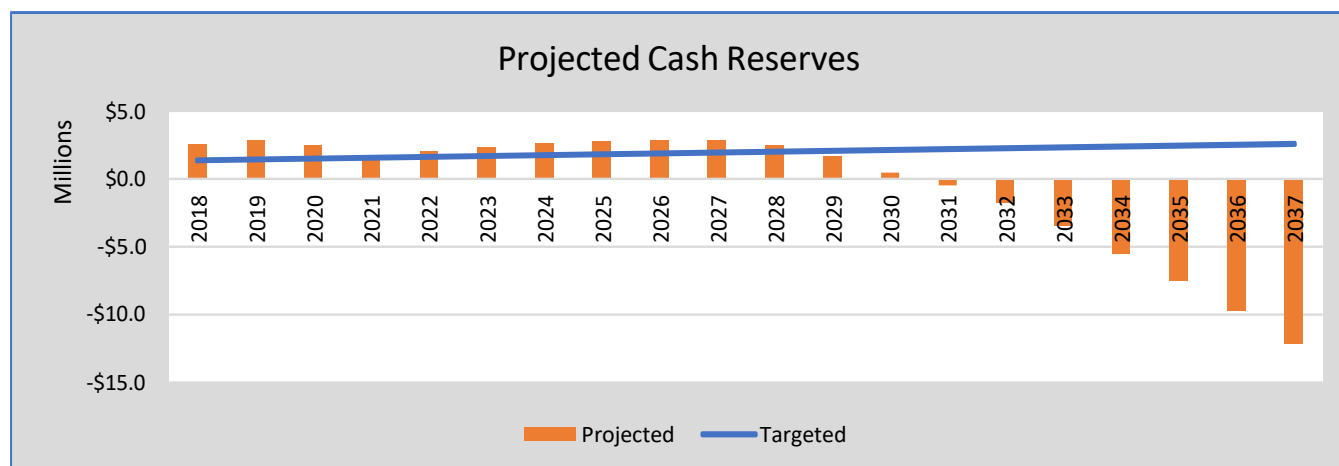
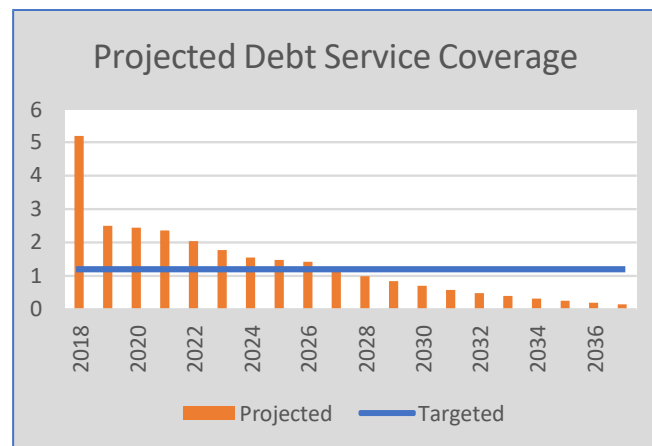
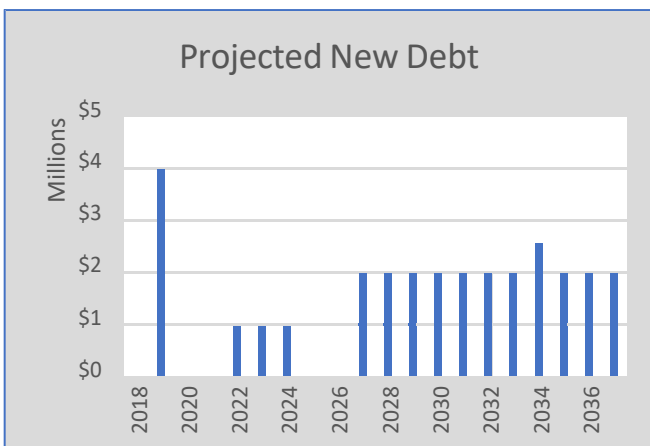
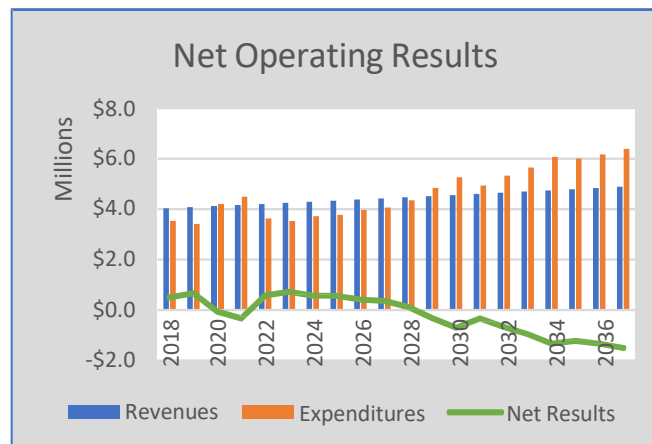
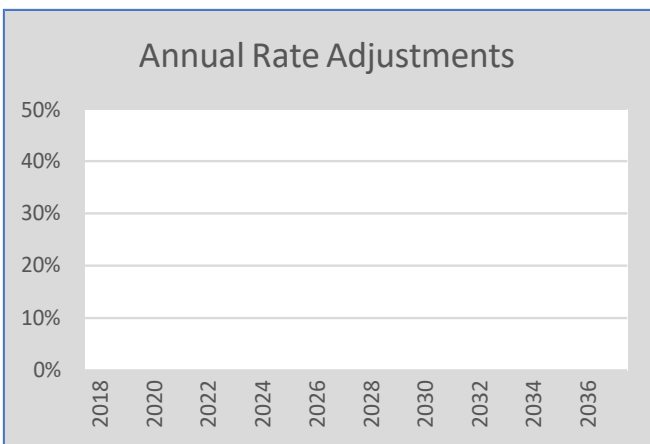
Scenario 3 Master Plan Amortized over 100 Years

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## Water System

### Scenario 3 – Master Plan Amortized over 100 Years

Rate Increase	None
Fund Approach	Current Policy - >\$500k debt funded in project year



Summary Results of Financial Pro Forma Analyses - continued

Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	-	1.20	5.19	1,362	2,548	-	1,554
2019	-	1.20	2.50	1,398	2,862	-	5,004
2020	-	1.20	2.44	1,436	2,448	-	1,085
2021	-	1.20	2.36	1,475	1,765	-	1,315
2022	-	1.20	2.04	1,515	1,990	-	1,406
2023	-	1.20	1.77	1,556	2,360	-	1,181
2024	-	1.20	1.55	1,599	2,577	-	1,251
2025	-	1.20	1.48	1,643	2,791	-	51
2026	-	1.20	1.42	1,688	2,852	-	155
2027	-	1.20	1.19	1,757	2,816	1,811	1,826
2028	-	1.20	0.99	1,828	2,495	1,856	1,950
2029	-	1.20	0.84	1,902	1,680	1,902	2,275
2030	-	1.20	0.70	1,977	443	1,950	2,638
2031	-	1.20	0.58	2,055	(479)	1,999	2,046
2032	-	1.20	0.48	2,135	(1,790)	2,049	2,314
2033	-	1.20	0.40	2,218	(3,437)	2,100	2,536
2034	-	1.20	0.32	2,303	(5,513)	2,152	2,939
2035	-	1.20	0.25	2,391	(7,538)	2,206	2,294
2036	-	1.20	0.19	2,481	(9,728)	2,261	2,250
2037	-	1.20	0.14	2,574	(12,145)	2,318	2,261

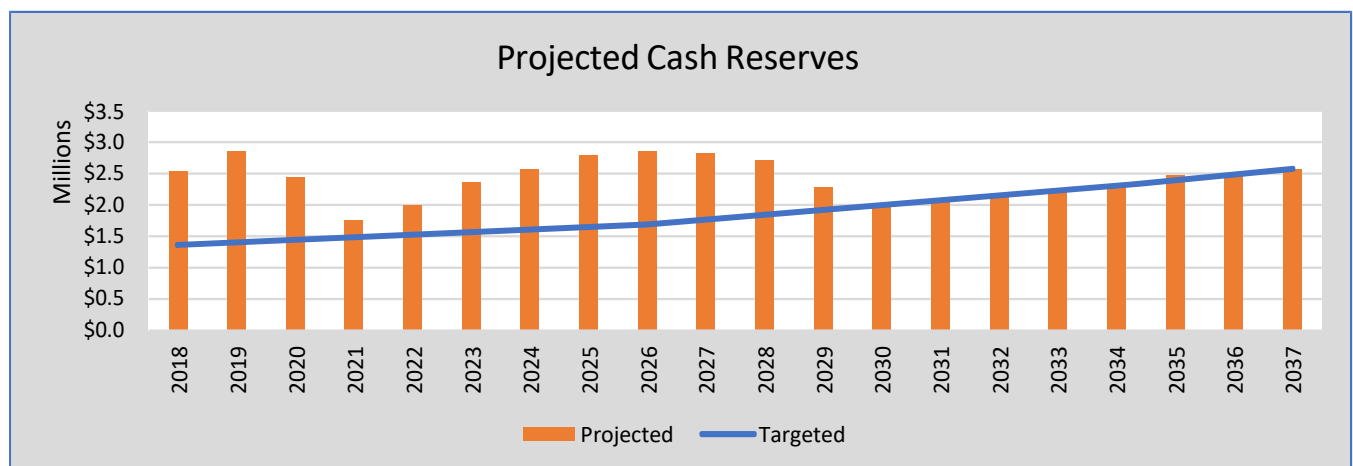
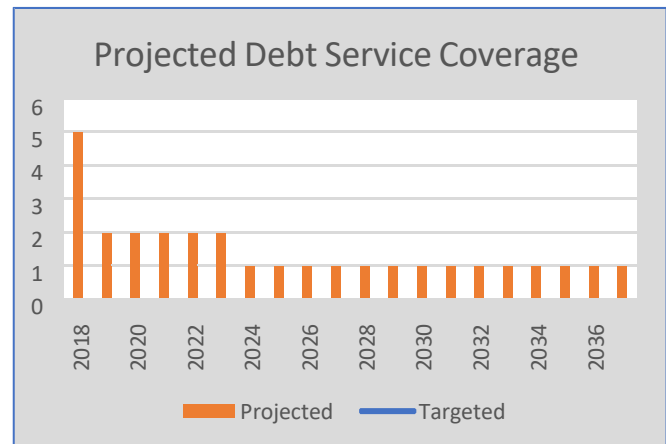
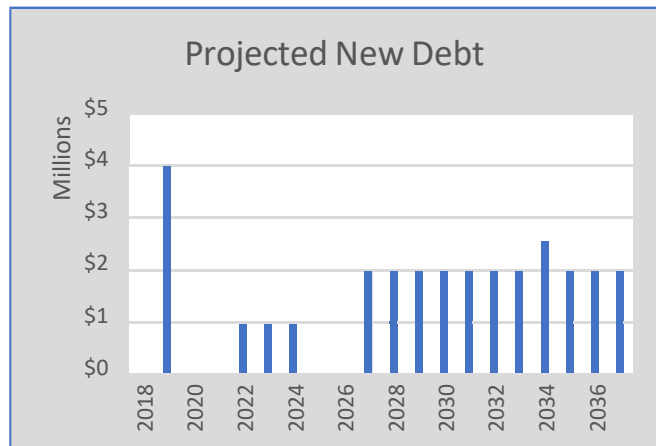
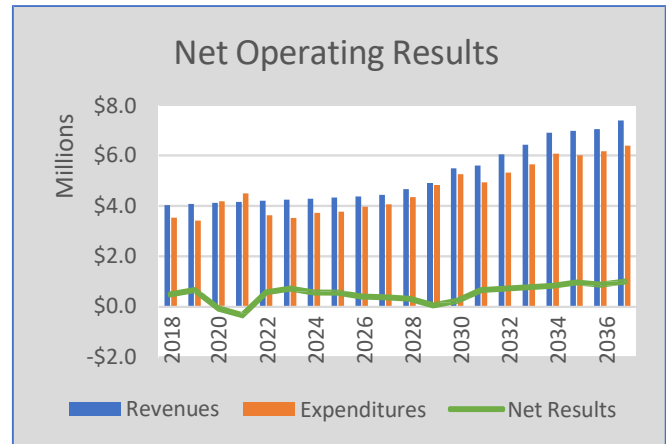
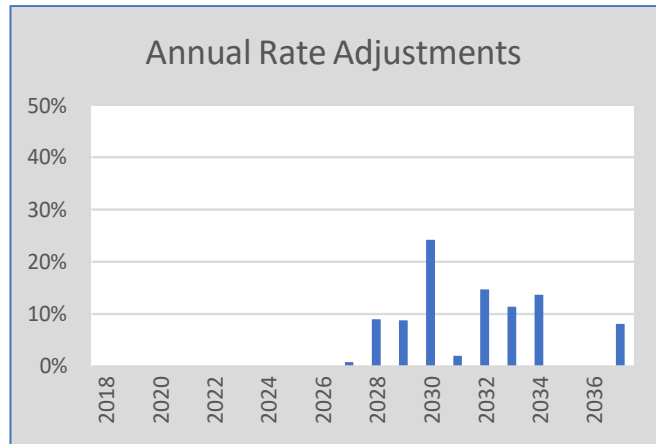
Note:

[1] Amounts shown in \$1,000's.

## Water System

### Scenario 3 – Master Plan Amortized over 100 Years

Rate Increase	Just in Time
Fund Approach	Current Policy - >\$500k debt funded in project year





Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	0.00%	1.20	5.19	1,362	2,548	-	1,554
2019	0.00%	1.20	2.50	1,398	2,862	-	5,004
2020	0.00%	1.20	2.44	1,436	2,448	-	1,085
2021	0.00%	1.20	2.36	1,475	1,765	-	1,315
2022	0.00%	1.20	2.04	1,515	1,990	-	1,406
2023	0.00%	1.20	1.77	1,556	2,360	-	1,181
2024	0.00%	1.20	1.55	1,599	2,577	-	1,251
2025	0.00%	1.20	1.48	1,643	2,791	-	51
2026	0.00%	1.20	1.42	1,688	2,852	-	155
2027	0.80%	1.20	1.21	1,757	2,832	1,811	1,826
2028	9.00%	1.20	1.21	1,828	2,708	1,856	1,950
2029	8.80%	1.20	1.21	1,902	2,281	1,902	2,275
2030	24.20%	1.20	1.50	1,977	1,979	1,950	2,638
2031	2.00%	1.20	1.36	2,055	2,056	1,999	2,046
2032	14.70%	1.20	1.47	2,135	2,136	2,049	2,314
2033	11.40%	1.20	1.52	2,218	2,219	2,100	2,536
2034	13.70%	1.20	1.60	2,303	2,305	2,152	2,939
2035	0.00%	1.20	1.46	2,391	2,469	2,206	2,294
2036	0.00%	1.20	1.33	2,481	2,491	2,261	2,250
2037	8.10%	1.20	1.35	2,574	2,576	2,318	2,261

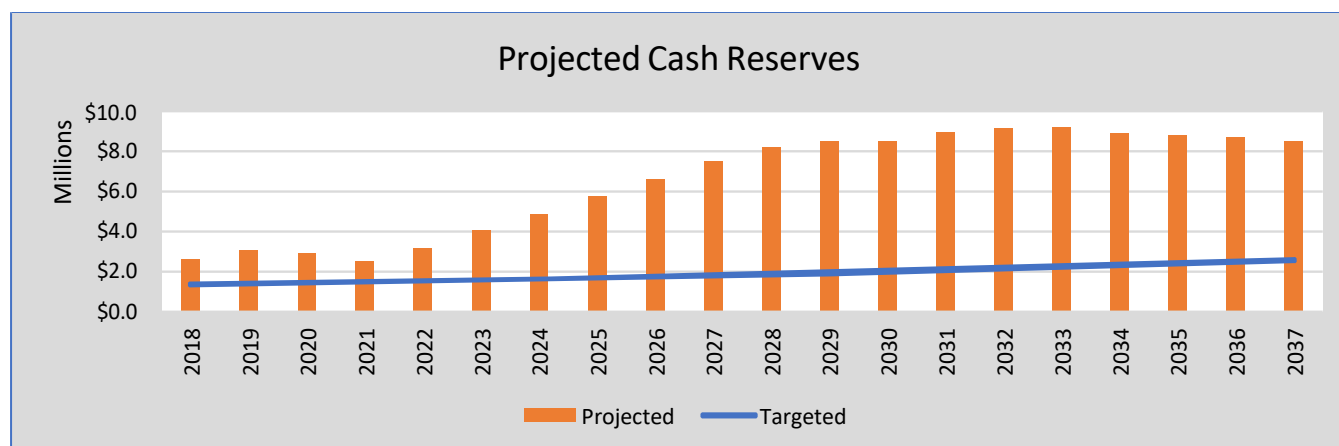
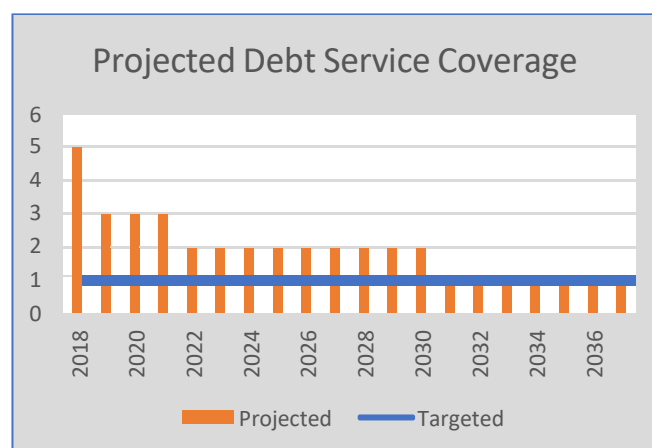
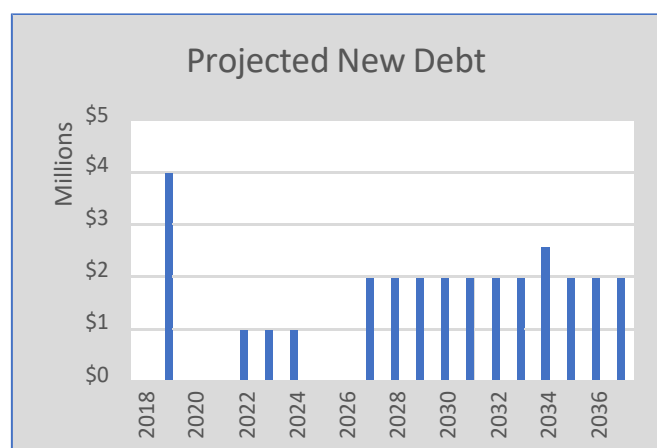
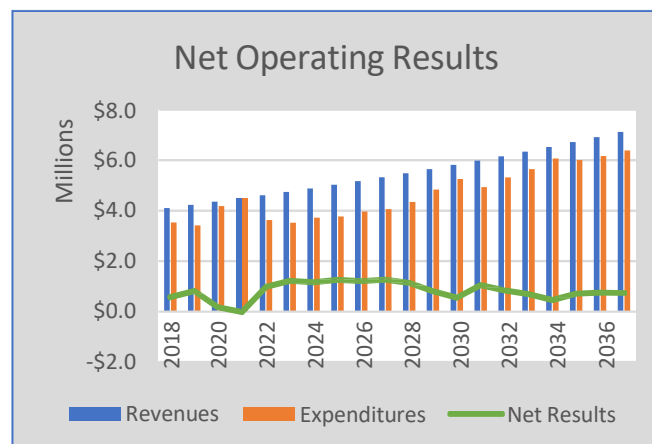
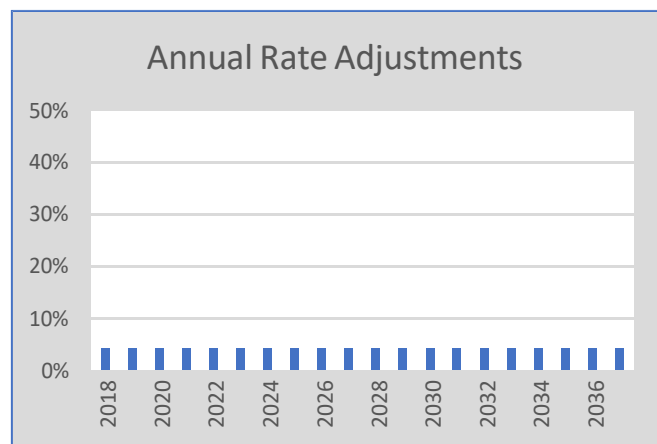
Note:

[1] Amounts shown in \$1,000's.

## Water System

### Scenario 3 – Master Plan Amortized over 100 Years

Rate Increase	Phased In (level)
Fund Approach	Current Policy - >\$500k debt funded in project year



Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	4.10%	1.20	5.48	1,362	2,623	-	1,554
2019	4.10%	1.20	2.79	1,398	3,089	-	5,004
2020	4.10%	1.20	2.87	1,436	2,908	-	1,085
2021	4.10%	1.20	2.96	1,475	2,544	-	1,315
2022	4.10%	1.20	2.71	1,515	3,175	-	1,406
2023	4.10%	1.20	2.52	1,556	4,042	-	1,181
2024	4.10%	1.20	2.35	1,599	4,853	-	1,251
2025	4.10%	1.20	2.43	1,643	5,760	-	51
2026	4.10%	1.20	2.50	1,688	6,618	-	155
2027	4.10%	1.20	2.27	1,757	7,487	1,811	1,826
2028	4.10%	1.20	2.08	1,828	8,182	1,856	1,950
2029	4.10%	1.20	1.92	1,902	8,501	1,902	2,275
2030	4.10%	1.20	1.77	1,977	8,518	1,950	2,638
2031	4.10%	1.20	1.66	2,055	8,976	1,999	2,046
2032	4.10%	1.20	1.56	2,135	9,176	2,049	2,314
2033	4.10%	1.20	1.47	2,218	9,178	2,100	2,536
2034	4.10%	1.20	1.38	2,303	8,890	2,152	2,939
2035	4.10%	1.20	1.32	2,391	8,801	2,206	2,294
2036	4.10%	1.20	1.27	2,481	8,694	2,261	2,250
2037	4.10%	1.20	1.22	2,574	8,514	2,318	2,261

Note:

[1] Amounts shown in \$1,000's.

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# Sewer System

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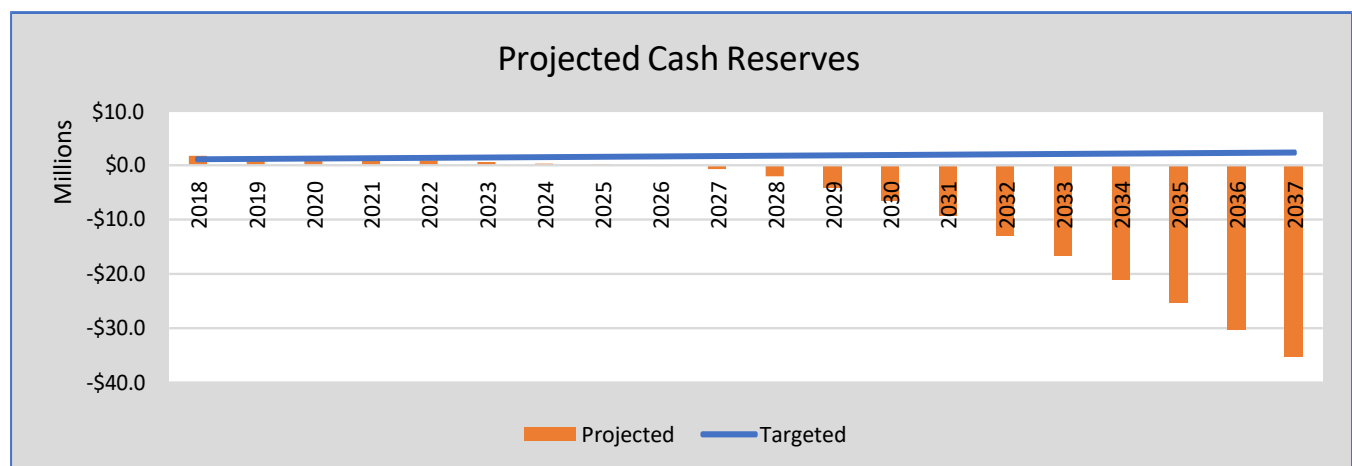
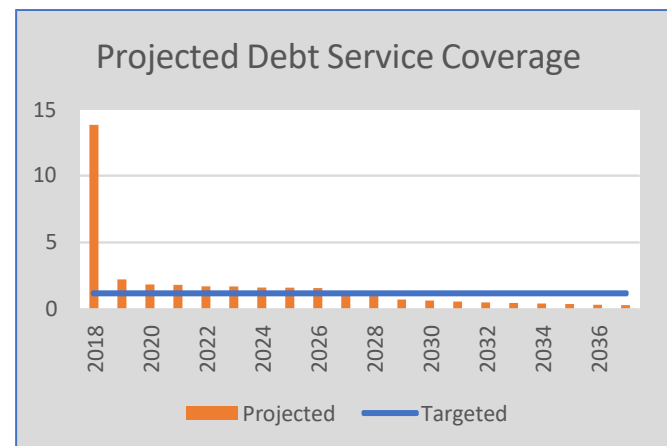
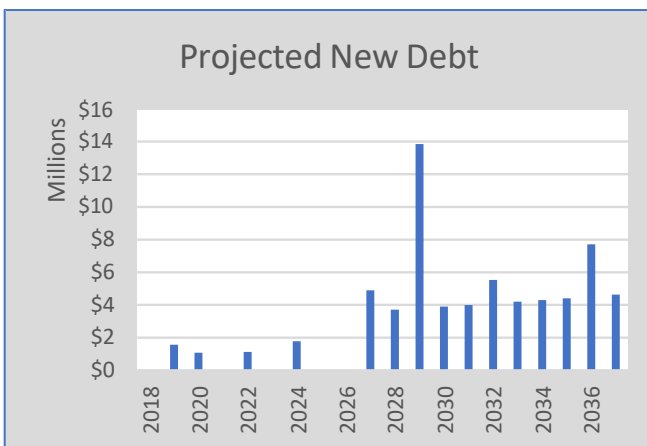
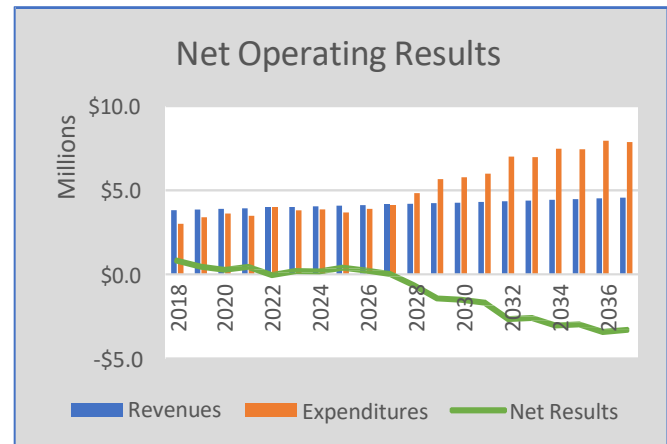
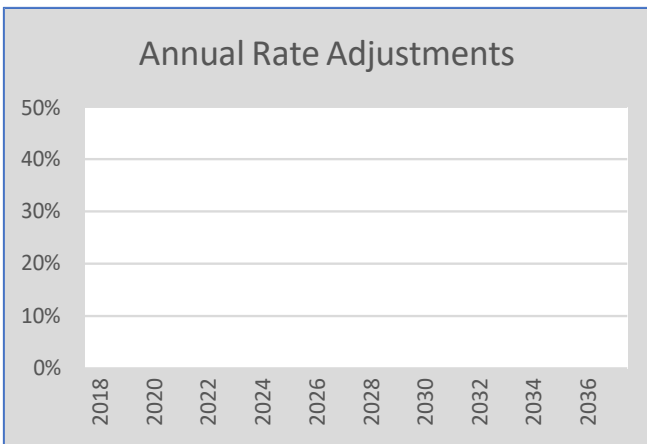
Scenario 1 Master Plan Amortized over 50 Years

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## Sewer System

### Scenario 1 – Master Plan Amortized over 50 Years

Rate Increase	None
Fund Approach	Current Policy - >\$500k debt funded in project year



Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	-	1.20	13.80	1,121	1,713	-	1,074
2019	-	1.20	2.23	1,138	1,672	-	2,216
2020	-	1.20	1.85	1,165	1,451	-	1,711
2021	-	1.20	1.83	1,193	1,403	-	470
2022	-	1.20	1.72	1,223	863	-	1,983
2023	-	1.20	1.71	1,253	564	-	623
2024	-	1.20	1.63	1,284	249	-	2,316
2025	-	1.20	1.61	1,316	149	-	333
2026	-	1.20	1.59	1,350	(122)	-	476
2027	-	1.20	1.26	1,429	(687)	3,635	5,161
2028	-	1.20	1.07	1,510	(2,006)	3,726	4,414
2029	-	1.20	0.71	1,594	(4,208)	3,819	14,296
2030	-	1.20	0.64	1,680	(6,588)	3,915	4,363
2031	-	1.20	0.57	1,769	(9,242)	4,013	4,360
2032	-	1.20	0.50	1,860	(12,974)	4,113	6,485
2033	-	1.20	0.46	1,954	(16,743)	4,216	4,818
2034	-	1.20	0.41	2,050	(21,069)	4,321	5,075
2035	-	1.20	0.38	2,150	(25,437)	4,429	4,828
2036	-	1.20	0.33	2,252	(30,372)	4,540	8,014
2037	-	1.20	0.30	2,356	(35,307)	4,654	4,567

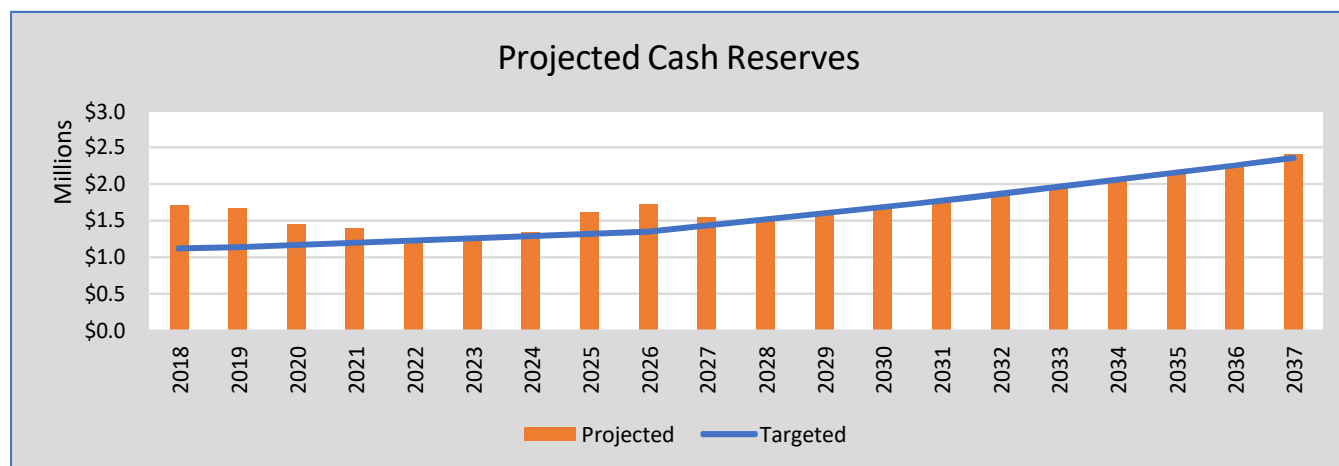
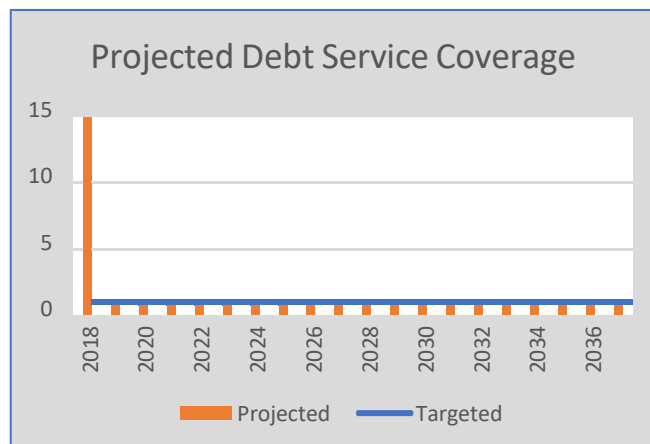
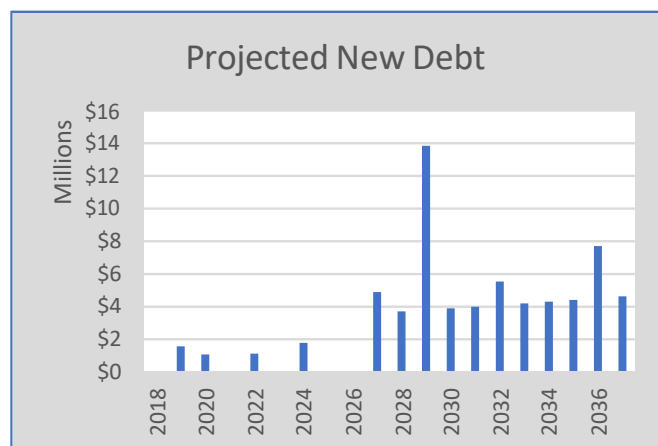
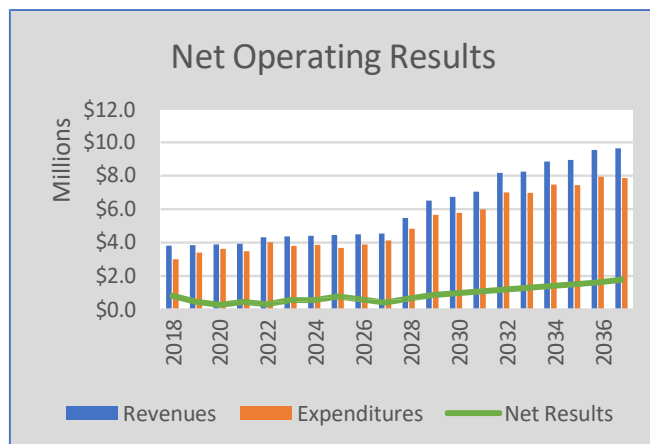
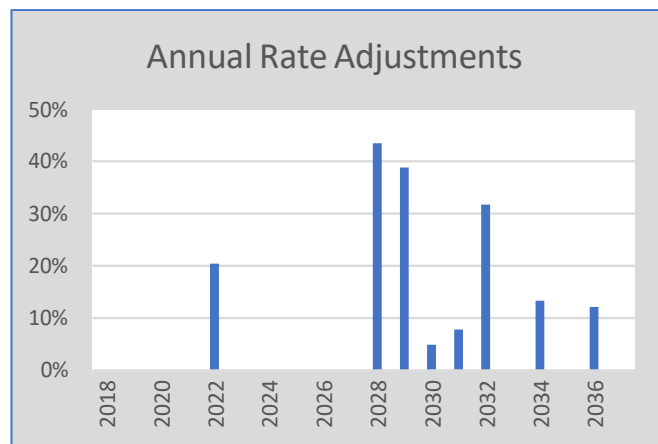
Note:

[1] Amounts shown in \$1,000's.

## Sewer System

### Scenario 1 – Master Plan Amortized over 50 Years

Rate Increase	Just in Time
Fund Approach	Current Policy - >\$500k debt funded in project year





Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	0.00%	1.20	13.80	1,121	1,713	-	1,074
2019	0.00%	1.20	2.23	1,138	1,672	-	2,216
2020	0.00%	1.20	1.85	1,165	1,451	-	1,711
2021	0.00%	1.20	1.83	1,193	1,403	-	470
2022	20.40%	1.20	2.03	1,223	1,224	-	1,983
2023	0.00%	1.20	2.03	1,253	1,290	-	623
2024	0.00%	1.20	1.95	1,284	1,344	-	2,316
2025	0.00%	1.20	1.93	1,316	1,619	-	333
2026	0.00%	1.20	1.91	1,350	1,726	-	476
2027	0.00%	1.20	1.52	1,429	1,544	3,635	5,161
2028	43.40%	1.20	1.85	1,510	1,511	3,726	4,414
2029	38.80%	1.20	1.64	1,594	1,596	3,819	14,296
2030	4.90%	1.20	1.55	1,680	1,682	3,915	4,363
2031	7.80%	1.20	1.51	1,769	1,769	4,013	4,360
2032	31.70%	1.20	1.68	1,860	1,861	4,113	6,485
2033	0.00%	1.20	1.56	1,954	1,955	4,216	4,818
2034	13.30%	1.20	1.60	2,050	2,054	4,321	5,075
2035	0.00%	1.20	1.50	2,150	2,156	4,429	4,828
2036	12.10%	1.20	1.47	2,252	2,254	4,540	8,014
2037	0.00%	1.20	1.38	2,356	2,403	4,654	4,567

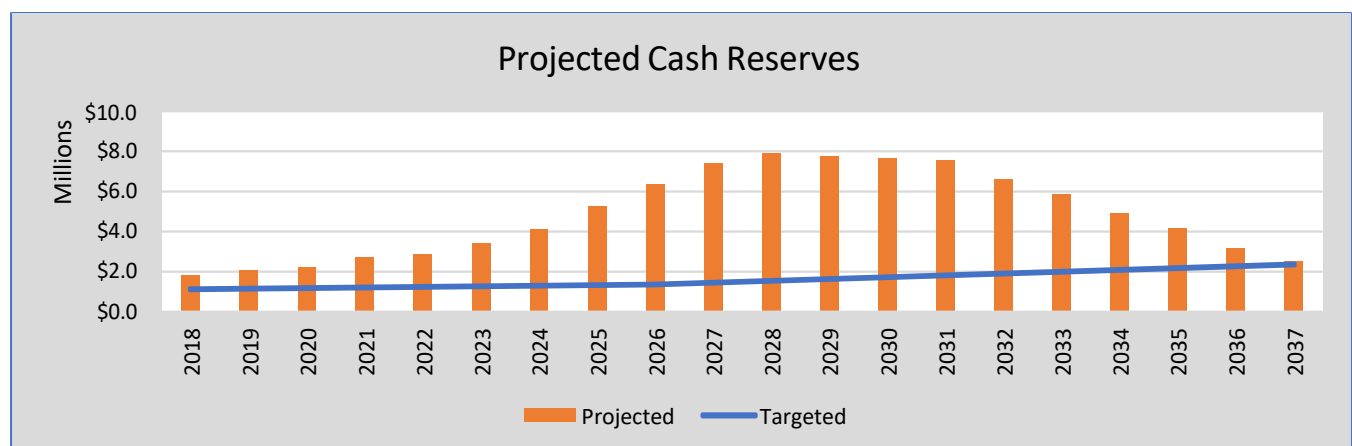
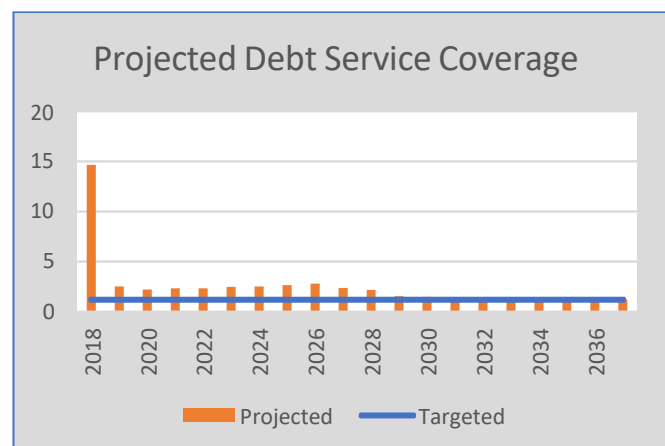
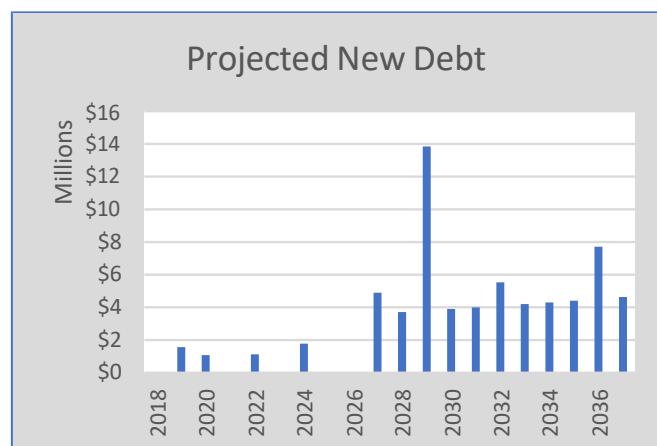
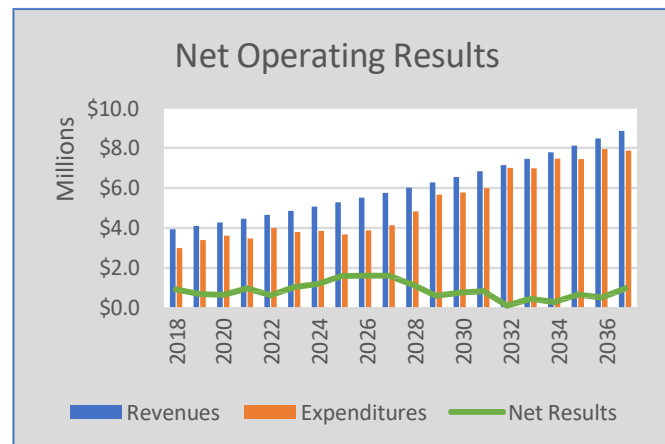
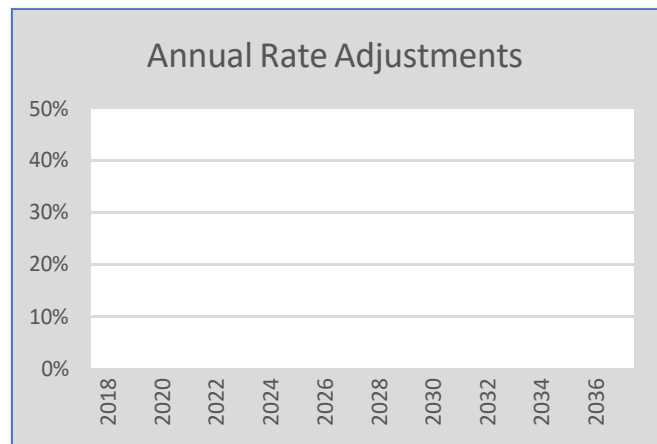
Note:

[1] Amounts shown in \$1,000's.

## Sewer System

### Scenario 1 – Master Plan Amortized over 50 Years

Rate Increase	Phased In (level)
Fund Approach	Current Policy - >\$500k debt funded in project year



Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	7.25%	1.20	14.64	1,121	1,836	-	1,074
2019	7.25%	1.20	2.51	1,138	2,049	-	2,216
2020	7.25%	1.20	2.21	1,165	2,219	-	1,711
2021	7.25%	1.20	2.33	1,193	2,709	-	470
2022	7.25%	1.20	2.32	1,223	2,861	-	1,983
2023	7.25%	1.20	2.47	1,253	3,417	-	623
2024	7.25%	1.20	2.51	1,284	4,130	-	2,316
2025	7.25%	1.20	2.65	1,316	5,240	-	333
2026	7.25%	1.20	2.79	1,350	6,371	-	476
2027	7.25%	1.20	2.36	1,429	7,411	3,635	5,161
2028	7.25%	1.20	2.17	1,510	7,911	3,726	4,414
2029	7.25%	1.20	1.54	1,594	7,754	3,819	14,296
2030	7.25%	1.20	1.48	1,680	7,657	3,915	4,363
2031	7.25%	1.20	1.44	1,769	7,534	4,013	4,360
2032	7.25%	1.20	1.36	1,860	6,591	4,113	6,485
2033	7.25%	1.20	1.33	1,954	5,880	4,216	4,818
2034	7.25%	1.20	1.31	2,050	4,897	4,321	5,075
2035	7.25%	1.20	1.29	2,150	4,171	4,429	4,828
2036	7.25%	1.20	1.22	2,252	3,192	4,540	8,014
2037	7.25%	1.20	1.21	2,356	2,544	4,654	4,567

Note:

[1] Amounts shown in \$1,000's.

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# Sewer System

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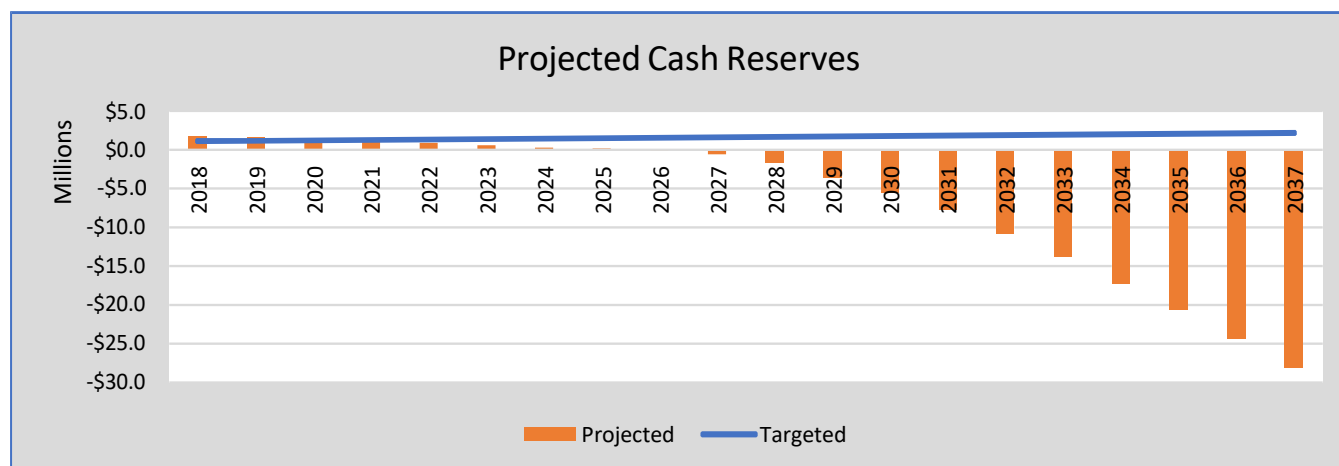
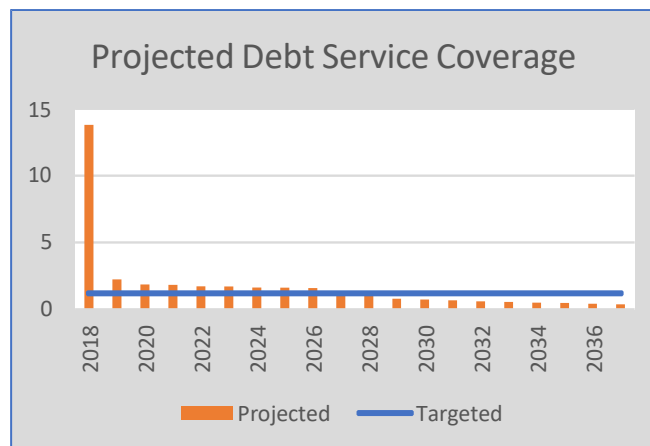
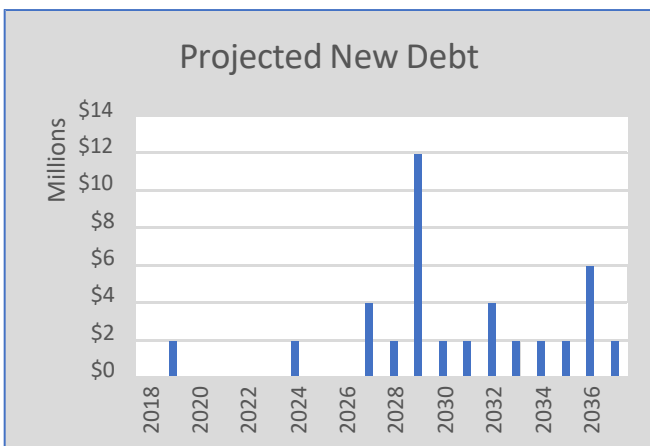
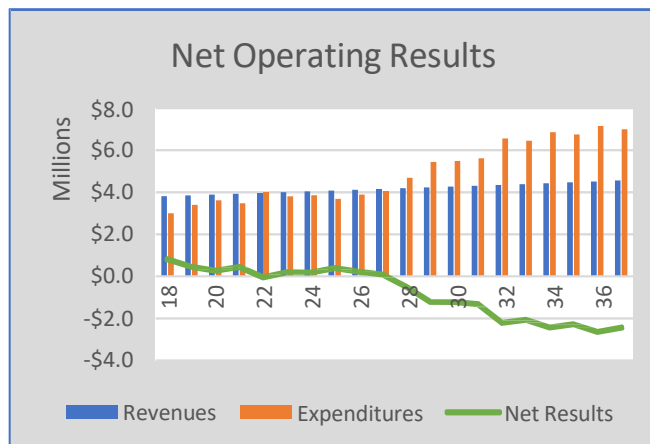
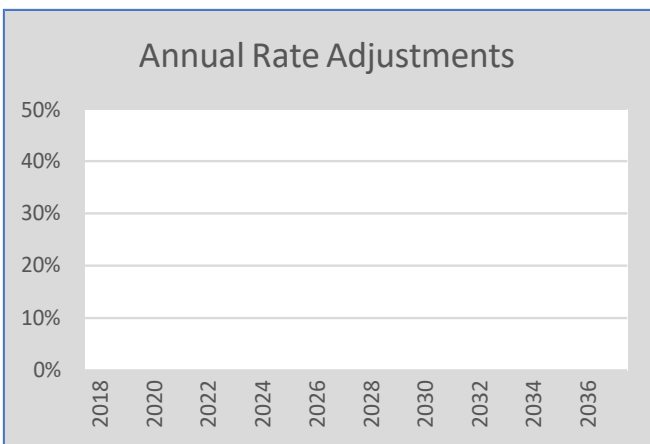
Scenario 2 Master Plan Amortized over 75 Years

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## Sewer System

### Scenario 2 – Master Plan Amortized over 75 Years

Rate Increase	None
Fund Approach	Current Policy - >\$500k debt funded in project year



Summary Results of Financial Pro Forma Analyses - continued

Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	-	1.20	13.80	1,121	1,713	-	1,074
2019	-	1.20	2.23	1,138	1,672	-	2,216
2020	-	1.20	1.85	1,165	1,451	-	1,711
2021	-	1.20	1.83	1,193	1,403	-	470
2022	-	1.20	1.72	1,223	863	-	1,983
2023	-	1.20	1.71	1,253	564	-	623
2024	-	1.20	1.63	1,284	249	-	2,316
2025	-	1.20	1.61	1,316	149	-	333
2026	-	1.20	1.59	1,350	(122)	-	476
2027	-	1.20	1.32	1,414	(587)	2,424	3,979
2028	-	1.20	1.17	1,480	(1,703)	2,484	3,202
2029	-	1.20	0.78	1,548	(3,598)	2,546	13,054
2030	-	1.20	0.71	1,618	(5,562)	2,610	3,090
2031	-	1.20	0.65	1,690	(7,691)	2,675	3,055
2032	-	1.20	0.58	1,765	(10,784)	2,742	5,147
2033	-	1.20	0.54	1,841	(13,799)	2,811	3,447
2034	-	1.20	0.49	1,920	(17,251)	2,881	3,669
2035	-	1.20	0.46	2,001	(20,624)	2,953	3,388
2036	-	1.20	0.40	2,084	(24,438)	3,027	6,538
2037	-	1.20	0.36	2,170	(28,125)	3,102	3,054

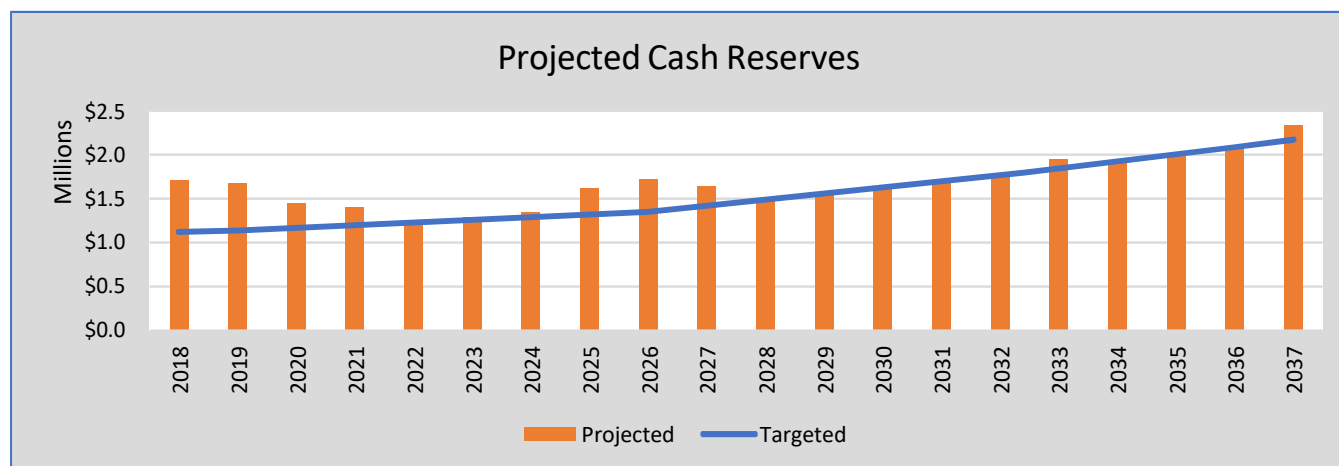
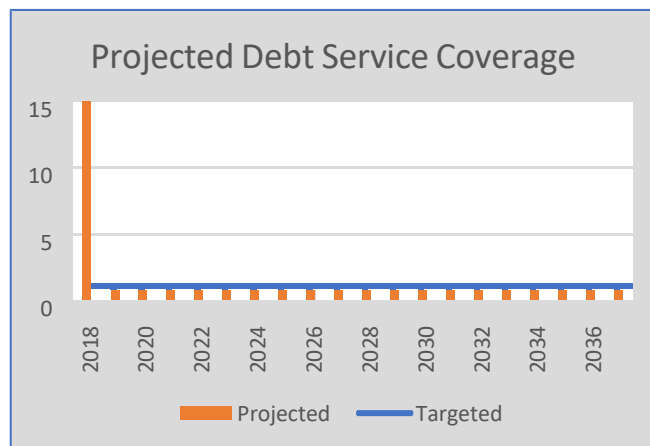
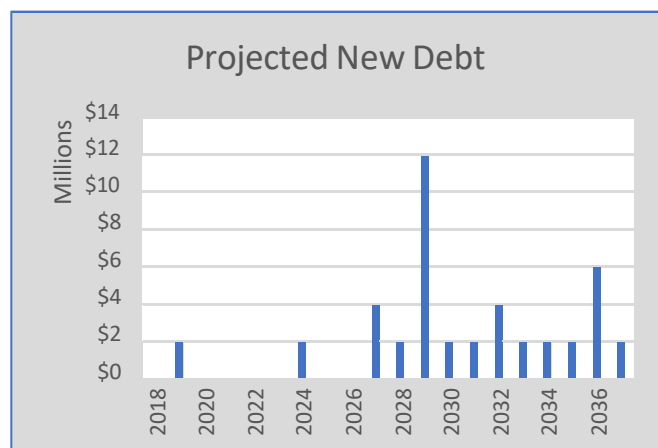
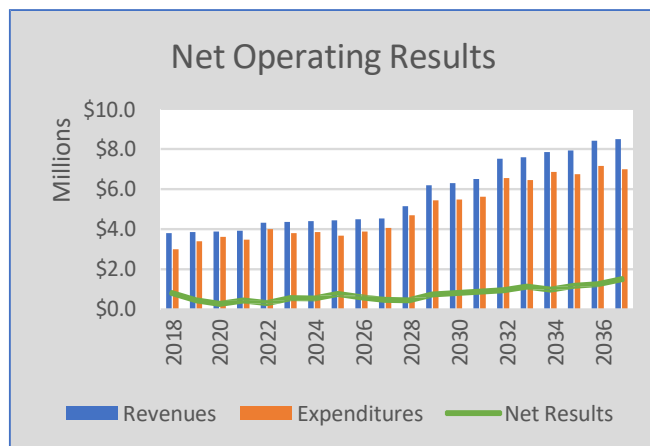
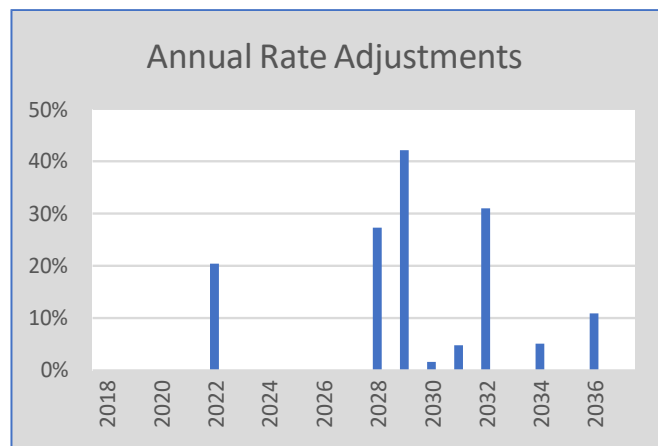
Note:

[1] Amounts shown in \$1,000's.

## Sewer System

### Scenario 2 – Master Plan Amortized over 75 Years

Rate Increase	Just in Time
Fund Approach	Current Policy - >\$500k debt funded in project year



Summary Results of Financial Pro Forma Analyses - continued

Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	0.00%	1.20	13.80	1,121	1,713	-	1,074
2019	0.00%	1.20	2.23	1,138	1,672	-	2,216
2020	0.00%	1.20	1.85	1,165	1,451	-	1,711
2021	0.00%	1.20	1.83	1,193	1,403	-	470
2022	20.40%	1.20	2.03	1,223	1,224	-	1,983
2023	0.00%	1.20	2.03	1,253	1,290	-	623
2024	0.00%	1.20	1.95	1,284	1,344	-	2,316
2025	0.00%	1.20	1.93	1,316	1,619	-	333
2026	0.00%	1.20	1.91	1,350	1,726	-	476
2027	0.00%	1.20	1.60	1,414	1,645	2,424	3,979
2028	27.30%	1.20	1.80	1,480	1,481	2,484	3,202
2029	42.10%	1.20	1.65	1,548	1,550	2,546	13,054
2030	1.60%	1.20	1.56	1,618	1,620	2,610	3,090
2031	4.80%	1.20	1.51	1,690	1,691	2,675	3,055
2032	31.00%	1.20	1.72	1,765	1,768	2,742	5,147
2033	0.00%	1.20	1.62	1,841	1,955	2,811	3,447
2034	5.10%	1.20	1.59	1,920	1,921	2,881	3,669
2035	0.00%	1.20	1.51	2,001	2,002	2,953	3,388
2036	10.90%	1.20	1.47	2,084	2,085	3,027	6,538
2037	0.00%	1.20	1.40	2,170	2,336	3,102	3,054

Note:

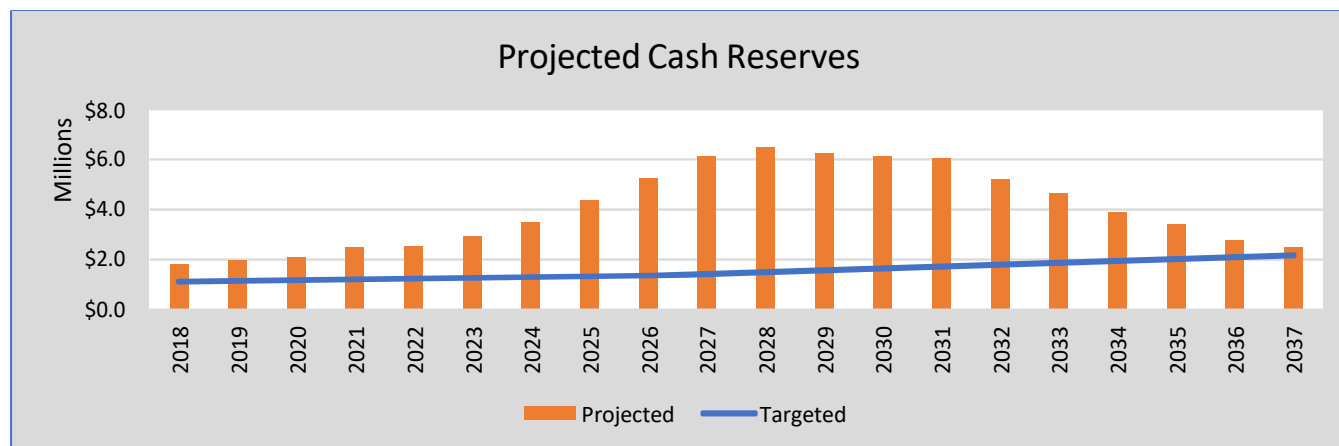
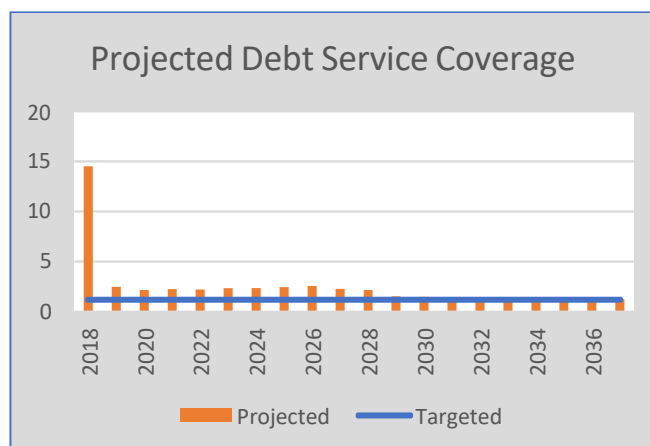
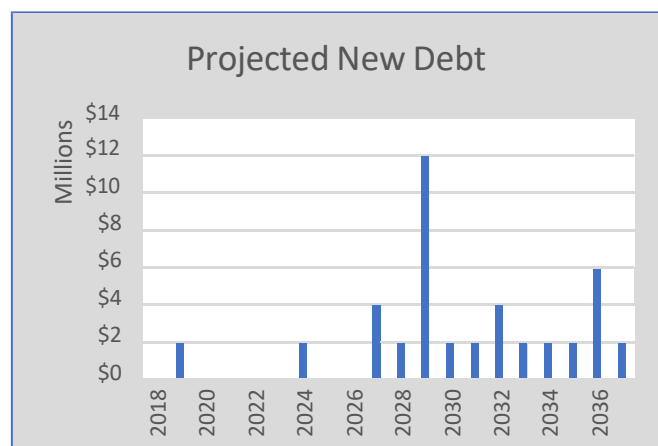
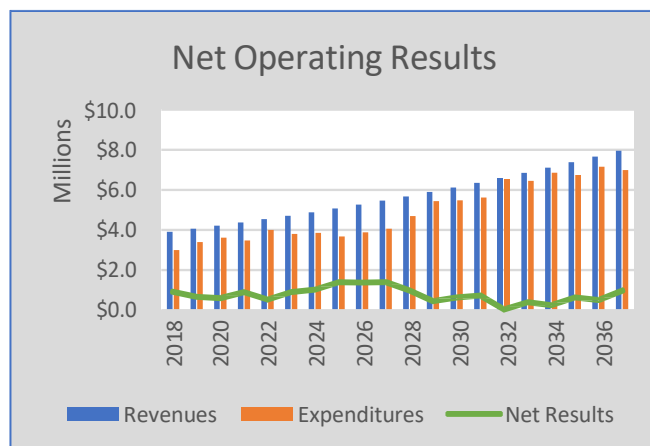
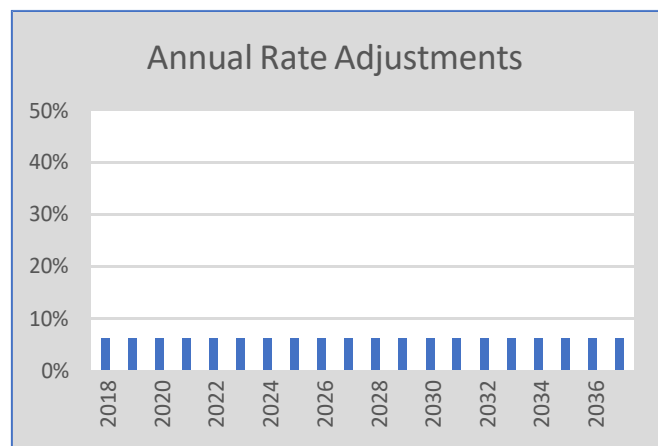
[1] Amounts shown in \$1,000's.



## Sewer System

### Scenario 2 – Master Plan Amortized over 75 Years

Rate Increase	Phased In (level)
Fund Approach	Current Policy - >\$500k debt funded in project year



Summary Results of Financial Pro Forma Analyses - continued

Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	6.10%	1.20	14.51	1,121	1,817	-	1,074
2019	6.10%	1.20	2.47	1,138	1,988	-	2,216
2020	6.10%	1.20	2.15	1,165	2,095	-	1,711
2021	6.10%	1.20	2.25	1,193	2,495	-	470
2022	6.10%	1.20	2.22	1,223	2,531	-	1,983
2023	6.10%	1.20	2.34	1,253	2,942	-	623
2024	6.10%	1.20	2.36	1,284	3,476	-	2,316
2025	6.10%	1.20	2.46	1,316	4,374	-	333
2026	6.10%	1.20	2.57	1,350	5,255	-	476
2027	6.10%	1.20	2.27	1,414	6,105	2,424	3,979
2028	6.10%	1.20	2.15	1,480	6,475	2,484	3,202
2029	6.10%	1.20	1.52	1,548	6,246	2,546	13,054
2030	6.10%	1.20	1.48	1,618	6,135	2,610	3,090
2031	6.10%	1.20	1.45	1,690	6,055	2,675	3,055
2032	6.10%	1.20	1.39	1,765	5,213	2,742	5,147
2033	6.10%	1.20	1.37	1,841	4,659	2,811	3,447
2034	6.10%	1.20	1.35	1,920	3,887	2,881	3,669
2035	6.10%	1.20	1.34	2,001	3,425	2,953	3,388
2036	6.10%	1.20	1.26	2,084	2,761	3,027	6,538
2037	6.10%	1.20	1.26	2,170	2,478	3,102	3,054

Note:

[1] Amounts shown in \$1,000's.

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# Sewer System

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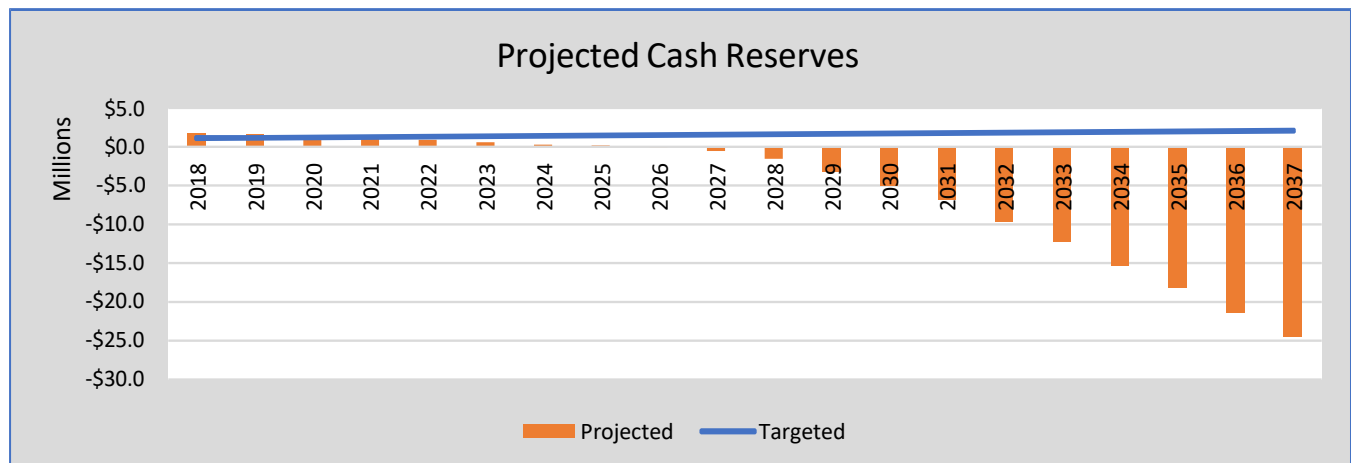
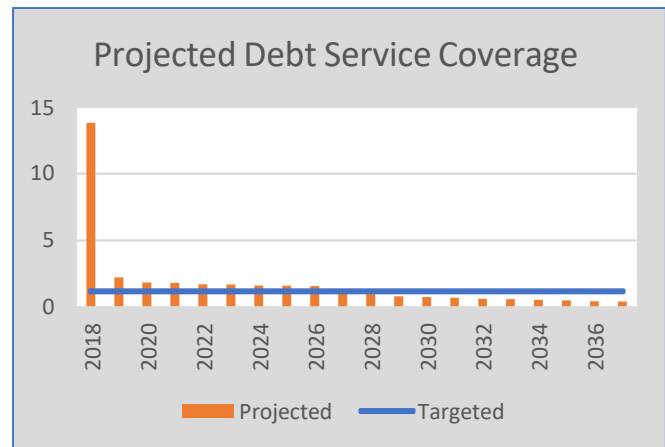
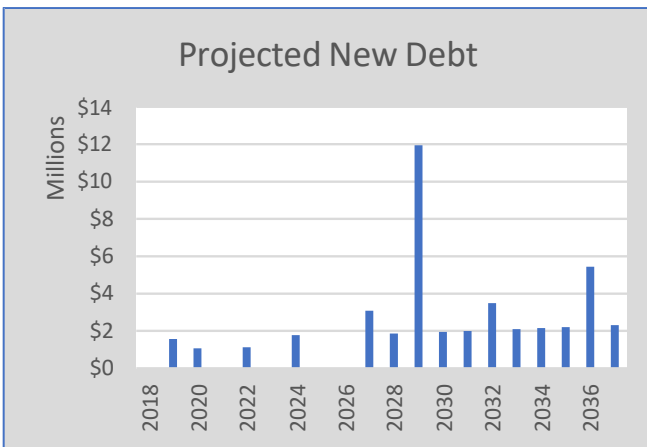
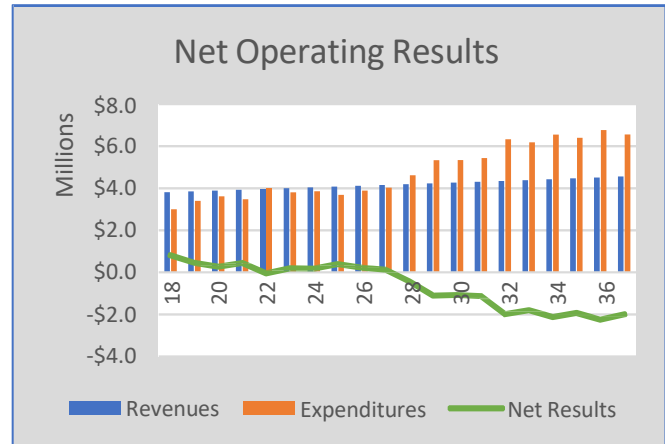
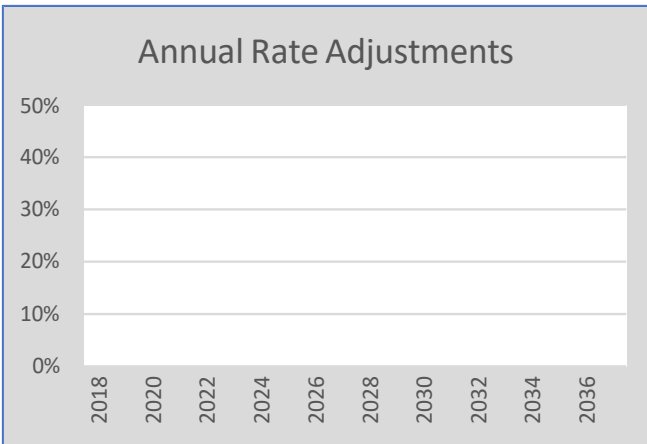
Scenario 3 Master Plan Amortized over 100 Years

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## Sewer System

### Scenario 3 – Master Plan Amortized over 100 Years

Rate Increase	None
Fund Approach	Current Policy - >\$500k debt funded in project year



Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	-	1.20	13.80	1,121	1,713	-	1,074
2019	-	1.20	2.23	1,138	1,672	-	2,216
2020	-	1.20	1.85	1,165	1,451	-	1,711
2021	-	1.20	1.83	1,193	1,403	-	470
2022	-	1.20	1.72	1,223	863	-	1,983
2023	-	1.20	1.71	1,253	564	-	623
2024	-	1.20	1.63	1,284	249	-	2,316
2025	-	1.20	1.61	1,316	149	-	333
2026	-	1.20	1.59	1,350	(122)	-	476
2027	-	1.20	1.35	1,407	(537)	1,818	3,388
2028	-	1.20	1.23	1,465	(1,552)	1,863	2,596
2029	-	1.20	0.82	1,525	(3,291)	1,910	12,433
2030	-	1.20	0.76	1,587	(5,047)	1,957	2,453
2031	-	1.20	0.70	1,651	(6,912)	2,006	2,402
2032	-	1.20	0.63	1,717	(9,686)	2,057	4,478
2033	-	1.20	0.59	1,785	(12,322)	2,108	2,761
2034	-	1.20	0.55	1,855	(15,336)	2,161	2,967
2035	-	1.20	0.51	1,926	(18,209)	2,215	2,667
2036	-	1.20	0.44	2,000	(21,462)	2,270	5,800
2037	-	1.20	0.41	2,077	(24,522)	2,327	2,297

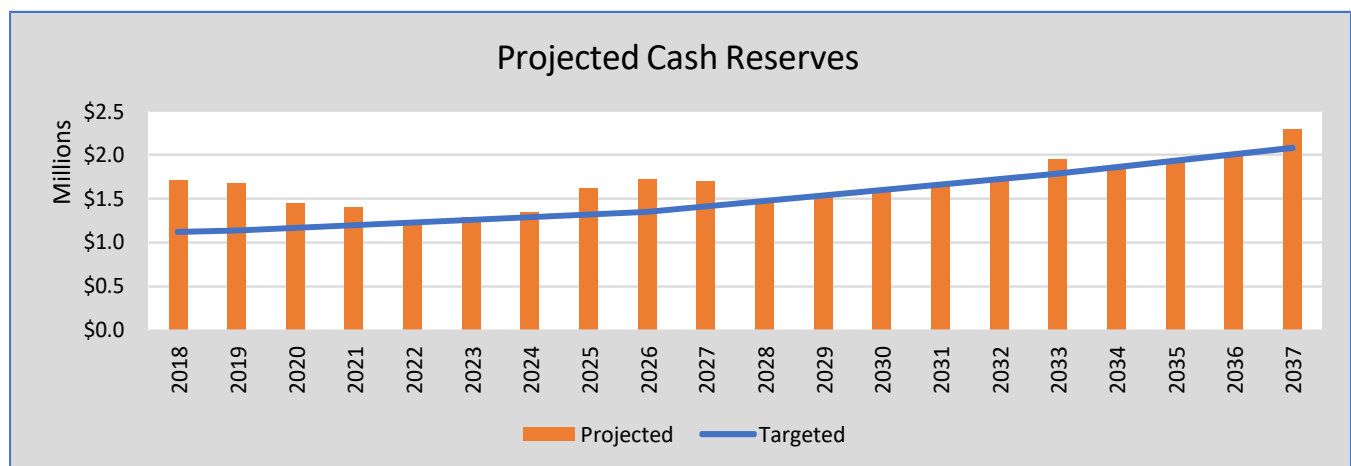
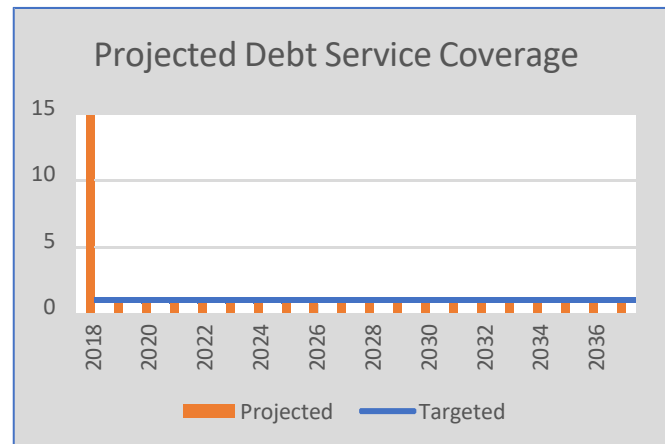
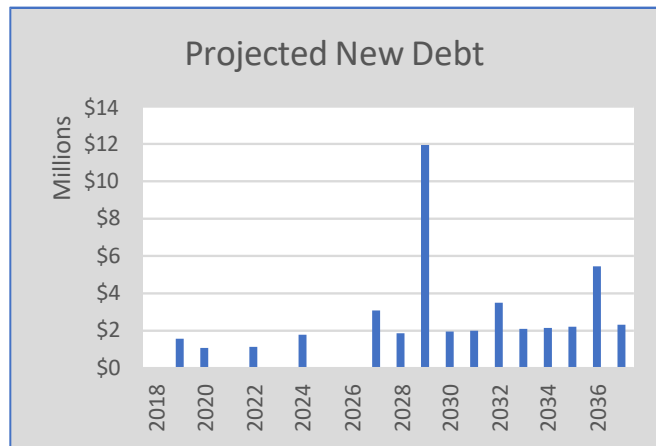
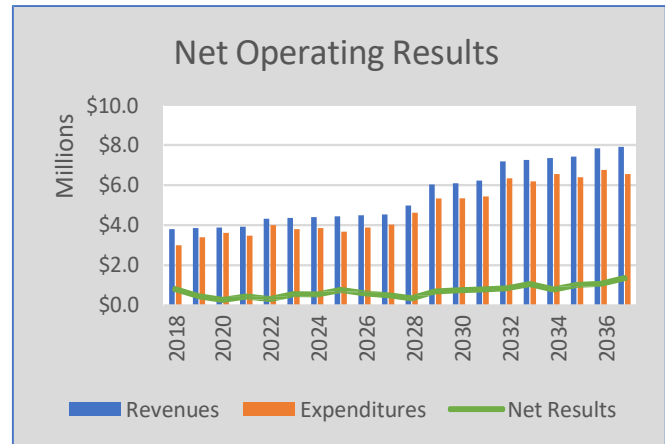
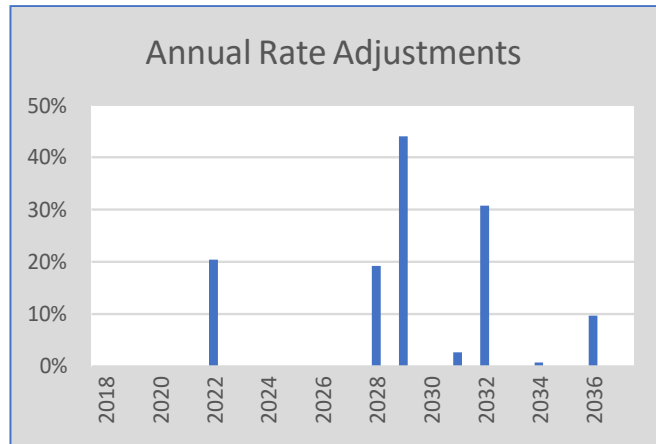
Note:

[1] Amounts shown in \$1,000's.

## Sewer System

### Scenario 3 – Master Plan Amortized over 100 Years

Rate Increase	Just in Time
Fund Approach	Current Policy - >\$500k debt funded in project year



Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	0.00%	1.20	13.80	1,121	1,713	-	1,074
2019	0.00%	1.20	2.23	1,138	1,672	-	2,216
2020	0.00%	1.20	1.85	1,165	1,451	-	1,711
2021	0.00%	1.20	1.83	1,193	1,403	-	470
2022	20.40%	1.20	2.03	1,223	1,224	-	1,983
2023	0.00%	1.20	2.03	1,253	1,290	-	623
2024	0.00%	1.20	1.95	1,284	1,344	-	2,316
2025	0.00%	1.20	1.93	1,316	1,619	-	333
2026	0.00%	1.20	1.91	1,350	1,726	-	476
2027	0.00%	1.20	1.64	1,407	1,695	1,818	3,388
2028	19.20%	1.20	1.77	1,465	1,465	1,863	2,596
2029	44.00%	1.20	1.66	1,525	1,527	1,910	12,433
2030	0.00%	1.20	1.57	1,587	1,595	1,957	2,453
2031	2.70%	1.20	1.51	1,651	1,654	2,006	2,402
2032	30.70%	1.20	1.74	1,717	1,719	2,057	4,478
2033	0.00%	1.20	1.65	1,785	1,949	2,108	2,761
2034	0.70%	1.20	1.58	1,855	1,856	2,161	2,967
2035	0.00%	1.20	1.52	1,926	1,933	2,215	2,667
2036	9.70%	1.20	1.47	2,000	2,001	2,270	5,800
2037	0.00%	1.20	1.40	2,077	2,295	2,327	2,297

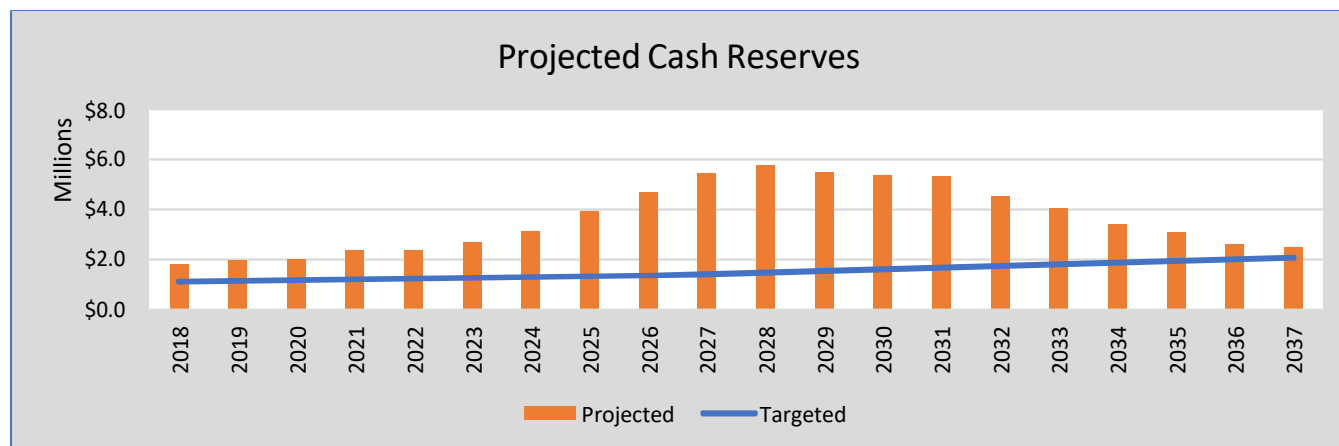
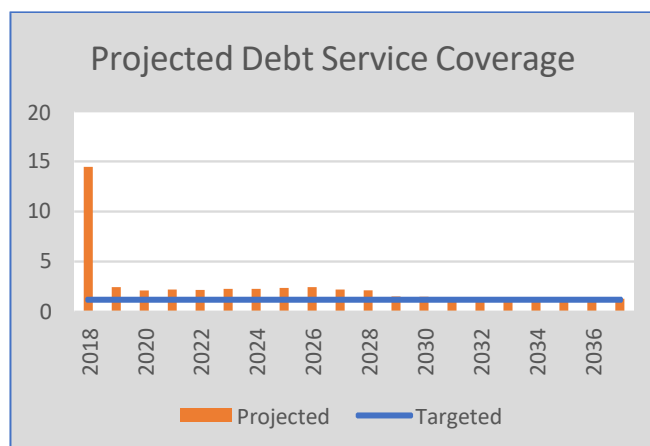
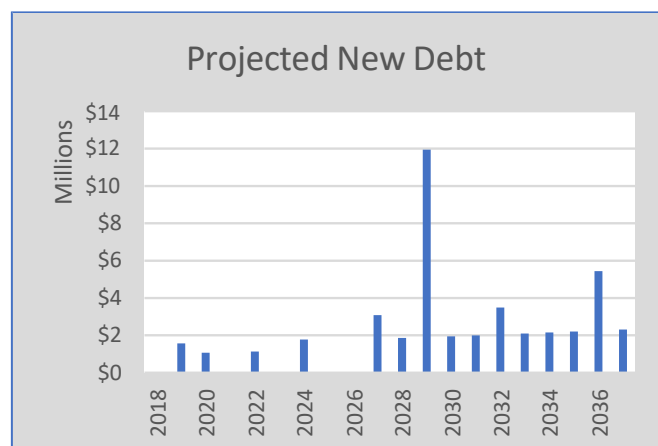
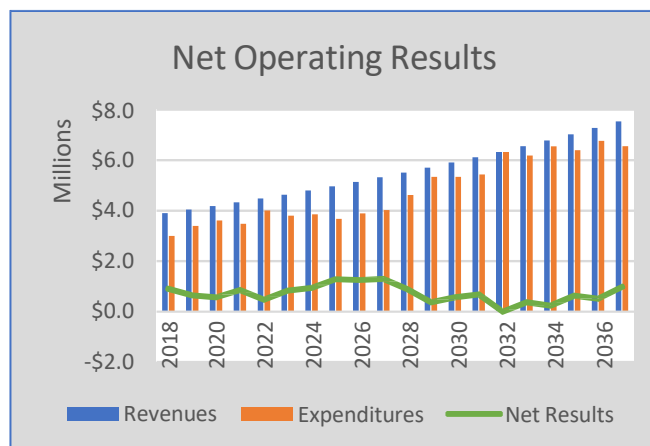
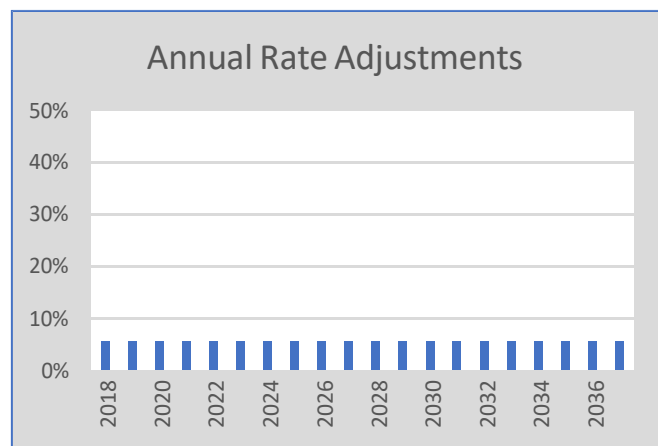
Note:

[1] Amounts shown in \$1,000's.

## Sewer System

### Scenario 3 – Master Plan Amortized over 100 Years

Rate Increase	Phased In (level)
Fund Approach	Current Policy - >\$500k debt funded in project year





Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	5.50%	1.20	14.44	1,121	1,807	-	1,074
2019	5.50%	1.20	2.45	1,138	1,957	-	2,216
2020	5.50%	1.20	2.12	1,165	2,030	-	1,711
2021	5.50%	1.20	2.21	1,193	2,385	-	470
2022	5.50%	1.20	2.17	1,223	2,361	-	1,983
2023	5.50%	1.20	2.27	1,253	2,697	-	623
2024	5.50%	1.20	2.28	1,284	3,141	-	2,316
2025	5.50%	1.20	2.37	1,316	3,931	-	333
2026	5.50%	1.20	2.46	1,350	4,686	-	476
2027	5.50%	1.20	2.22	1,407	5,441	1,818	3,388
2028	5.50%	1.20	2.14	1,465	5,746	1,863	2,596
2029	5.50%	1.20	1.51	1,525	5,482	1,910	12,433
2030	5.50%	1.20	1.49	1,587	5,367	1,957	2,453
2031	5.50%	1.20	1.47	1,651	5,313	2,006	2,402
2032	5.50%	1.20	1.40	1,717	4,527	2,057	4,478
2033	5.50%	1.20	1.39	1,785	4,058	2,108	2,761
2034	5.50%	1.20	1.38	1,855	3,402	2,161	2,967
2035	5.50%	1.20	1.38	1,926	3,084	2,215	2,667
2036	5.50%	1.20	1.30	2,000	2,593	2,270	5,800
2037	5.50%	1.20	1.29	2,077	2,511	2,327	2,297

Note:

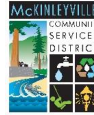
[1] Amounts shown in \$1,000's.



## Water Main Line Replacement and Rehabilitation Master Plan – Phase 1

McKinleyville Community Services District

**GHD** | 718 3<sup>rd</sup> Street, Eureka, California  
11125090 | November 2017



# Executive Summary

## Introduction

Phase 1 of this Water Main Line Rehabilitation Master Plan (Master Plan) has been prepared to provide a framework for planning, funding, and implementing replacements, rehabilitation, and upgrades to the McKinleyville Community Service District's (MCSD or District) water distribution system main lines and appurtenances (distribution system) for the next 50+ years. This Master Plan effort includes an analysis of all of the pipelines, blow-off assemblies, and valves (including isolation, air release, and pressure reducing valves) in the District's water distribution system. No analyses of booster stations or storage tanks are provided as a part of this study.

The original water distribution system was constructed in 1973. As the system continues to age, replacement and rehabilitation of existing infrastructure will be necessary to maintain an effective, functional system. This report serves as the first of two (or potentially three) phases of the Master Plan effort. The work on the various phases will culminate in the development of a Final Water Main Line Rehabilitation Master Plan (Final Master Plan). The Final Master Plan will serve as a final planning and budgeting outline to ensure the District is able to continue their high level of service to the community well into the future.

Phase 1 of the Master Plan includes a review and analysis of available information that was used to produce a planning-level long-term replacement plan. The development of a near-term rehabilitation plan was also considered. This near-term plan would include any areas identified as having performance or capacity constraints that need to be resolved in the next ten years; however, there are currently no such cases in the distribution system. The District does currently have plans and has budgeted for the construction of a new water storage tank, but that planning effort is being done outside the scope of this document.

Phase 1 of the Master Plan provides the following:

- Overview of the existing distribution system.
- Summary of previous related studies.
- Information on anticipated population growth.
- Preliminary needs assessment.
- Long-term replacement analysis including cost and scheduling information.
- Financial analysis based on the replacement cost estimates.
- Conclusions, recommendations, and next steps.

The subsequent phase(s) of the Master Plan will provide more detailed cost analyses and phasing of the replacement and rehabilitation of distribution main lines through more detailed assessments and physical evaluation of system conditions. It is important to note that although this document analyzes the replacement cost for the entire water distribution system and the impact this replacement cost would have on user rates, we do not recommend that the entire system be replaced in its entirety, nor are we advocating for the rate increases presented in the Financial



Analysis section of this document. Further refinement and final recommendations for the actual extent of main line replacement, scheduling, and the corresponding financial analysis will be performed in Phase 2 of the Master Planning effort.

## Overview of Existing System

MCSD purchases wholesale treated water from the Humboldt Bay Municipal Water District (HBMWD) and distributes water to its approximately 6,200 connections with the use of 91 miles of water mains, two pump stations, one hydro-pneumatic tank (Blake Road), and six storage tanks that provide a total of 5.25 million gallons (MG) of storage.

## Anticipated Growth

It is important to consider future demand when planning future rehabilitation and replacement of water main pipelines. The 2002 McKinleyville Community Plan (a subsection of the Humboldt County General Plan) noted that the most probable growth projection for McKinleyville was 1.8%, based on the growth trends at the time. Using more recent figures from the United States Census Bureau, growth from 2010 to 2015 was approximately 1.43% per annum. The District has indicated that they would consider using a rate of 1% per annum for growth projections when considering future development potential within District service boundaries. The growth rate of 1.8% was used for hydraulic modeling previously completed by North Coast Mapping Solutions (NCMS) to project flows in the system for the years 2020 and 2030.

## Preliminary Needs Assessment

A preliminary needs assessment was completed based on a review of previous studies, data provided by the District, and discussions with District staff. The needs assessment was focused on issues related to capacity, pressure, fire flow, and existing or future maintenance. No physical assessment, flow monitoring, or other field studies were performed as a part of this Phase 1 effort.

The following information and issues are presented in the preliminary needs assessment:

- Model results summarized in a 2012 NCMS report indicated that pipe size (i.e. flow capacity) in the main line system is generally not an issue under existing conditions, nor is it projected to be an issue under the year 2030 demand scenario.
- Model results showed some issues regarding low pressure and inadequate fire flow in higher elevation areas, particularly the Dows Prairie and McCluski Hill regions.
- Large demand events in the northern section of the system can cause negative pressure to Dows Prairie customers.
- A small portion of the system, particularly the low elevation areas along Patrick Creek Drive and Little River Drive, can have pressures exceeding 100 psi.



- The District has not identified any problematic areas in the water main line system that have required excessive maintenance or repairs.
- The system is aging. The majority of the pipe in the system is asbestos cement (AC) pipe that was installed in 1973 and is over 40 years old. Significant portions of this pipe will likely need to be replaced in the next 10 to 30 years (based on typical literature values for the lifespan of AC pipe).
- Particular attention should be given to the single direct pipeline from the HBMWD Turbidity Reduction Facility (TRF) to the MCSD system (Grant A Ramey Pump Station). This pipeline crosses under Highway 299 and under the Mad River, making it extremely difficult and time consuming to repair in the event of a leak in one of these areas.
  - While MCSD can be back-fed HBMWD water via an intertie with the City of Arcata, it is still very critical to understand the condition of the pipeline from HBMWD to MCSD, as this pipeline is the main source of water for the District.
- It is critical to understand the condition of the two Highway 101 crossings and three bridge crossings, as a failure in one of these sections of pipe would be very difficult and time-consuming to repair.
- It would take a considerable amount of planning to replace the pipeline along Central Avenue, and effort should be put forth to more accurately assess this section of the system.

## Long-Term Replacement Analysis

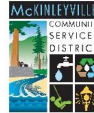
The long-term replacement analysis presents cost estimates for replacing the entire system. The total estimated cost for all permitting, design, surveying, construction, and construction management related to replacing the entire distribution system is \$142 million in today's dollars.

The Phase 1 cost estimates are presented in an effort to understand what the overall cost would be to systematically replace the entire system, and to determine what the overall impact to user rates would be. The intent is to use this information as a starting point for Phase 2 of the Master Plan effort. Phase 2 will consist of more detailed cost estimates and more detailed scheduling/phasing for the replacement of the District's water mains.

## Near-Term Rehabilitation Plan

The District is installing a new 5-MG tank at the Cochran site, which is outside the scope of this Master Plan. There are no other currently known or projected issues with the water system that require near-term attention (within the next approximately 5-10 years).

However, it should be noted that the 8-inch asbestos cement (AC) sanitary sewer main on Central Avenue from Sutter Road to Hiller Road has become severely corroded by hydrogen sulfide gas. It is likely that this problem will be addressed in the near term (next approximately 5-10 years). If it is determined that the sewer main needs to be replaced, it may be prudent to replace the water main at the same time, since it will also likely need to be replaced in the next 10-20 years. Performing



these projects concurrently would likely minimize the overall disruption to Central Avenue traffic and minimize the costs for replacement of this section of pipe for each system.

## Financial Analysis

Willdan Financial Services (Willdan) was retained by the District to develop a multi-year pro forma analysis for the water system reflecting the potential financial impact of the long-term systematic replacement of the entire distribution system as discussed in Phase 1 of this Master Plan. Specifically, Willdan prepared 30-year projections of net operating results under three specific scenarios for funding the improvements analyzed in Section 3.1. These scenarios included completing the improvements in 50 years, 75 years, and 100 years, with an analysis of how each of these three planning horizons affect District finances in a 30-year projection period. Willdan produced a technical memorandum (memo) that has been included as Appendix B.

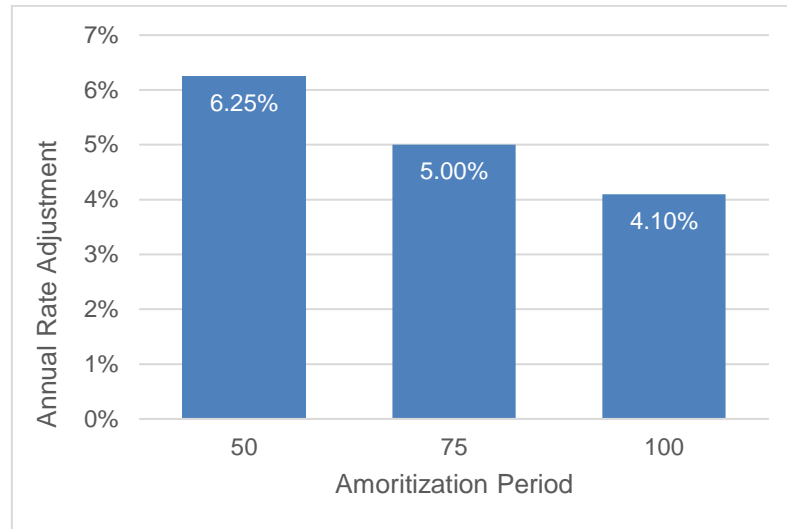
Within each of these scenarios, Willdan developed three distinct analyses depicting operating results under the following rate paths:

- No Rate Increases – referred to as the “do nothing” scenario and assesses the District’s ability to support operations and capital improvements assuming no future rate increases.
- Just-in-Time Rate Increases – calculates the level of rate adjustments needed on a “just-in-time” basis to meet system revenue requirements, including capital improvements.
- Phased-In Rate Increases – depicts a possible rate path that attempts to avoid large rate adjustments by phasing them in over time.

Ultimately the “no rate” increases scenario was not deemed viable, as the projected cash reserves would fall under the recommended reserves immediately after the implementation of the system replacement projects.

A bar graph illustrating rate adjustments required using the phased-in method is provided as Figure ES - 1.





**Figure ES - 1: Estimated Annual Rate Adjustments Required Using the Phased-In Method**

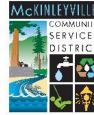
It is important to emphasize that we are not recommending that the District begin implementing the rate increases presented in this section. This is simply an analysis to assess what effect the replacement of the entire water distribution system would have on user rates and District finances.

It should be noted that MCSD currently has a policy prescribing that all capital improvement projects exceeding \$500,000 in a given year will be funded by debt. Likewise, any project under the \$500,000 threshold will be funded on a pay-as-you-go basis with available unrestricted cash. The scenarios summarized in the Willdan memo assume MCSD will continue with this policy. However, as part of this exercise, the project team discussed the possibility of revising this policy to allow for “bundling” of project costs into fewer borrowings to take advantage of any available savings in debt issuance costs. For example, MCSD could bundle three years of project costs into a single borrowing, possibly resulting in efficiencies and savings. It is important to note that Willdan is not a registered financial advisor and is not recommending a particular debt structure. Should MCSD be interested in examining any potential benefits from alternative debt management approaches, we encourage you to consult with your financial advisor.

## Conclusions, Recommendations, and Next Steps

The District’s water distribution system is generally in good condition. There are no major areas of concern, and pipe size (i.e. flow capacity) is not projected to be an issue in the foreseeable future. There are some minor issues with low pressure and inadequate fire flow in higher elevation areas, and high pressure in lower elevation areas, but the District has plans for addressing these issues outside of the scope of this Master Plan.

The key conclusion in Phase 1 of this Master Plan is that the District’s water distribution system was constructed in 1973 and is aging. As the system continues to age, replacement and rehabilitation of existing infrastructure will be necessary to maintain an effective, functional system. The total estimated cost to replace the entire distribution system is \$142 million in today’s dollars. Using the



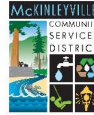
phased-in approach of rate increases, it is projected that replacing the entire system over 50, 75, or 100 years would require annual rate increases of 6.25%, 5.00%, and 4.10%, respectively. It is important to emphasize that we are not recommending that the District implement these rates or necessarily plan for the replacement of the entire distribution system. Phase 2 of the Master Planning process will refine the recommended extent of system replacement and the necessary rates required to do so.

While there are currently no high-priority, near-term projects required for the distribution system, it is critical that the District begin planning and budgeting for upgrades and replacement of system components. The majority of the system is AC pipe that is over 40 years old, and pipe failures will likely become an issue in the next 10 to 30 years if the District does not begin this process.

The long-term replacement analysis provided in this document presents cost estimates and corresponding financial impacts for replacing the entire system. However, the District likely does not need to replace (nor do we recommend that they replace) the entire distribution system. There are certainly sections where it would be much more cost effective to repair occasional leaks rather than replace the whole section of main line, particularly in less densely populated areas with smaller pipes. The cost estimates provided in this document are presented in an effort to understand what the overall cost would be to systematically replace the entire system, and to determine what the overall impact to user rates would be. The intent is to use this information as a starting point for Phase 2 of the Master Plan effort. Phase 2 will consist of more detailed cost estimates and more detailed scheduling/phasing for the replacement of the District's water mains. The replacement schedule will be refined through field investigation of the actual condition of portions of the distribution system. After specific areas of the system are assessed, appropriate replacement methodologies (e.g. lining, bursting, or direct replacement) will be further developed with associated construction cost estimates that are more refined. The updated replacement schedule and cost information will be used to refine the financial analysis provided in Phase 1.

Ultimately, the District needs to prioritize when to replace certain sections of pipe and further define how much will be replaced per year to develop a capital improvement plan that outlines how many feet of pipe will be replaced in a given year in a given area. This information will be provided as a result of this overall Master Plan effort.





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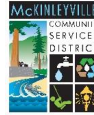
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# 1. Introduction and Background

The purpose of the McKinleyville Community Services District (MCSD, District) Water Main Line Rehabilitation Master Plan (Master Plan) is to provide a framework for planning, funding, and implementing replacements, rehabilitation, and upgrades to the District's water distribution system main lines and appurtenances (distribution system) for the next 50+ years. This type of master planning helps the District provide orderly, long-term maintenance and replacement of key elements of the distribution system, and to manage the timing of major capital projects to secure revenue needed to achieve District goals.

## 1.1 Overview of Master Planning Effort

This Master Plan effort includes an analysis of all of the pipelines, blow-off assemblies, and valves (including isolation, air release, and pressure reducing valves) in the District's water distribution system. While booster stations and storage tanks are mentioned in this report, they are discussed in the context of the overall water system, and no analyses of booster stations or storage tanks are provided as a part of this study.

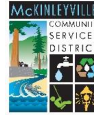
The overall Master Plan will be developed through multiple major phases of effort anticipated to culminate in the development of a Final Water Main Line Rehabilitation Master Plan (Final Master Plan). The following three phases of master planning are envisioned:

- Phase 1: High-level overview of water distribution main lines
- Phase 2: More detailed cost analysis and phasing of the systematic replacement of water distribution main lines
- Phase 3 (optional): More refined analysis of near-term, higher priority projects

This report presents the findings and recommendations of the Phase 1 effort, which include the results of the high-level assessment of the District's distribution system for use in initial planning for replacement, rehabilitation, and upgrades. This Phase 1 effort helps to quantify the overall nature, scope, and magnitude of long-term main line maintenance and replacement.

Based on planning with District staff, this Phase 1 study focuses on the following:

- General overview of MCSD and the existing distribution system
- Summary of previous related studies and findings that pertain to rate structure, capacity, maintenance and repair requirements, and other identified limitations of system components
- Description of the anticipated growth for the McKinleyville area
- Discussion on areas of the system that have pressure and fire flow issues
- Summary of MCSD's existing distribution system main lines, including information pertaining to size, age, material, and condition
- Discussion on considerations for replacement of the distribution system main lines



- Long-term replacement analysis with associated costs for systematically replacing the entire distribution system
- Financial analysis to assess the rate impacts to pay for the long-term systematic replacement of the entire system. It is important to note that we are not recommending the rate increases presented in the financial analysis section, but merely assessing what it would take to pay for an entire distribution system replacement.
- Conclusions, recommendations, and a summary of the next steps in the Master Plan process

Phase 2 of the Master Plan effort will include a more detailed cost estimate and more detailed phasing information for the systematic replacement of the water mains. Specific areas of the water system will be assessed, and appropriate replacement methodologies (e.g. lining, bursting, or direct replacement) will be developed with associated construction cost estimates. The costs for these projects will then be budgeted out for the next 50, 75 or 100 years, and a financial analysis will be performed to forecast rates necessary to fund these replacements.

Phase 3 of the effort, if it occurs, will likely consist of direct physical assessment of portions of the system to determine the condition of the pipe and confirm the schedule established under Phase 2 and/or revise the schedule or priorities.

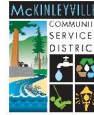
The nature of subsequent phases of master planning will depend on the findings from the initial investigations and preferences and priorities of the District. Recommendations for the next steps in the master planning process after this Phase 1 effort are summarized in Section 5.2.

## 1.2 Overview of Existing System

MCSD is a special service district providing parks, recreation, water, wastewater, and streetlight services to residents of McKinleyville in Humboldt County, California (see Figure 1: Project Vicinity and Location Map). The MCSD boundary encompasses approximately 19 square miles, ranging from North Bank Road on the south to Patrick Creek on the north.

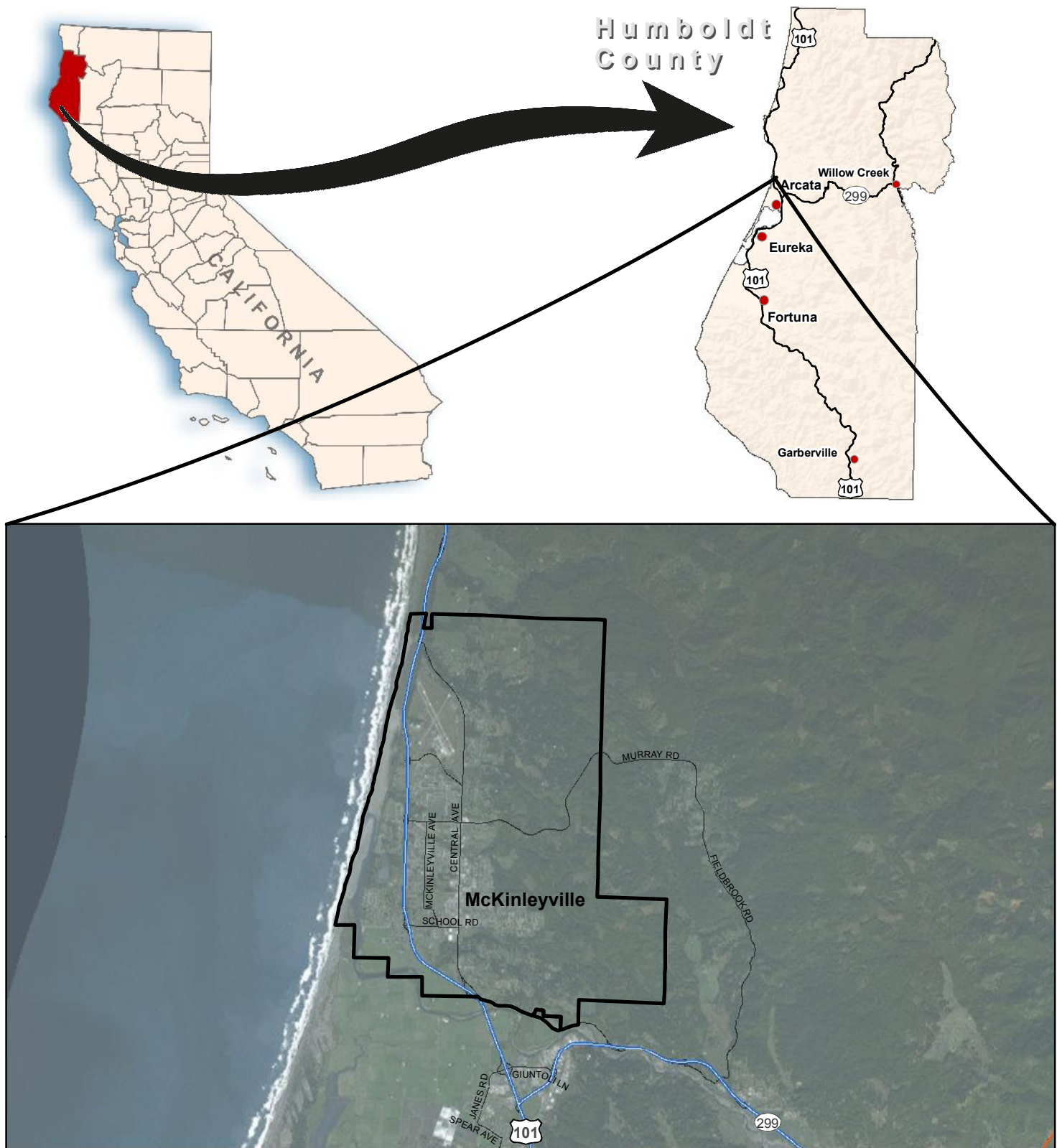
The original water distribution system was constructed in 1973. MCSD purchases wholesale treated water from the Humboldt Bay Municipal Water District (HBMWD), which diverts water from its one-million-gallon reservoir at the Turbidity Reduction Facility to MCSD's Grant A Ramey Pump Station (Ramey Pump Station) at the intersection of North Bank and Azalea Roads. Water is pumped into the rest of the District's system from the Ramey Pump Station. Water is distributed to the District's approximately 6,200 water services (as of July 2017) through approximately 91 miles of water mains (excluding private laterals). The MCSD water system also includes six storage tanks that provide a total of 5.25 million gallons (MG) of storage.

There are four pressure zones in the system. Pressure Zone 1 (approximately 13% of the system) includes all services west of Highway 101 and is fed from Pressure Zone 2 through four pressure reducing valve (PRV) stations. Pressure Zone 2 (approximately 84% of the system) includes two tanks at the Norton Road tank site (1 MG and 1.5 MG) and two tanks at the Cochran Road tank site (1 MG and 1.5 MG). There is a booster station near the Cochran Road tanks that pumps water up to the two McCluski Hill redwood tanks (0.1 MG and 0.15 MG) which serve the McCluski Hill area (Pressure Zone 3, approximately 3% of the system). Pressure Zone 4, along Blake Road, is a small



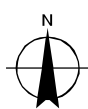
specialty zone that services approximately 12 customers and is fed by a hydro-pneumatic tank from Pressure Zone 2.

An overview of the District's water system is shown in Figures 2 and 3. Figure 2 symbolizes the water mains with respect to size, and Figure 3 symbolizes the water mains with respect to material.



 McKinleyville Community Services District Boundary

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Miles  
Map Projection: Lambert Conformal Conic  
Horizontal Datum: North American 1983  
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



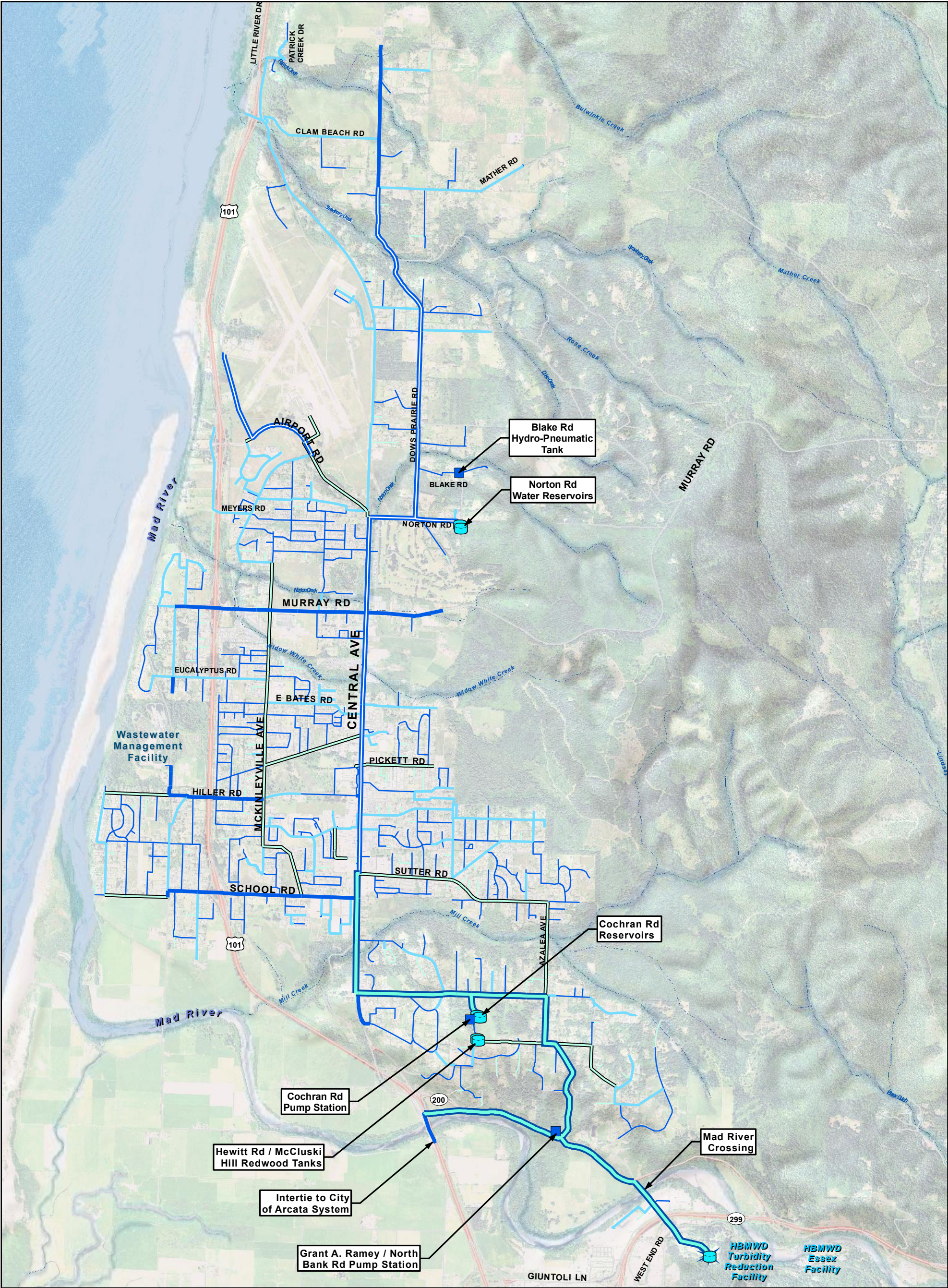
McKinleyville Community Services District  
Water Main Line Rehabilitation Master Plan (Phase 1)

Job Number 11125090.04  
Revision 1  
Date 17 Oct 2017

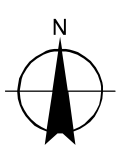
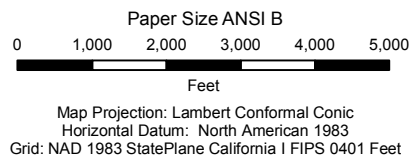
Project Vicinity and Location Map

Figure 1





Water Main Size



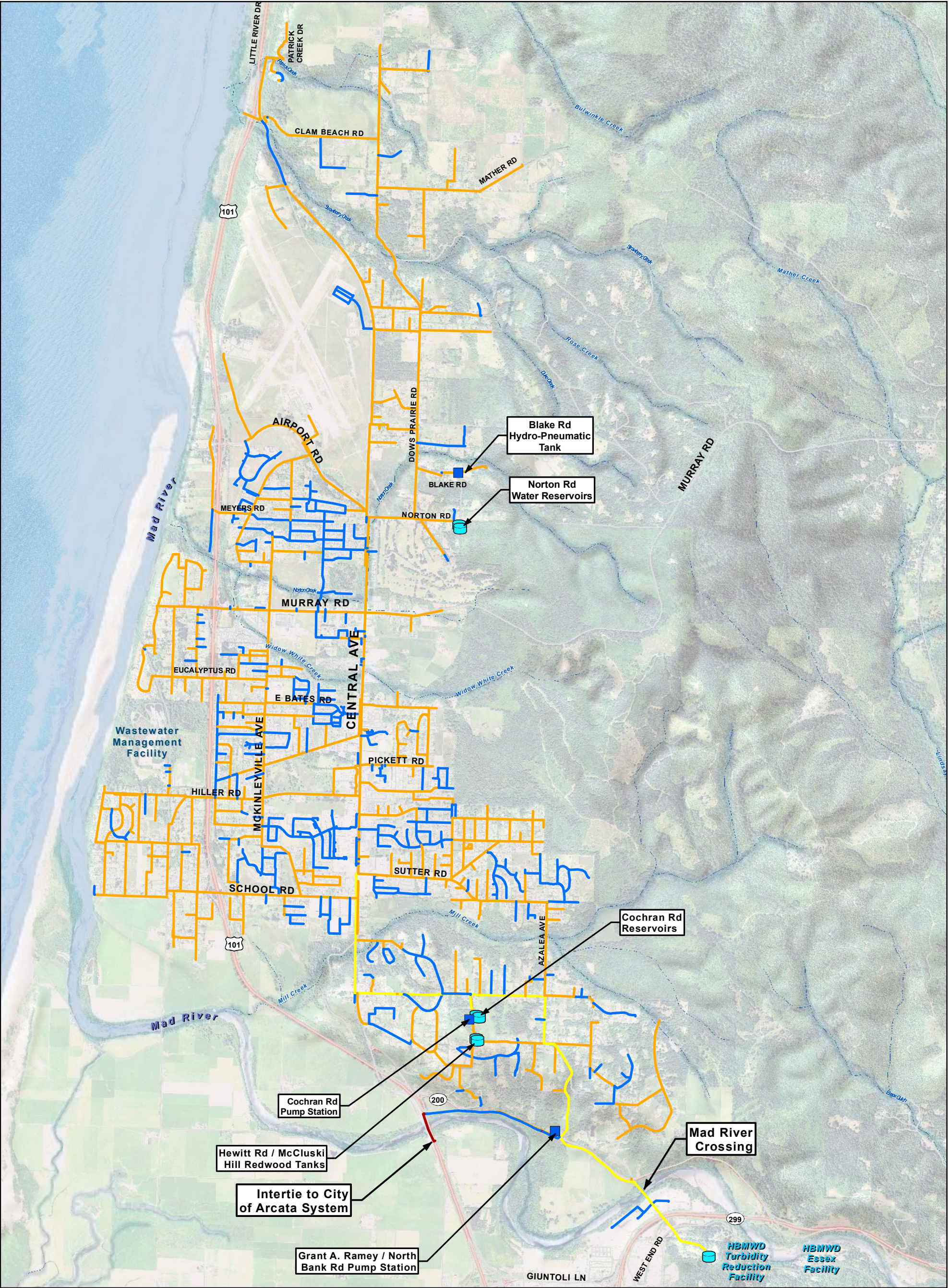
McKinleyville Community Services District  
Water Main Line Rehabilitation Master Plan (Phase 1)

Job Number | 11125090.04  
Revision | A  
Date | 31 Aug 2017

Water System Overview by Pipe Size

Figure 2

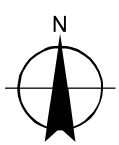




Water Main Material

- |                    |              |               |         |             |
|--------------------|--------------|---------------|---------|-------------|
| Asbestos Cement    | Cast Iron    | Storage Tank  | Creeks  | Major Roads |
| Polyvinyl Chloride | Ductile Iron | Pump Stations | Highway | Other Roads |

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Horizontal Datum: North American 1983  
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



McKinleyville Community Services District  
Water Main Line Rehabilitation Master Plan (Phase 1)

Job Number	11125090.04
Revision	A
Date	31 Aug 2017

Water System Overview by Pipe Material

Figure 3





### 1.3 Summary of Previous Studies and Findings

Elements of the MCSD distribution system have been evaluated since the system was originally constructed. This section presents background information, findings, and recommendations from the following recent documents and studies regarding the MCSD distribution system:

- MCSD Water Distribution System – Preliminary Assessment – Revision 3, SHN – August 2011
- MCSD Water Model Technical Report, North Coast Mapping Solutions – July 2012
- McKinleyville Capital Improvement Plan, HSU Student Capstone Project – May 2015
- Water and Sewer Capacity Fee Study, Willdan Financial Services – September 2011
- Updated Water Rate and Financial Analysis, Willdan Financial Services – February 2014

These previous studies are summarized in this report to provide additional context and highlight conclusions that can be drawn from work that has already been done. While more in-depth assessment of the distribution system will occur as a part of this Master Plan effort, synthesizing information provided in previous studies is an appropriate way to begin this effort. Recent assessment of the water distribution system was started with a 2011 study that is summarized in the following section.

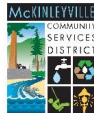
#### 1.3.1 MCSD Water Distribution System – Preliminary Assessment – Revision 3, SHN – August 2011

SHN Consulting Engineers & Geologists, Inc. (SHN) prepared a report titled *MCSD Water Distribution System – Preliminary Assessment* (Assessment) in August 2011. The Assessment provides an overview of the current and future MCSD water system and storage requirements to aid in the planning of future additional storage for the system, as well as aid in the development of the MCSD water distribution model, which is summarized in Section 1.3.2. Current water needs were established using data from 2010 and methods outlined in Title 22 California Code of Regulations (CCR) Section 64554(b)(3)(A-D). It was calculated that MCSD has an average daily demand (ADD) of 1.51 million gallons per day (MGD), a max daily demand (MDD) of 3.41 MGD, and a peak hourly demand (PHD) of 0.21 MGD.

The California Department of Public Health (CDPH) and CCR 22 CA ADC 64554 require water storage equal to four hours of PHD plus the MDD at all times, which would require MCSD to have 4.25 MG of storage. MCSD desires to achieve a more stringent storage criterion of 5 days of ADD plus storage for fire flows, given the vulnerability of the main water supply transmission line and a lack of redundancy in water supply<sup>1</sup>. Meeting this criterion would require 7.6 MG of storage under current system demands. Currently MCSD has 5.25 MG of available water storage, which is sufficient to meet CDPH standards, but insufficient for meeting MCSD standards.

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<sup>1</sup> At the time of the writing, MCSD received all of its potable water from HBMWD via a single transmission line that crosses under the Mad River. It should be noted that an intertie between the MCSD and City of Arcata water systems was installed in 2014, after SHN's assessment was prepared. Most of Arcata's water also comes from HBMWD. Arcata does have a small additional source of water; however, HBMWD is still essentially the sole source of water for MCSD.



In addition to the current system demands, the Humboldt County General Plan (General Plan) has proposed high-density housing that will increase the MCSD population by approximately 1,800 equivalent residential units (ERUs). With a demand of 254 gallons/ERU (calculated in the Assessment), this would require an additional 2.3 MG of storage to meet the MCSD storage goals, in addition to the current storage deficit of 2.3 MG. This would mean a total required storage of 9.8 MG, implying the MCSD needs to increase its current water storage by approximately 4.5 MG. The assessment presents conceptual cost estimates for the design and installation of one 4.5-MG tank at \$5,647,460 and for two 2.25-MG tanks at \$8,597,108.

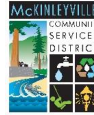
Additionally, the Assessment outlines other requirements and specifications for the MCSD water system as follows:

- Minimum storage level is approximately 20 feet in each storage tank to account for fire flows and/or minimum pressure requirements.
- Maximum fire hydrant spacing is 500 feet in residential areas and 300 feet in commercial areas. A maximum of one hydrant is allowed on 6-inch mains between intersecting lines, and a maximum of two hydrants are allowed on 8-inch mains between intersecting lines.
- Minimum operating pressure of 40 pounds per square inch gauge (psig) available to residents with a lowered minimum of 20 psig available during fire flow demands.
- Minimum fire flows are 1,000 gpm and 2,000 gpm over a 2-hour period for residential and commercial areas, respectively. Note that a fire on September 16, 2002 lasted for 10 hours and consumed nearly 1.3 MG of water.

### **1.3.2 MCSD Water Model Technical Report, North Coast Mapping Solutions – July 2012**

The *MCSD Water Model Technical Report* was prepared by North Coast Mapping Solutions with review and stamped approval by SHN. The report summarizes the District's water system as well as MCSD and State of California water system regulatory criteria and standards as presented in the *MCSD Water Distribution System – Preliminary Assessment* (see Section 1.3.1). The report then outlines the development of a WaterCAD V8i water model for the District's water distribution system piping, tanks, and booster stations. The report includes a discussion on model limitations and components, rule-based operations used to define the model simulations, how demand was allocated throughout the system, and model calibration. Lastly, the report presents results for various scenarios to determine the system's adequacy for maintaining required flows, pressure, and storage per MCSD and State of California minimum requirements and regulations (see Section 1.3.1). The report presents model results for four scenarios:

1. Existing system
2. Addition of a 4.5-MG storage tank at the Cochran Road tank site
3. Addition of a 4.5-MG tank at the Cochran Road tank site and a 2.5-MG tank at the northeast end of Mather Road (Dows Prairie area)
4. Water system requirements to meet the growth projections for MCSD



- i) This scenario was modeled with the additional 4.5-MG tank at the Cochran Road tank site and a 2.5-MG tank at the end of Mather Road
- ii) This scenario included demands based on population growth projections for years 2020 and 2030 (using a growth rate of 1.8% per year)

Each scenario analysis included the following:

- Steady state analysis testing pressures, flows, and fire flow availability
- Extended period simulation (EPS) testing storage capacity and pressures
- Extenuating circumstances testing each scenario under “earthquake” conditions
  - Under this scenario, the assumption is made that a natural disaster isolates MCSD’s system from HBMWD’s system and causes fires within the MCSD service area. With MCSD no longer connected to HBMWD’s system, water is provided solely by the storage in MCSD’s tanks.
- Results for a high-density build-out scenario with demands added into the model based on population growth projections in the General Plan

#### 1.3.2.1 Steady State Analysis

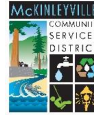
The steady state analysis results showed that during peak hour demand plus a 2,000 gpm industrial fire event on Central Avenue, the existing system is able to provide adequate pressure (20 psi or greater) to all service connections except one junction at the end of Mather Road (Dows Prairie area), which is at a high elevation and is known as a low pressure region. With the addition of the 4.5-MG storage tank, all service connections are able to provide adequate pressure under maximum daily demand plus a 2,000 gpm fire event on Central Avenue.

With regard to fire flow, under maximum daily demand, the existing system failed to supply the required residential fire flow of 1,000 gpm to 9 junctions in the high elevation portions of the system, particularly in the Dows Prairie and McCluski Hill areas. The addition of the 4.5-MG storage tank improves fire flows, but there are still 7 junctions that do not receive adequate fire flow under this scenario. With the additional 2.5-MG storage tank, the system fails to provide 1,000 gpm to three junctions, but all are above 920 gpm. Under the year 2020 and year 2030 projected maximum daily demands, the addition of a 2.5-MG tank in the high elevation Dows Prairie area allowed for adequate fire flow above 1,000 gpm at all junctions.

Under all steady state scenarios, flow velocities throughout the system were below 5 ft/sec, and three junctions had pressures exceeding 100 psi. Those junctions are found at low elevations along Patrick Creek Drive and Little River Drive, and the modeled pressures are consistent with District field measurements.

#### 1.3.2.2 Extended Period Simulation (EPS)

As it would be expected, the EPS showed that higher pressures are found in low elevation areas and low pressures are found in high elevation areas, particularly the Dows Prairie area. As the storage tank levels decreased, the number of junctions that failed to provide the minimum pressure of 20 psi of course increased. Under existing conditions, and employing the MCSD protocol



minimum tank level of 20 feet, only two junctions failed to provide 20 psi (one in the McCluski Hill area and one at the end of Mather Road in the Dows Prairie area).

To determine the number of days of storage available, the main transmission line from HBMWD was set to closed, tank levels were set to full, and pumps were turned off. A 4-hour commercial fire (2,000 gpm) was set to occur along Central Avenue, and the assumption was made that water consumption was equal to average daily demand. There is less than two days of storage available in the current system under this scenario. The addition of the 4.5-MG tank increases the available storage to four days, and the addition of the 2.5-MG tank increases the storage to five days.

#### 1.3.2.3 Earthquake Scenario

Similar to the EPS scenarios, the addition of both the 4.5-MG and 2.5-MG storage tanks is necessary to provide the five-day storage of ADD and fire flows under the “earthquake” scenario.

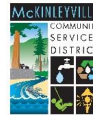
#### 1.3.2.4 High-Density Build-out Scenario

The addition of the 4.5-MG and 2.5-MG tanks only allows for 3.5 days of storage under the Humboldt County high-density build-out scenario. To meet the anticipated population growth projections, a minimum of 10.5 MG and 12 MG of additional storage is required for years 2020 and 2030, respectively. The population increase would also require additional or larger pumps to keep pace with the increase in demand.

### 1.3.3 McKinleyville Capital Improvement Plan, HSU Student Capstone Project – May 2015

A group of Humboldt State University (HSU) engineering students prepared the McKinleyville *Capital Improvement Plan* as part of a school project. Among other information and analyses, the report provides recommendations for infrastructure upgrades of MCSD’s water distribution and sewer collection systems, preliminary designs for specific projects, and a schedule and estimated costs for systematically replacing the entire sanitary sewer collection and water distribution systems, accounting for expansion of each system to accommodate projected population growth. This report also analyzed how the “full buildout” scenario (developed based on potential rezoning and projected population growth per the General Plan) would affect the capacity and performance of each system.

The report developed design parameters for the installation of a new storage tank at the Cochran Road site to meet the MCSD requirement of having five days of storage at average daily demand (negating fire flow considerations). The recommended alternative was one 5-MG pre-stressed concrete tank. The report recommended the tank have 12 in thick walls, an inner diameter of 160 feet, and a height of 35 feet in order to leave 12 inches of freeboard for seismic activity. The tank would require 24, 48-inch structural beams with a 27-foot spacing to serve as both support and baffling. It was also recommended to partially bury the tank 4 feet into the ground to avoid extra pumping costs and excess pressure in the distribution system. The total cost for the storage tank was estimated as \$3,864,000.



The recommended replacement schedule for the entire distribution system was broken into two sections, replacing 8,500 ft/year until 2060 and then 5,500 ft/year until 2096. The total present worth cost for replacement of the water distribution system was given as \$31.5 million.

Under the “full buildout” scenario, model results showed that the system was able to maintain pressures above 20 psi, and that most of the system can generally accommodate buildout. However, the pressure in many mains dropped below 40 psi, and the report notes that any substantial development would require additional analysis to remedy low pressures.

#### **1.3.4 Water and Sewer Capacity Fee Study, Willdan Financial Services – September 2011**

Willdan Financial Services (Willdan) prepared a *Water and Sewer Capacity Fee Study* for MCSD in September 2011. Capacity fees are one-time charges that are collected as a condition of establishing a connection to the District’s systems. These fees are proportional and related to the capital facility demands of new development. Capacity fees are collected separately from connection fees, which are used to offset the costs associated with the physical connection to the utility. The previous water capacity fee established in 1991 was \$154 per equivalent residential unit (ERU), which is defined as any single-family residential structure. Willdan recommended switching from a water capacity fee based on ERUs to one based on the size of the installed water meter. Table 1 shows the total recommended water capacity fee by water meter size. The total water capacity fee includes storage, discharge, and joint costs per account.

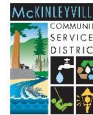
**Table 1: Water Capacity Fees for MCSD by Water Meter Size**

Water Meter Size	Total Water Capacity Fee
5/8"	\$ 2,616
3/4"	\$ 3,818
1"	\$ 6,221
1 1/2"	\$ 12,231
2"	\$ 19, 442
3"	\$ 36,268
4"	\$ 60,305
6"	\$120,399
8"	\$ 192,511
10"	\$ 276,642

The study notes that recent building code regulations require single-family homes to be sized with a 1-inch meter for fire protection systems. The study recommends all new single-family residential units with meter sizes up to 1 inch be charged the 5/8-inch meter fee to reflect their typical demand on the system.

#### **1.3.5 Updated Water Rate and Financial Analysis, Willdan Financial Services – February 2014**

Willdan prepared an Updated Water Rate and Financial Analysis for MCSD in February 2014. The initial rate study was completed in 2012 to update MCSD’s water rates such that the full operation



and maintenance of the current system and future upgrades to the system were covered. At the time, the District was running at a net loss. The initial analysis mistakenly failed to include the base cost of water purchased from HBMWD for resale to MCSD customers, leading to a drastic decrease in MSCD's reserves because customers were not paying for the water purchased for their use. To recover the lost revenue, the analysis calls for a pass through charge of \$1.22 per hundred cubic feet (HCF) of water used by each customer. This pass through charge is then adjusted each year based on the wholesale water charges from HBMWD. Additionally, the analysis recommends a recovery surcharge of \$3.66 per ERU per month through the end of fiscal year 2017. The analysis also includes new recommendations for monthly base charges (Table 2) and variable commodity rates (Table 3) which account for water purchased from HBMWD.

**Table 2: Adjusted Monthly Base Charges in 2017 and 2018 for MCSD Customers by Meter Size**

Water Meter Size	ERU	2017 Rate	2018 Rate
5/8"	1	\$ 14.57	\$ 15.39
3/4"	1.5	\$ 19.06	\$ 20.13
1"	2.5	\$ 28.03	\$ 29.60
1 1/2"	5	\$ 50.46	\$ 53.29
2"	8	\$ 77.38	\$ 81.72
3"	15	\$ 140.18	\$ 148.05
4"	25	\$ 229.93	\$ 242.81
6"	50	\$ 454.21	\$ 479.70
8"	80	\$ 723.38	\$ 763.98

**Table 3: Adjusted Commodity Rates in 2017 and 2018 for MCSD Customers as a Volume Charged in Dollars per HCF Consumed**

Tier	HCF	2017 Rate	2018 Rate
1	0-8	\$ 1.39	\$ 1.47
2	8.01 +	\$ 3.46	\$ 3.66

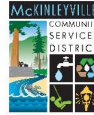
## 1.4 Anticipated Growth

It is important to consider future demand when planning future rehabilitation and replacement of water main pipelines. Water demand of course increases as population grows, which requires more water to be conveyed through the mains in the system. Appropriate growth considerations can be used to determine if a pipe should be replaced in kind, or if the size should be increased to provide additional capacity.

The 2002 McKinleyville Community Plan (a subsection of the General Plan) notes that the most probable growth projection for McKinleyville was 1.8%, based on the growth trends at the time. The McKinleyville Community Plan has since not been updated.

McKinleyville had a population of 13,599 in 2000 (based on the 2000 census) and 15,177 in 2010 (based on the 2010 census). Based on data from the American Community Survey (ACS) 5-year





estimate performed by the United States Census Bureau, McKinleyville had a population of 16,291 in 2015. Using these figures, population growth from 2000 to 2015 was approximately 1.21% per annum, and growth from 2010 to 2015 was approximately 1.43% per annum. The District has indicated that they would consider using a rate of 1% per annum for growth projections when considering future development potential.

The only major subdivision development that has occurred since 2010 was the Central Estates Subdivision. Any population increase that resulted from this subdivision likely would have been captured in the 2015 ACS 5-year estimate, and the demands from this subdivision were also included in the water modeling that was performed by North Coast Mapping Solutions (NCMS) in 2012. Additionally, the General Plan has not been updated since the water modeling was performed in 2012.

NCMS ran model scenarios for the years 2020 and 2030 using a growth rate of 1.8%, which is conservative when considering the recent population growth trends described above. The water modeling also included demands from high-density housing proposed in the General Plan.

## 2. Preliminary Needs Assessment

A preliminary needs assessment was completed based on a review of the existing documents discussed in Section 1.3, data provided by the District, and discussions with District staff. The completion of this preliminary needs assessment is a critical step in identifying critical issues in the system. The preliminary needs assessment focused on the following major areas of interest:

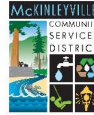
- Issues related to capacity, pressure, and fire flow
- Issues related to existing or future maintenance

This section also presents an analysis of the existing system with respect to considerations for replacement, including the following:

- A tabulation of pipe age, material, and diameter
- Information on material life for various pipe materials
- A discussion of other risk-based factors that may influence when replacement should be considered for specific sections or system components

It should be noted that no flow monitoring or other field studies were performed as a part of this Phase 1 effort. Data gaps identified through this Phase 1 effort will be analyzed further in Phases 2 or 3 of the master planning process. Additionally, Phase 1 did not include any video surveys, field testing, or physical evaluation of the pipe, appurtenances, pump station components, soil conditions (including pH), or cathodic protection. More detailed evaluations will be completed in future Phases as warranted. A more in-depth analysis of selected critical system components and proposed major component replacement scheduling is planned for Phase 2 of this master planning effort.





## 2.1 Issues Related to Capacity, Pressure, and Fire Flow

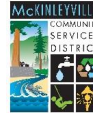
NCMS developed a model of the District's water system using WaterCAD V8i software. The model was used to analyze various scenarios, and NCMS prepared a *Water Model Technical Report* in 2012 summarizing the model results (see Section 1.3.2 for a summary of the NCMS report). The water model did not require updates for this Phase 1 Master Plan effort, as NCMS ran model scenarios that accounted for conservative population growth projections, and no significant developments have occurred in McKinleyville since the model was developed.

Model results showed that pipe size (i.e. flow capacity) in the main line system is generally not an issue under existing conditions, nor is it projected to be an issue under the year 2030 demand scenario (the report summarized results from a 2020 scenario and a 2030 scenario, but nothing further into the future was analyzed). Even under future conditions, modeled flow velocities throughout the system were below 5 ft/sec, which is a target for achieving typically acceptable pressure loss through a pipe network.

There are some issues regarding low pressure and inadequate fire flow in higher elevation areas, particularly the Dows Prairie and McCluski Hill regions. There are hydrants in these areas that fail to deliver the required 1,000 gpm (minimum fire flows are 1,000 gpm over a 2-hour period for residential areas). This is not a pipe sizing issue; rather, increased storage and additional storage at higher elevations would be the solution to this problem. Additionally, while the District's current storage is sufficient to meet CDPH standards, the District desires to achieve a more stringent storage criterion of 5 days of average daily demand, plus storage for fire flows. The District is currently planning for the construction of a new 5-MG storage tank at the Cochran site. Model results showed that the addition of this tank at the Cochran site improves fire flow availability, but that there will still be 7 hydrants total in the Dows Prairie and McCluski Hill areas that cannot provide 1,000 gpm. Model results show that the addition of a new storage tank in the Dows Prairie area would solve the fire flow issues throughout the system. It should be noted that the Dows Prairie and McCluski Hill areas serve relatively small populations, and that under a steady state analysis with additional storage at the Cochran site, the existing system is able to provide adequate pressure (20 psi or greater) to all service connections under maximum daily demand plus a 2,000 gpm (industrial) fire event on Central Avenue.

The report notes that a small portion of the system, particularly the low elevation areas along Patrick Creek Drive and Little River Drive, can have pressures exceeding 100 psi. The District has confirmed with field measurements that the pressure in the Patrick Creek area (at the bottom of the hill) can be as high as 120 psi. District staff will determine a good location for a future PRV station by collecting system pressure data.

MCSD will need additional storage outside of the planned new tank at the Cochran site to meet their storage criteria when accounting for the Humboldt County proposed high-density buildout and overall population growth projections. However, analysis of storage is outside of the scope of this Master Plan effort.



## 2.2 Issues Related to Existing or Future Maintenance

The District has not identified any problematic areas in the water main line system that have required excessive maintenance or repairs, outside of some mains that are being influenced by nearby tree roots.

## 2.3 Analysis of Existing System Attributes and Replacement Considerations

Prior to direct physical assessment, age and material can both be preliminary indicators of the condition of various sections of the District's distribution system piping. This section provides a summary of the District's existing water mains with regard to age, size, and material, and outlines the implications of these considerations. This section also discusses special replacement considerations for key areas of the distribution system.

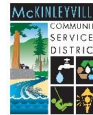
As noted in Section 1.2, the District owns approximately 91 miles of water main pipe. Table 4 provides a tabulation of system pipe lengths by both nominal diameter and material type based on information gathered from the District's existing geographic information system (GIS) data.

**Table 4: Existing Distribution System Pipe Lengths by Diameter and Material**

Diameter (in)	Length (ft)				
	PVC	AC	CIP	DIP	Total
2	11,655	476	-	-	12,131
4	9,739	15,572	-	-	25,311
6	93,012	122,881	-	-	215,893
8	38,536	76,667	-	-	115,203
10	1,159	35,709	-	-	36,868
12	-	24,193	-	891	25,084
14	-	14,468	-	-	14,468
16	-	12,782	-	-	12,782
18	3,849	-	19,995	144	23,988
<b>Total</b>	<b>157,950</b>	<b>302,748</b>	<b>19,995</b>	<b>1,035</b>	<b>481,728</b>

An age profile of the distribution system has also been developed that includes a tabulation of system pipe lengths by age and material based on an Excel spreadsheet provided by the District<sup>2</sup> (Table 5). For the details of pipe age, material, and size, see Appendix A.

<sup>2</sup> Note that there are minor inconsistencies in the footage given in the Excel spreadsheet provided by the District compared to data in the District's GIS. There are no pipe age data in the District's GIS.



**Table 5: Existing Distribution System Pipe Lengths by Age and Material**

Pipe Age (years)	Length (ft)			
	PVC	AC	DIP/CIP	Total
1-9	17,241	-	1,200	18,441
10-19	51,050	-	80	51,130
20-29	64,704	-	165	64,869
30-39	12,060	56,699	-	68,759
40-44	2,335	232,852	23,795	258,982
<b>Total</b>	<b>147,390</b>	<b>289,551</b>	<b>25,240</b>	<b>462,181</b>

As previously mentioned, no physical evaluations of the existing pipe were performed for this Phase of the master plan process. Standard literature values suggest the following life expectancies for various pipe materials:

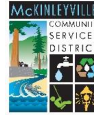
- Polyvinyl Chloride (PVC): generally 50-70 years, with a lifetime potential of 100+ years
- Asbestos Cement (AC): 50-70 years
- Ductile Iron Pipe (DIP): 75-100 years

However, it should be noted that pipe in the District's system could feasibly have a lifetime that is longer than these literature values suggest. Literature values are often based on economic considerations for depreciation or general replacement schedules. Actual experience of water agencies suggest that under the right conditions, water distribution elements can have a longer actual service life than a typical literature value for planning purposes. The actual service life will depend on many factors.

Eventually the various elements of the water distribution system piping will reach the end of their practical useful life and will need to be replaced to continue to provide service. Not all piping will warrant replacement at the same time. When and where to begin depends on multiple factors, including pipe material, installation conditions, the actual condition of the pipe (which is pending physical evaluation in Phase 2), service characteristics, ability to meet hydraulic needs, risks of failure, etc.

The 230,000+ feet of AC pipe that are over 40 years old will likely require replacement in the next 10 to 30 years while the older PVC and DIP will likely remain in serviceable condition for another 20 to 60+ years (pending physical evaluation). More recently installed PVC and DIP could potentially last 100 more years. However, it should be noted that there is no cathodic protection in place to protect the District's DIP mains from corrosion. DIP generally corrodes over time without cathodic protection, but not all soil conditions are corrosive to DIP. Although corrosion is likely occurring on the DIP in the District's system, the corrosion rate may be relatively low, and a cathodic protection system may not be cost effective. Field testing during Phase 2 can be completed to help evaluate the condition of the variety of piping within the system and provide further insights into developing a replacement schedule.

When analyzing considerations for replacement and further evaluation, it is important to give particular attention to the pipe from the TRF to the Ramey Pump Station (including where it crosses



under the Mad River), the two Highway 101 crossings (Myers Road and Eucalyptus Road), and the three bridge crossings (School Road, Hiller Road, and Murray Road)<sup>3</sup>. While MCSD can be back-fed HBMWD water via an intertie with the City of Arcata, it is still very critical to understand the condition of the pipeline from the TRF to the Ramey Pump Station, as this pipeline is the main source of water for the District. If this section of pipe were to fail, it would drastically decrease the reliability of water being provided to MCSD, and the Arcata intertie should not be relied upon as a sustainable way for providing water to MCSD. If the pipeline were to fail under the Mad River, it would be particularly significant, as repairing that failure could take months. Similarly, a failure in one of the bridge crossings or highway crossings would be very difficult and time-consuming to repair. Understanding the condition of these specific sections of pipe is critical for maintaining a reliable source of drinking water to all of the District's customers.

Another important consideration is that it would take a considerable amount of planning to replace the pipeline along Central Avenue. This is the busiest street in McKinleyville, and due to the high volume of traffic on Central Avenue, repairing a failed pipeline in this area would not be a straightforward task. This is another area where it is critical to physically assess the condition of the pipe and identify when replacement will be required. With ample planning time, this section of pipeline can be replaced with minimal disruption. According to the District's GIS data, the vast majority of the water mains and sewer mains along Central Avenue are both on the east side of the road. When it is determined that the pipe for one of these systems should be replaced, it would be prudent to replace both at the same time, thereby minimizing the overall disruption to Central Avenue traffic, and minimizing the costs for replacement through this section for each system.

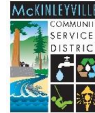
### **2.3.1 Cochran, Ramey, and Blake Booster Stations**

Aside from ongoing pump replacement, there are currently no upgrades required for the three MCSD pump stations. Major upgrades to the Ramey Pump Station were completed in 2011, and both the Cochran and Blake booster stations are generally in good condition<sup>4</sup>. It is possible that more/larger pumps could be required in the future as the District continues to develop plans to increase tank storage. However, the NCMS *Water Model Technical Report* did not present any issues with providing water to a new 5-MG tank at the Cochran site with the existing booster stations.

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<sup>3</sup> See Figures 2-3 for the locations of the Mad River crossing, Highway 101 crossings, and bridge crossings.

<sup>4</sup> There is a new generator planned for the Cochran booster station, and there are general digital control system upgrades occurring at the Cochran and Ramey booster stations (there is no SCADA control for the Blake Road station). These upgrades are all occurring outside of this Master Plan effort.



### 3. Long-Term Replacement Analysis and Near-Term Rehabilitation Plan

This section presents a long-term replacement analysis for systematically replacing the District's entire water distribution system. A high-level, Class 4 AACE International construction cost estimate (+/- 20%) was developed for the long-term replacement analysis. Using the final estimated costs, financial analyses based on replacement schedules of 50, 75, and 100 years are given in Section 4.

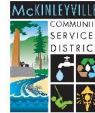
Aside from the construction of a new 5-MG tank at the Cochran site, which is outside the scope of this Master Plan, there are currently no near-term or high-priority projects that the District has identified for the water distribution system.

#### 3.1 Long-Term Replacement Cost Analysis

Phase 1 includes a high-level assessment of the District's distribution system for use in initial planning for replacement, rehabilitation, and upgrades to the system. Cost estimates are presented in an effort to understand what the overall cost would be to systematically replace the entire system, and to determine what the overall impact to user rates would be. The intent is to use this information as a starting point for Phase 2 of the Master Plan effort. Phase 2 will consist of more detailed cost estimates and more detailed scheduling/phasing for the replacement of the District's water mains.

The cost estimate for the replacement of the entire main line system is broken into four parts: 1) replacement of the typical mains (Table 6, includes all mains and appurtenances outside of the stretch from the TRF through the Mad River crossing, Highway 101 crossings, and bridge crossings), the Mad River crossing (Table 7), the pipe from the TRF to the Mad River crossing (Table 8), and the three bridge crossings (Table 9). The costs for all of these sections are combined in Table 10 for a total opinion of probable cost.

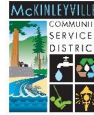
The replacement cost for the majority of the distribution system piping (typical piping that can be installed via standard open cut trenching methods) is summarized in Table 6 below. A key assumption was that all of the piping in the system would be replaced within new alignments to allow the existing pipe to remain in service during construction. Costs for replacement of other portions of the system piping (Mad River crossing, open cut trenching through difficult terrain, and bridge crossings) are given in Table 7 - Table 9.



**Table 6: Opinion of Probable Cost for Replacement of Typical Water Mains and Appurtenances in the Distribution System**

Item	Description	Units	Quantity	Unit Cost	Total Cost
1	Mobilization/Demobilization	LS	1	\$8,500,000	\$8,500,000
2	Construction Staking	LS	1	\$860,000	\$860,000
3	Traffic Control	LS	1	\$4,739,000	\$4,739,000
4	Erosion/Sediment Control, Revegetation	LS	1	\$1,700,000	\$1,700,000
5	2-inch PVC	LF	12,131	\$85	\$1,031,000
6	4-inch PVC <sup>1</sup>	LF	25,312	\$100	\$2,531,000
7	6-inch PVC <sup>1</sup>	LF	215,894	\$110	\$23,748,000
8	8-inch PVC <sup>1</sup>	LF	114,603	\$115	\$13,179,000
9	10-inch PVC <sup>1</sup>	LF	36,868	\$120	\$4,424,000
10	12-inch PVC <sup>1</sup>	LF	24,184	\$125	\$3,023,000
11	14-inch PVC <sup>1</sup>	LF	14,468	\$130	\$1,881,000
12	16-inch PVC <sup>1</sup>	LF	12,782	\$140	\$1,790,000
13	18-inch PVC <sup>1</sup>	LF	21,318	\$150	\$3,198,000
14	Paving for 2"-6" Pipe Trenches	LF	237,931	\$20	\$4,759,000
15	Paving for 8"-12" Pipe Trenches	LF	163,666	\$25	\$4,092,000
16	Paving for 14"-18" Pipe Trenches	LF	42,719	\$30	\$1,282,000
17	Air Release Valve Assemblies	EA	147	\$5,000	\$735,000
18	Pressure Reducing Valve Assemblies	EA	5	\$5,000	\$25,000
19	Blowoff Assemblies	EA	268	\$6,000	\$1,608,000
20	2-inch Gate Valve with Box	EA	240	\$700	\$168,000
21	4-inch Gate Valve with Box	EA	93	\$1,100	\$102,000
22	6-inch Gate Valve with Box	EA	692	\$1,500	\$1,038,000
23	8-inch Butterfly Valve with Box	EA	314	\$2,500	\$785,000
24	10-inch Butterfly Valve with Box	EA	83	\$4,500	\$374,000
25	12-inch Butterfly Valve with Box	EA	47	\$5,000	\$235,000
26	14-inch Butterfly Valve with Box	EA	12	\$6,500	\$78,000
27	16-inch Butterfly Valve with Box	EA	17	\$8,000	\$136,000
28	18-inch Butterfly Valve with Box	EA	22	\$9,500	\$209,000
<b>Construction Subtotal</b>					<b>\$86,230,000</b>
Contingency (20%)					\$17,246,000
<b>Opinion of Probable Construction Cost</b>					<b>\$103,476,000</b>
Permitting (10%)					\$10,348,000
Engineering Design (10%)					\$10,348,000
Construction Management (10%)					\$10,348,000
<b>Total Opinion of Probable Cost (nearest million)</b>					<b>\$135,000,000</b>

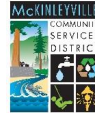
<sup>1</sup> Includes trenching, bedding, and backfill



The quantities/costs given in Table 6 were determined as follows:

- The District's GIS was used to determine the following quantities: length of pipe within and outside of roadways, isolation valves, PRV assemblies, and blowoff assemblies.
- Mobilization/demobilization costs were assumed to be approximately 10% of the construction subtotal.
- Construction staking was estimated as \$450 per hour for a crew staking 2,000 feet per 8-hour day.
- Traffic control was estimated as \$400 per hour for a crew, with 300 feet of pipe installed per 8-hour day. This was calculated for only the amount of pipe that would be installed within a roadway.
- Erosion and sediment control was assumed to be approximately 2% of the construction subtotal.
- Costs for the rest of the construction items were based on figures from recently bid construction projects and engineering judgment.
- Paving costs were only included for sections where there is pipe within a roadway.
- Isolation valves 6 inches and smaller were assumed to be gate valves, with anything larger assumed to be a butterfly valve.
- Permitting, engineering design, and construction management percentage values were based on engineering judgment and experience from previously completed similar projects.





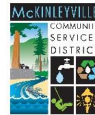
The cost estimate for the Mad River crossing is given in Table 7 below.

**Table 7: Opinion of Probable Cost for the Replacement of the Mad River Crossing Water Main and Appurtenances**

Item	Description	Units	Quantity	Unit Cost	Total Cost
1	Mobilization/Demobilization (except Drilling Equipment)	LS	1	\$40,000	\$40,000
2	Clearing and Grubbing	LS	1	\$10,000	\$10,000
3	Erosion and Sediment Control	LS	1	\$10,000	\$10,000
4	Revegetation	LS	1	\$10,000	\$10,000
5	Temporary Construction Access Improvements	LS	1	\$5,000	\$5,000
6	Horizontal Directional Drill 24-inch HDPE Transmission Main <sup>1</sup>	LS	1	\$1,000,000	\$1,000,000
7	Connect to (E) 18-inch Transmission Main	EA	2	\$50,000	\$100,000
8	18-inch Butterfly Valve with Vault	EA	2	\$9,500	\$19,000
<b>Construction Subtotal</b>					<b>\$1,194,000</b>
Contingency (20%)					\$239,000
<b>Opinion of Probable Construction Cost</b>					<b>\$1,433,000</b>
Geotechnical Investigation (15%)					\$215,000
Survey and Land/ROW Acquisition (10%)					\$143,000
Engineering Design (20%)					\$287,000
Environmental Permitting (15%)					\$215,000
Construction Management (15%)					\$215,000
<b>Total Opinion of Probable Cost</b>					<b>\$2,508,000</b>
<sup>1</sup> Includes mobilization/demobilization of drilling equipment; pilot bore and reaming; delivery, fabrication, and testing of pipe; installation of pipe; grouting both ends of the bore					

The quantities/costs given in Table 7 were determined as follows:

- The mobilization/demobilization line item was based on engineering judgment, with experience drawn from previous similar projects. Mobilization/demobilization costs for the drilling equipment were included with line item 6.
- For an HDD project of this size, approximately 10,000 square feet would need to be cleared on the entry side, and a 30-foot by approximately 550-foot pipe laydown area would be required on the exit side. Clearing and grubbing, erosion and sediment control, and revegetation were all assumed to be minor.
- Temporary construction access improvements would be required, but these would be minor due to the flat and open space on each side of the crossing.
- Due to the wall thickness of HDPE pipe, it is estimated that 24-inch nominal HDPE would be required to maintain the existing capacity for this project.



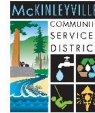
- Engineering judgment and information from similar, recently bid construction projects were used to determine an appropriate cost for the HDD work.
- There will be a connection to the existing 18-inch main on each side of the river, with a new butterfly valve at each connection. Connection costs were based on engineering judgment with experience drawn from previous similar projects. Recently bid construction projects were used to estimate butterfly valve costs.
- Geotechnical, survey and land/right-of-way acquisition, permitting, engineering design, and construction management percentage values were based on engineering judgment and experience from previously completed similar projects.

The cost estimate for replacement of the pipe from the HBMWD TRF to the Mad River crossing is given in Table 8 below. This includes a section of pipe from the TRF to West End Road that goes through very steep and heavily forested terrain, an HDD crossing under Highway 299, and additional piping up to the Mad River crossing.

**Table 8: Opinion of Probable Cost for the Replacement of the Water Main from the TRF to the Mad River Crossing**

Item	Description	Units	Quantity	Unit Cost	Total Cost
1	Mobilization/Demobilization (except Drilling Equipment)	LS	1	\$85,000	\$85,000
2	Construction Staking	LS	1	\$50,000	\$50,000
3	Erosion and Sediment Control	LS	1	\$50,000	\$50,000
4	Clearing and Grubbing	LS	1	\$50,000	\$50,000
5	Revegetation	LS	1	\$50,000	\$50,000
6	18-inch PVC from TRF to West End Rd	LF	1,330	\$350	\$466,000
7	Highway 299 Crossing (Directional Drill) <sup>1</sup>	LS	1	\$750,000	\$750,000
8	Other 18-inch PVC (outside of Roadway, Minimal Clearing/Grubbing)	LF	790	\$150	\$119,000
<b>Construction Subtotal</b>					<b>\$1,620,000</b>
Contingency (20%)					\$324,000
<b>Opinion of Probable Construction Cost</b>					<b>\$1,944,000</b>
Geotechnical Investigation (HDD)					\$80,000
Survey and Land/ROW Acquisition (10%)					\$194,000
Engineering Design (10%)					\$194,000
Environmental Permitting (10%)					\$194,000
Construction Management (15%)					\$292,000
<b>Total Opinion of Probable Cost</b>					<b>\$2,898,000</b>
<sup>1</sup> Includes mobilization/demobilization of drilling equipment; pilot bore and reaming; delivery, fabrication, and testing of pipe; installation of pipe; grouting both ends of the bore					

The quantities/costs given in Table 8 were determined as follows:



- Mobilization/demobilization costs were assumed to be approximately 10% of the construction subtotal, excluding the HDD cost (mobilization/demobilization of drilling equipment was included in line item 7).
- Due to the steep and forested terrain from the TRF to West End Road, construction staking, erosion and sediment control, clearing and grubbing, and revegetation would be more costly than for other portions of the system. Engineering judgment was used to determine these costs, with experience drawn from previous projects.
- The installation of the 18-inch piping from the TRF to West End Road was considered to be double the cost of “typical main” installation because of the steep and forested terrain. The installation of the rest of the pipe used the same cost as the main cost estimate.
- The cost for directional drilling under Highway 299 was largely based on the cost that was developed for the Mad River crossing, with a reduction based on easier construction and a shorter drill bore.
- Geotechnical, survey and land/right-of-way acquisition, permitting, engineering design, and construction management percentage values were based on engineering judgment and experience from previously completed similar projects.

The cost estimate for replacement of the pipe in the three bridge crossings is given in Table 9 below.

**Table 9: Opinion of Probable Cost for the Replacement of the Bridge Crossing Water Mains and Appurtenances (Murray Rd, Hiller Rd, and School Rd)**

Item	Description	Units	Quantity	Unit Cost	Total Cost
1	Mobilization/Demobilization	LS	1	\$45,000	\$45,000
2	12-inch Ductile Iron Pipe with Mechanical Joints & Epoxy Coating	LF	900	\$165	\$149,000
3	Pipe Support and Centralizers	EA	45	\$2,500	\$113,000
4	12-inch Butterfly Valves with Box	EA	6	\$5,000	\$30,000
5	4-inch Combination Air Valve Assembly	EA	3	\$13,000	\$39,000
6	12-inch Elbows with Restrained Joints	EA	12	\$2,000	\$24,000
7	Earthquake Isolation Joints	EA	6	\$2,500	\$15,000
8	Erosion and Sediment Control	LS	1	\$15,000	\$15,000
<b>Construction Subtotal</b>					<b>\$430,000</b>
Contingency (20%)					\$86,000
<b>Opinion of Probable Construction Cost</b>					<b>\$516,000</b>
Survey and Staking (10%)					\$52,000
Engineering Design (20%)					\$103,000
Environmental Permitting (15%)					\$77,000
Construction Management (15%)					\$77,000
<b>Total Opinion of Probable Cost</b>					<b>\$825,000</b>



Costs for the items given in Table 9 were largely based on bids from previous similar construction projects and engineering judgment. The following assumptions were made with regard to quantities:

- Linear footage was estimated based on the District's GIS data.
- Centralizers would be required every 20 linear feet.
- There would be one isolation valve at each end of each bridge.
- Each bridge crossing would require an ARV assembly.
- Four 12-inch elbows would be required at each bridge crossing.
- Two earthquake isolation joints would be required at each crossing.
- Survey and staking, permitting, engineering design, and construction management percentage values were based on engineering judgment and experience from previously completed similar projects.

The four separate cost estimates were combined into one table to provide a total cost for the replacement of the entire water distribution system (Table 10).

**Table 10: Total Opinion of Probable Cost for Replacement of the Distribution System Water Mains and Appurtenances**

Item	Description	Total Cost
1	Main Distribution System Replacement	\$135,000,000
2	Mad River Crossing	\$2,508,000
3	Pipe from TRF to Mad River Crossing	\$2,898,000
4	Hwy 101 Crossings at Myers Rd & Eucalyptus Rd (Directional Drill)	\$700,000
5	Bridge Crossings (School Rd, Hiller Rd, & Murray Rd)	\$825,000
<b>Total Opinion of Probable Cost (nearest million)</b>		<b>\$142,000,000</b>

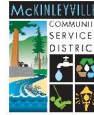
The cost for line item 4 in Table 10 was not included in the other cost estimates. It was determined that the cost for replacing these Highway 101 crossings (via HDD) would be approximately \$350,000 each (including survey, design, permitting, and construction management). These crossings consist of 8-inch pipe, which decreases the HDD cost significantly when compared to the 18-inch pipe crossing under Highway 299 and the Mad River.

The total Class 4 AACE International construction cost estimate for replacing the entire water distribution system is \$142 million in today's dollars.

### 3.2 Near-Term Rehabilitation Plan

The District is installing a new 5-MG tank at the Cochran site, which is outside the scope of this Master Plan. There are no other currently known or projected issues with the water system that require near-term attention (within the next approximately 5-10 years).

However, it should be noted that the 8-inch asbestos cement (AC) sanitary sewer main on Central Avenue from Sutter Road to Hiller Road has become severely corroded by hydrogen sulfide gas. The joints of the sewer main in this area have corroded away to the point where the gaskets at the



joints are actually exposed. It is likely that this problem will be addressed in the near term (next approximately 5-10 years). It is possible that this sewer main can be repaired by lining the existing pipe; however, the pipe may also need to be replaced to provide sufficient structural support. If it is determined that the sewer main needs to be replaced, it may be prudent to replace the water main at the same time, since it will also likely need to be replaced in the next 10-20 years. Performing these projects concurrently would likely minimize the overall disruption to Central Avenue traffic and minimize the costs for replacement of this section of pipe for each system.

## 4. Financial Analysis

Willdan Financial Services (Willdan) was retained by the District to develop a multi-year pro forma analysis for the water system reflecting the potential financial impact of the long-term systematic replacement of the entire distribution system as discussed in Phase 1 of this Master Plan. Specifically, Willdan prepared 30-year projections of net operating results under three specific scenarios for funding the improvements analyzed in Section 3.1. These scenarios included completing the improvements in 50 years, 75 years, and 100 years, with an analysis of how each of these three planning horizons affect District finances in a 30-year projection period.

Within each of these scenarios, Willdan developed three distinct analyses depicting operating results under the following rate paths:

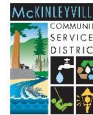
- No Rate Increases – referred to as the “do nothing” scenario and assesses the District’s ability to support operations and capital improvements assuming no future rate increases.
- Just-in-Time Rate Increases – calculates the level of rate adjustments needed on a “just-in-time” basis to meet system revenue requirements, including capital improvements.
- Phased-In Rate Increases – depicts a possible rate path that attempts to avoid large rate adjustments by phasing them in over time.

Ultimately the “no rate” increases scenario was not deemed viable, as the projected cash reserves would fall under the recommended reserves immediately after the implementation of the system replacement projects.

Willdan produced a technical memorandum (memo) that has been included as Appendix B. The memo provides the following:

- The general approach of the analysis and the assumptions that were made
- Projected revenues and expenses
- Required rate adjustments for the different scenarios described above
- Net operating results
- Debt projections and debt service coverage
- Projected cash reserves

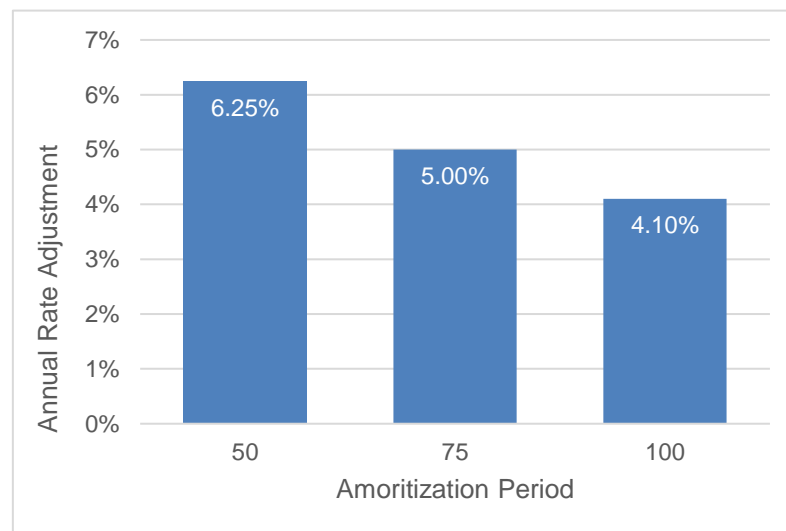
A summary of the rate adjustments required to support the long-term replacement of the entire system under each scenario is provided in Table 11.



**Table 11: Range of Potential Rate Adjustments**

Amortization Period	Rate Scenario	Rate Adjustments
50-year	Just-in-Time	0.00% - 41.40% Average – 7.28%
	Phased-In	6.25%
75-year	Just-in-Time	0.00% - 30.30% Average – 5.59%
	Phased-In	5.00%
100-year	Just-in-Time	0.00% - 24.20% Average – 4.64%
	Phased-In	4.10%

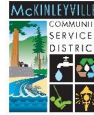
A bar graph illustrating rate adjustments required using the phased-in method is provided as Figure 4.



**Figure 4: Estimated Annual Rate Adjustments Required Using the Phased-In Method**

It is important to emphasize that we are not recommending that the District begin implementing the rate increases presented in this section. This is simply an analysis to assess what effect the replacement of the entire water distribution system would have on user rates and District finances.

It should be noted that MCSD currently has a policy prescribing that all capital improvement projects exceeding \$500,000 in a given year will be funded by debt. Likewise, any project under the \$500,000 threshold will be funded on a pay-as-you-go basis with available unrestricted cash. The scenarios summarized in the Willdan memo assume MCSD will continue with this policy. However, as part of this exercise, the project team discussed the possibility of revising this policy to allow for “bundling” of project costs into fewer borrowings to take advantage of any available savings in debt issuance costs. For example, MCSD could bundle three years of project costs into a single



borrowing, possibly resulting in efficiencies and savings. It is important to note that Willdan is not a registered financial advisor and is not recommending a particular debt structure. Should MCSD be interested in examining any potential benefits from alternative debt management approaches, we encourage you to consult with your financial advisor.

## 5. Conclusions, Recommendations, and Next Steps

This document presents Phase 1 of the MCSD Water Main Line Rehabilitation Master Plan, a high-level assessment of the District's water distribution system for use in initial planning for rehabilitation and upgrades to the system. Phase 1 has provided the following:

- Overview of the existing distribution system.
- Summary of previous related studies.
- Information on anticipated population growth.
- Preliminary needs assessment.
- Long-term replacement analysis including cost and scheduling information.
- Financial analysis based on the cost estimates.

This final section presents conclusions, recommendations, and information on the next steps in the overall process.

### 5.1 Conclusions

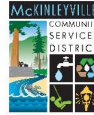
The District's water distribution system is generally in good condition. There are no major areas of concern, and pipe size (i.e. flow capacity) is not projected to be an issue in the foreseeable future. There are some minor issues with low pressure and inadequate fire flow in higher elevation areas, and high pressure in lower elevation areas, but the District has plans for addressing these issues outside of the scope of this Master Plan.

The key conclusion in Phase 1 of this Master Plan is that the District's water distribution system was constructed in 1973 and is aging. As the system continues to age, replacement and rehabilitation of existing infrastructure will be necessary to maintain an effective, functional system. The total estimated cost to replace the entire distribution system is \$142 million in today's dollars. Using the phased-in approach of rate increases as discussed in Section 4, it is projected that replacing the entire system over 50, 75, or 100 years would require annual rate increases of 6.25%, 5.00%, and 4.10%, respectively. It is important to emphasize that we are not recommending that the District implement these rates or necessarily plan for the replacement of the entire distribution system. Phase 2 of the Master Planning process will refine the recommended extent of system replacement and the necessary rates required to do so.

### 5.2 Recommendations and Next Steps

While there are currently no high-priority, near-term projects required for the distribution system, it is critical that the District begin planning and budgeting for upgrades and replacement of system





components. The majority of the system is AC pipe that is over 40 years old, and pipe failures will likely become an issue in the next 10 to 30 years if the District does not begin this process.

The long-term replacement analysis provided in this document presents cost estimates, and corresponding financial impacts, for replacing the entire system. However, the District likely does not need to replace (nor do we recommend that they replace) the entire distribution system. There are certainly sections where it would be much more cost effective to repair the occasional leak rather than replace the whole section of main line, particularly in less densely populated areas with smaller pipes. The cost estimates provided in this document are presented in an effort to understand what the overall cost would be to systematically replace the entire system, and to determine what the overall impact to user rates would be. The intent is to use this information as a starting point for Phase 2 of the Master Plan effort. Phase 2 will consist of more detailed cost estimates and more detailed scheduling/phasing for the replacement of the District's water mains. The replacement schedule will be refined through field investigation of the actual condition of portions of the distribution system. After specific areas of the system are assessed, appropriate replacement methodologies (e.g. lining, bursting, or direct replacement) will be further developed with associated construction cost estimates that are more refined. The updated replacement schedule and cost information will be used to refine the financial analysis provided in Phase 1.

Ultimately, the District needs to prioritize when to replace certain sections of pipe and further define how much will be replaced per year to develop a capital improvement plan that outlines how many feet of pipe will be replaced in a given year in a given area. This information will be provided as a result of this overall Master Plan effort.

## **Appendices**

## **Appendix A**

# **McKinleyville Water Distribution System: Pipe Inventory by Age, Material, and Diameter**

**McKinleyville Water Distribution System**  
**Pipe Breakdown by Age, Material, and Diameter**

Year Installed	Age (years)	Amount of Water Pipe Installed (feet)																	Total
		PVC						AC						DIP					
		2"	4"	6"	8"	10"	18"	4"	6"	8"	10"	12"	14"	16"	6"	8"	12"	18"	
1973	44	2,335						10,833	81,810	62,223	36,641	19,168	9,732	12,445				23,795	258,982
1974	43																		0
1975	42																		0
1976	41																		0
1977	40																		0
1978	39																		0
1979	38																		0
1980	37																		0
1981	36																		0
1982	35	3,933						6,961	17,404	6,660		250	4,720						39,928
1983	34	276							4,914	1,844		945							7,979
1984	33								1,893	760									2,653
1985	32	132						1,165	4,200	2,440									7,937
1986	31								1,041	1,502									2,543
1987	30		904	1,456	5,359														7,719
1988	29		933	4,759	1,122														6,814
1989	28		197	7,245	715														8,157
1990	27	293		5,605	756														6,654
1991	26			5,178															5,178
1992	25		425	7,728															8,153
1993	24		1,353	12,112	390											165			14,020
1994	23		260	4,166	466														4,892
1995	22			2,997	182														3,179
1996	21			3,858	471														4,329
1997	20			909	2,584														3,493
1998	19			3,427	4,106														7,533
1999	18			1,757															1,757
2000	17			5,289															5,289
2001	16			1,794	1,354	1,139													4,287
2002	15	160		6,573	375														7,108
2003	14		180	4,341	3,664														8,185
2004	13			1,513															1,513
2005	12			3,618	1,994														5,612
2006	11		364	2,383	3,949														6,696
2007	10			2,390	680										80				3,150
2008	9																		0
2009	8	245	179	1,152	358														1,934
2010	7	82	167	3,291	2,641												900		7,081
2011	6																		0
2012	5		600	1,640															2,240
2013	4																		0
2014	3		75	2,251	885		3,675											300	7,186
2015	2																		0
2016	1																		0
Total		7,456	5,637	97,432	32,051	1,139	3,675	18,959	111,262	75,429	36,641	20,363	14,452	12,445	80	165	900	24,095	462,181

Data provided by MCSD

6/22/2017

## **Appendix B**

# **Summary Results of Financial Pro Forma Analyses (Willdan Financial Services, 2017)**

# MEMORANDUM

To:	Pat Kaspari; Greg Orsini; James Henry; Colleen Trask
From:	Jeff McGarvey
Date:	November 21, 2017
Client:	McKinleyville Community Services District
Project:	Water and Sewer Master Plans
Subject:	Summary Results of Financial Pro Forma Analyses

Willdan Financial Services (Willdan) was retained by McKinleyville Community Services District (M/CSD) to develop multi-year pro forma analyses for both the water and sewer systems reflecting the potential financial impact of infrastructure improvements identified in the Master Plans recently completed by GHD, Inc (GHD). Specifically, Willdan prepared 30-year projections of net operating results for each system under three (3) specific scenarios for funding the improvements identified in the master plans. These scenarios included completing the improvements in 50 years, 75 years, and 100 years. Within each of these scenarios, Willdan developed three (3) distinct analyses depicting operating results under the following rate paths:

- No Rate Increases – referred to as the “do nothing” scenario and assesses the utilities ability to support operations and capital improvements assuming no future rate increases.
- Just-in-Time Rate Increases – calculates the level of rates adjustments needed on a “just-in-time” basis to meet system revenue requirements, including capital improvements.
- Phased-In Rate Increases – depicts a possible rate path that attempts to avoid large rate adjustments by phasing them in over time.

The following narrative provides a brief description of the process and assumptions that were used to develop the operating revenues and expenses as well as a summary of each of the scenarios. Additional detail is available should it be required.

## General Approach and Assumptions

To develop the requested scenarios, it was necessary to first develop a projection of the operating revenues and expenses for each system. As a note, while the requested scenarios consider up to 100 years, for purposes of the financial analysis, the projection period is limited to 30 years (Fiscal Years 2018-2047). For purposes of this technical memorandum, it was determined that it is only necessary to display 20 years (Fiscal Years 2018 – 2037). However, the detailed 30-year analysis and worksheets are available for review.

### Projected Revenues and Expenses

M/CSD’s approved operating budget for Fiscal Year 2018 served as the basis for projected operating revenues.

### Projected Revenues

- Water Base Charges, Water Metered Sales and Sewer Charges - future years were adjusted assuming growth (1.0%) and any rate adjustments considered as part of each respective scenario.
- Other System Revenues - with the exception of interest earnings, were projected using annual escalation factors that were reviewed with the M/CSD staff.
- Interest Earnings - were projected based on the average annual cash balances in each respective fiscal year assuming an interest earnings rate of 0.25%.

### Projected Expenses

- Each line item expense (per the budget) was analyzed and annual escalation factors were assigned to each item. As with the revenue, these escalation factors were reviewed and revised by M/CSD staff.
- Current Depreciation Expense was held constant throughout the projection period.
- Depreciation Expense associated with the infrastructure improvements identified in the Master Plans was estimated based on an Estimated Average Useful Life of 40 years.

### Capital Improvement Plan (CIP)

- Capital expenditures for the period FY2018-2036, excluding those anticipated by the Master Plans, were provided by M/CSD.
- Funding of the CIP was assumed to occur per M/CSD policy which states that expenditures exceeding \$500,000 per project per year will be funded through debt. Those projects costing less than \$500,000 are assumed to be funded from available cash on a pay-as-you-go basis.

### Master Plan

- Costs associated with the infrastructure improvements identified in the master plan(s) were developed by M/CSD's consulting engineer, GHD. Per GHD's master plans, the estimated costs of rehabilitation of the water and sewer systems are approximately \$142,000,000 each. Willdan assumed these costs estimates were reliable and did not attempt to independently verify.
- At the direction of GHD, it was assumed that the master plan projects would initiate in fiscal year 2027.

### Debt Service

- For purposed of estimating annual debt service payments we assumed a term of 30 years, interest rate of 4.0% and issuance costs of 2.0%.



## Observations and Comments

### General Findings

- The infrastructure improvements identified in the Master Plans are not feasible without rate increases. The level of rate adjustments necessary to support the Master Plan vary from scenario to scenario and are summarized below in Table 1:

**Table 1**

Range of Potential Rate Adjustments

Amortization Period	Rate Scenario	Water System	Sewer System
50 yr	None	-	-
	Just-in-Time	0.00% - 41.40% Avg – 7.28%	0.00% - 43.40% Avg – 8.62%
	Phased-In (levelized)	6.25%	7.25%
75 yr	None	-	-
	Just-in-Time	0.00% - 30.30% Avg – 5.59%	0.00% - 42.10% Avg – 7.16%
	Phased-In (levelized)	5.00%	6.10%
100 yrs	None	-	-
	Just-in-Time	0.00% - 24.20% Avg – 4.64%	0.00% - 44.00% Avg – 6.37%
	Phased-In (levelized)	4.10%	5.50%

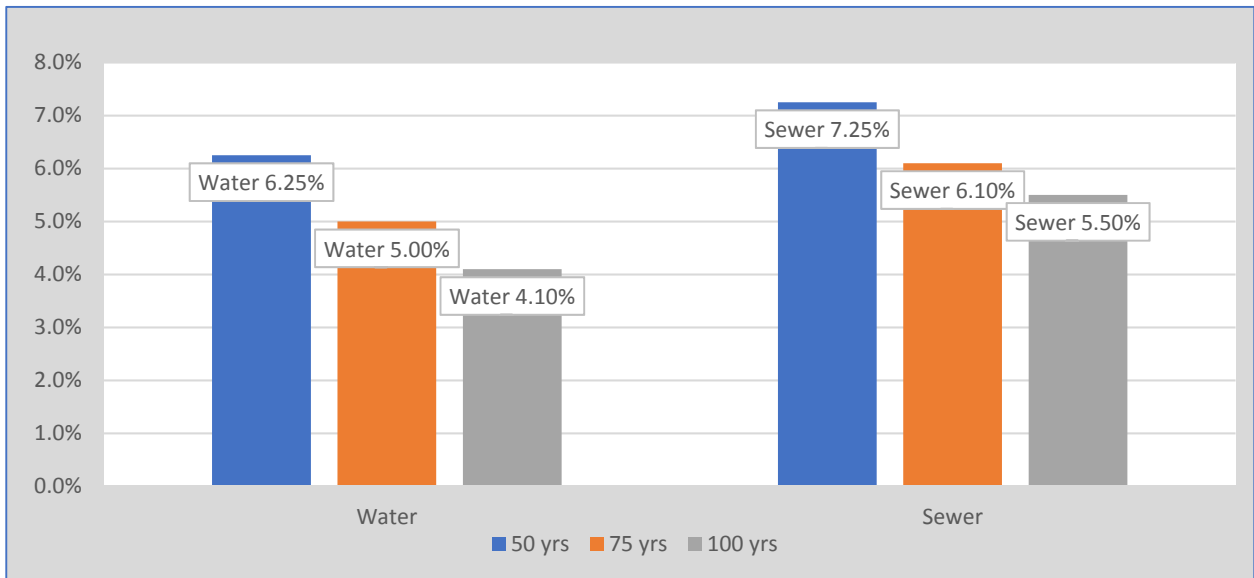
More detailed tables are included herein. Also, upon request we can produce the detailed worksheets from the analysis.

### Observations

- As can be seen from Table 1 and the supporting tables that follow, the longer amortization period has the effect of reducing the average rate adjustments required for each utility.

Figure 1 below presents the estimated annual rate adjustments necessary assuming M/CSD opts to use the Phased-In, or levelized, method to increase rates.

**Figure 1**  
Estimated Annual Rate Adjustments



- As described herein, M/CSD currently has a policy which indicates that all capital improvement projects exceeding \$500,000 in a given year will be funded by debt. Likewise, any project under the \$500,000 threshold will be funded on a pay-as-you-go basis with available unrestricted cash. The scenarios summarized in this memorandum assume M/CSD will continue with this policy. However, as part of this exercise, the project team discussed the possibility of revising this policy to allow for “bundling” of project costs into few borrowings to take advantage of any available savings in debt issuance costs. For example, M/CSD could bundle 3 years of project costs into a single borrowing possibly resulting in efficiencies and savings. It is important to note that Willdan is not a registered financial advisor and is not recommending a particular debt structure. Should M/CSD be interested in examining any potential benefits from alternative debt management approaches we encourage you to consult with your financial advisor.
- As indicated herein, for the Water System, Phased-In (Levelized) rate scenarios, cash reserves accumulate well above the targeted amounts. This is a result of the need to meet the targeted debt service coverage requirement of 1.20. It is not recommended that M/CSD accumulate excess cash reserves. In the event the need to meet debt service coverage requirements results in the generation of excess cash, this cash should be used to offset the need for future debt. As discussed during this effort, a more detailed and specific capital financing plan will be developed as part of a future engagement.

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# Water System

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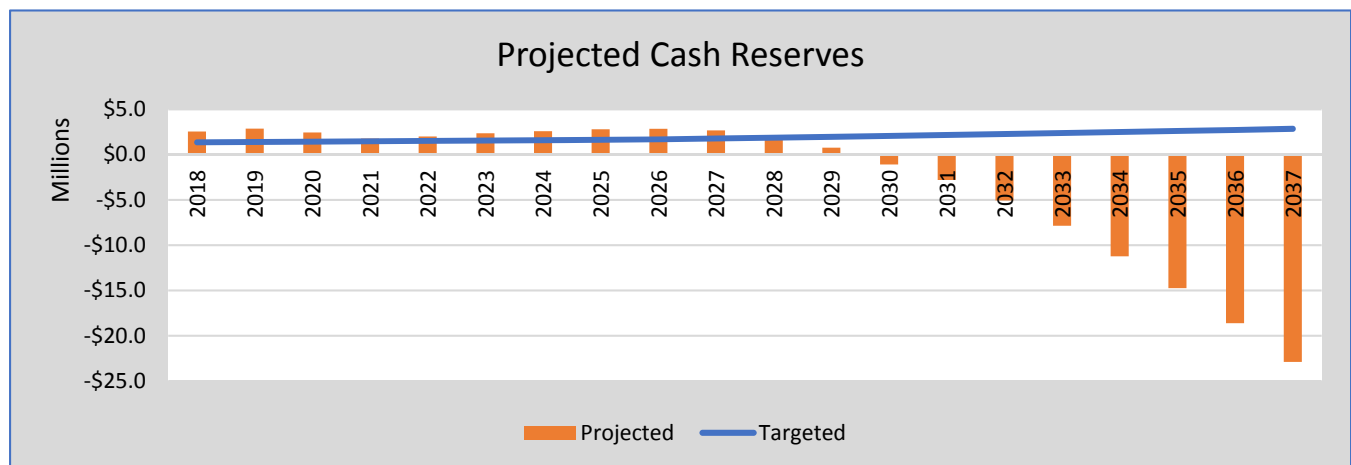
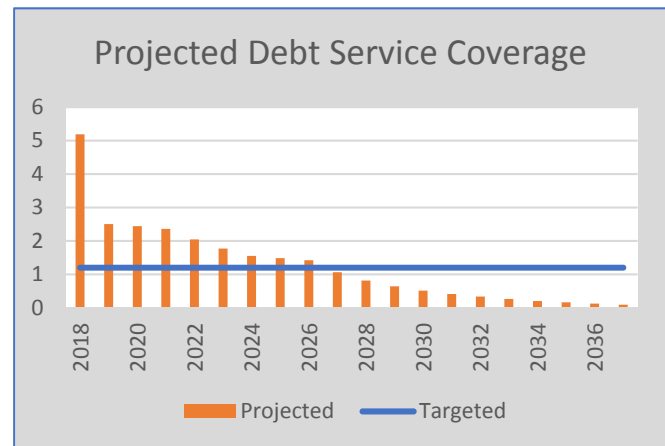
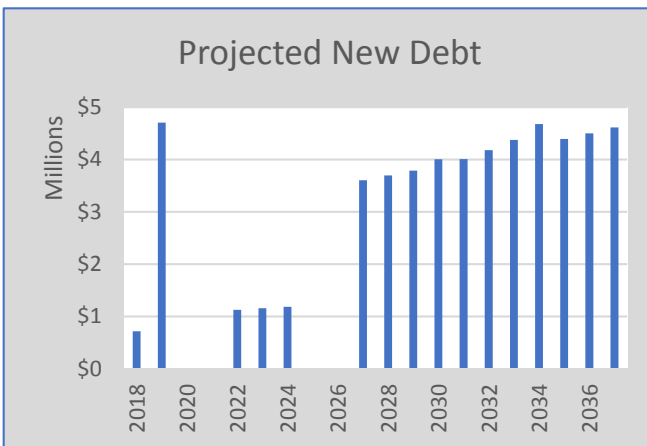
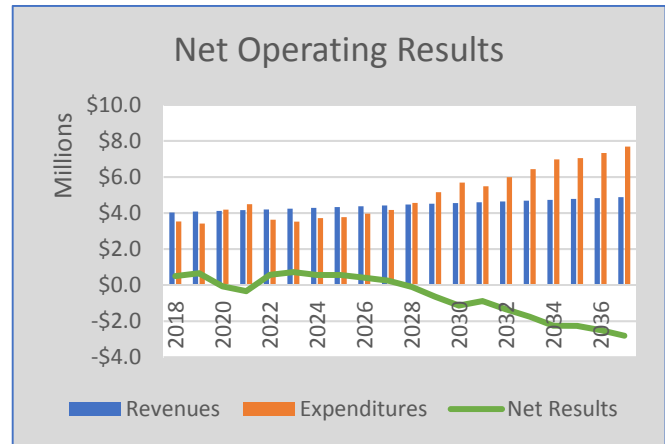
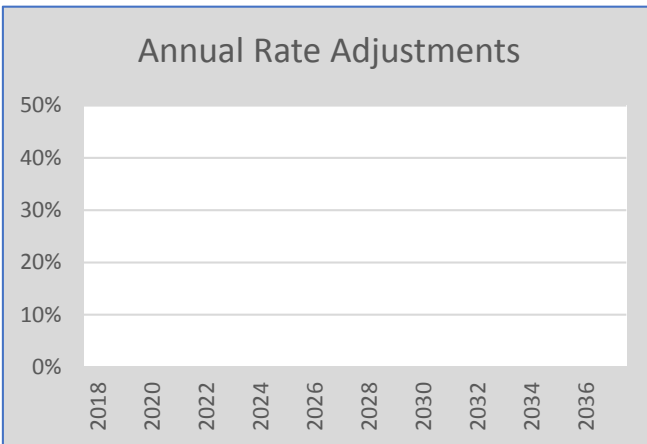
Scenario 1 Master Plan Amortized over 50 Years

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## Water System

### Scenario 1 – Master Plan Amortized over 50 Years

Rate Increase	None
Fund Approach	Current Policy - >\$500k debt funded in project year

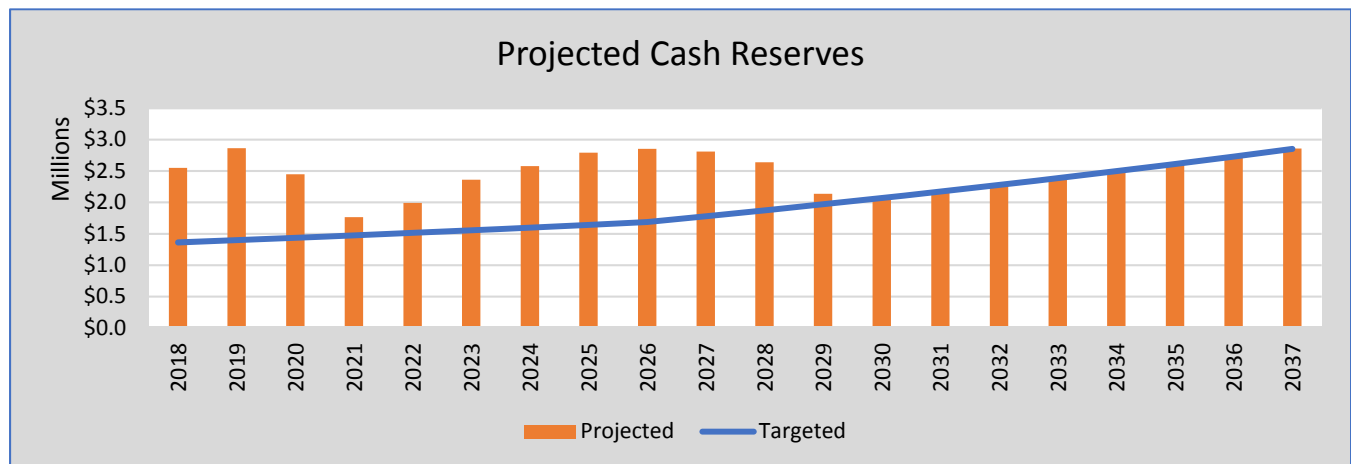
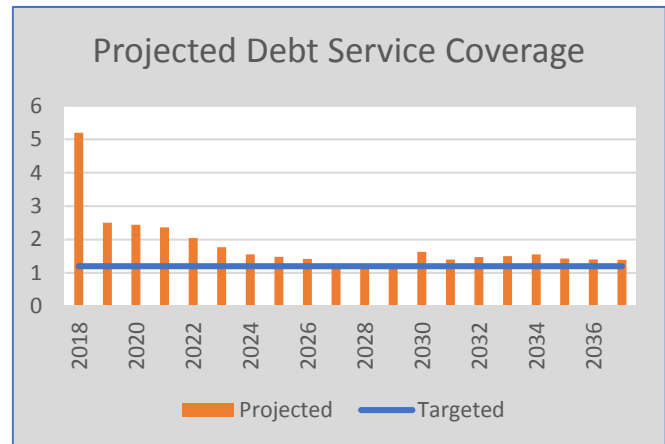
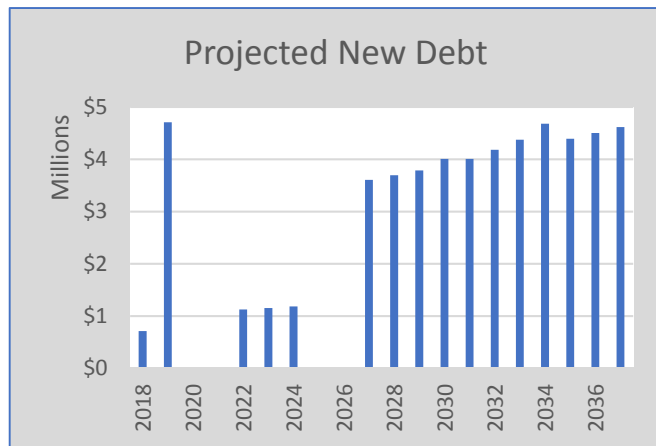
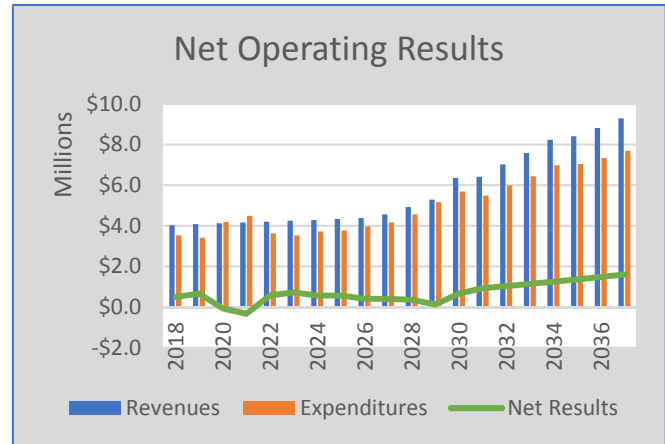
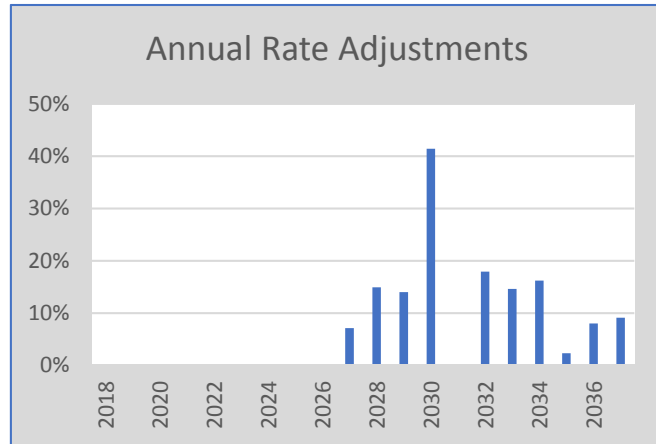


Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	-	1.20	5.19	1,362	2,548	-	1,554
2019	-	1.20	2.50	1,398	2,862	-	5,004
2020	-	1.20	2.44	1,436	2,448	-	1,085
2021	-	1.20	2.36	1,475	1,765	-	1,315
2022	-	1.20	2.04	1,515	1,990	-	1,406
2023	-	1.20	1.77	1,556	2,360	-	1,181
2024	-	1.20	1.55	1,599	2,577	-	1,251
2025	-	1.20	1.48	1,643	2,791	-	51
2026	-	1.20	1.42	1,688	2,852	-	155
2027	-	1.20	1.06	1,780	2,667	3,621	3,592
2028	-	1.20	0.81	1,874	2,043	3,712	3,760
2029	-	1.20	0.64	1,971	768	3,805	4,131
2030	-	1.20	0.51	2,070	(1,093)	3,900	4,540
2031	-	1.20	0.41	2,173	(2,805)	3,997	3,996
2032	-	1.20	0.33	2,278	(5,077)	4,097	4,313
2033	-	1.20	0.26	2,386	(7,860)	4,200	4,585
2034	-	1.20	0.20	2,498	(11,248)	4,305	5,039
2035	-	1.20	0.16	2,613	(14,762)	4,412	4,446
2036	-	1.20	0.12	2,731	(18,627)	4,523	4,456
2037	-	1.20	0.09	2,852	(22,911)	4,636	4,523
<u>Note:</u>							
[1] Amounts shown in \$1,000's.							

## Water System

### Scenario 1 – Master Plan Amortized over 50 Years

Rate Increase	Just in Time
Fund Approach	Current Policy - >\$500k debt funded in project year



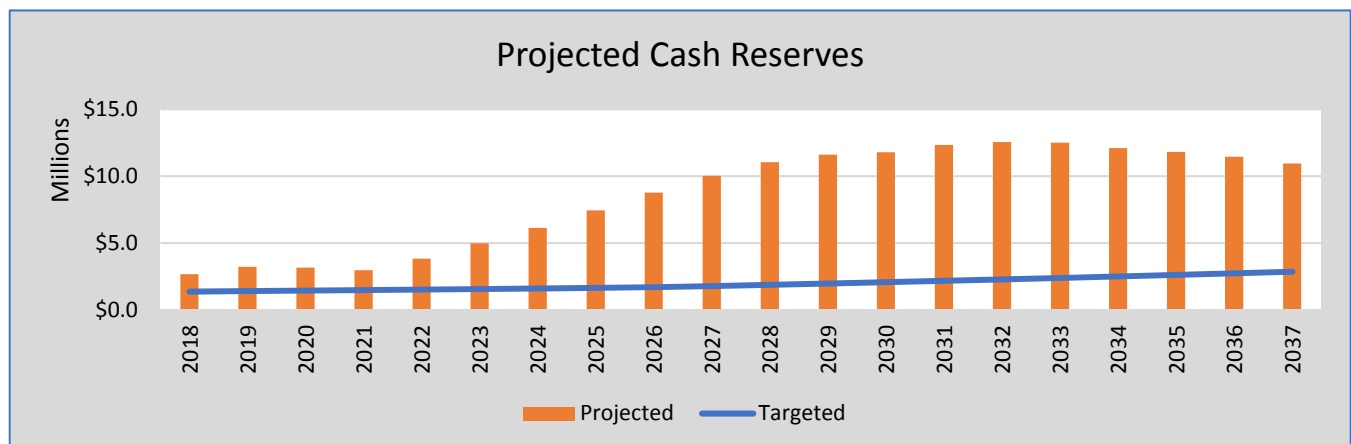
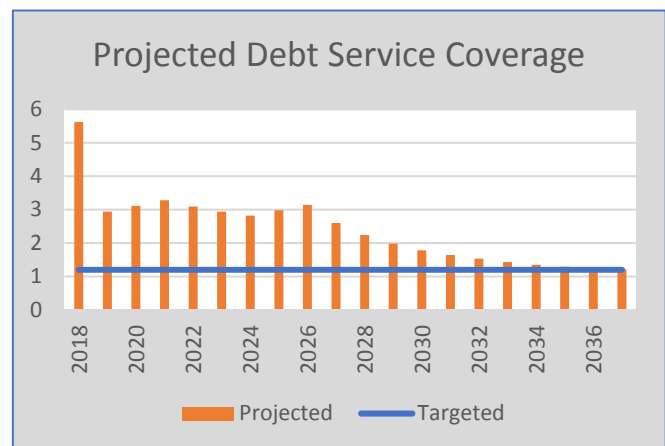
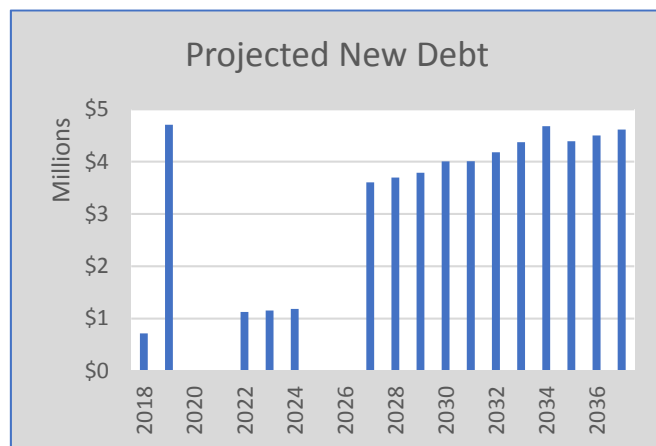
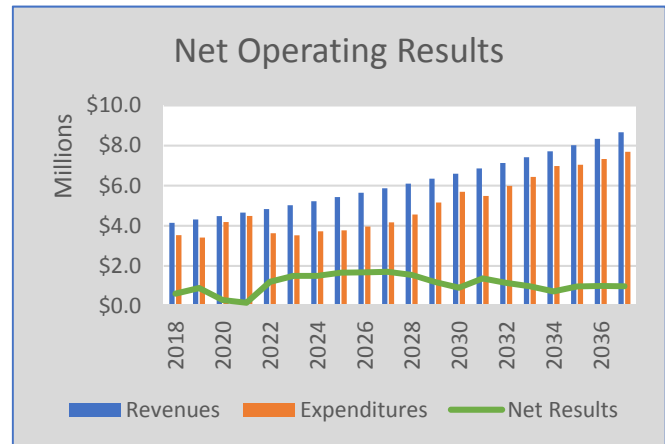
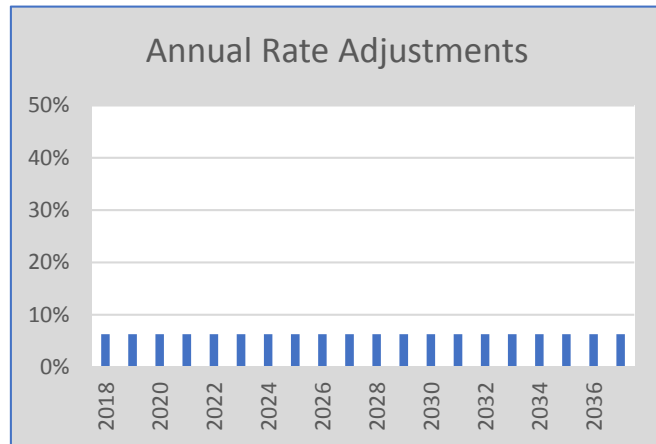
Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	0.00%	1.20	5.19	1,362	2,548	-	1,554
2019	0.00%	1.20	2.50	1,398	2,862	-	5,004
2020	0.00%	1.20	2.44	1,436	2,448	-	1,085
2021	0.00%	1.20	2.36	1,475	1,765	-	1,315
2022	0.00%	1.20	2.04	1,515	1,990	-	1,406
2023	0.00%	1.20	1.77	1,556	2,360	-	1,181
2024	0.00%	1.20	1.55	1,599	2,577	-	1,251
2025	0.00%	1.20	1.48	1,643	2,791	-	51
2026	0.00%	1.20	1.42	1,688	2,852	-	155
2027	7.10%	1.20	1.21	1,780	2,808	3,621	3,592
2028	14.90%	1.20	1.21	1,874	2,637	3,712	3,760
2029	14.00%	1.20	1.21	1,971	2,137	3,805	4,131
2030	41.40%	1.20	1.63	2,070	2,070	3,900	4,540
2031	0.00%	1.20	1.40	2,173	2,176	3,997	3,996
2032	17.90%	1.20	1.47	2,278	2,281	4,097	4,313
2033	14.60%	1.20	1.50	2,386	2,388	4,200	4,585
2034	16.20%	1.20	1.55	2,498	2,501	4,305	5,039
2035	2.30%	1.20	1.43	2,613	2,615	4,412	4,446
2036	8.00%	1.20	1.40	2,731	2,734	4,523	4,456
2037	9.10%	1.20	1.39	2,852	2,857	4,636	4,523
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					



## Water System

### Scenario 1 – Master Plan Amortized over 50 Years

Rate Increase	Phased In (level)
Fund Approach	Current Policy - >\$500k debt funded in project year



Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	6.25%	1.20	5.62	1,362	2,662	-	1,554
2019	6.25%	1.20	2.94	1,398	3,209	-	5,004
2020	6.25%	1.20	3.11	1,436	3,155	-	1,085
2021	6.25%	1.20	3.28	1,475	2,965	-	1,315
2022	6.25%	1.20	3.09	1,515	3,822	-	1,406
2023	6.25%	1.20	2.94	1,556	4,972	-	1,181
2024	6.25%	1.20	2.82	1,599	6,124	-	1,251
2025	6.25%	1.20	2.98	1,643	7,435	-	51
2026	6.25%	1.20	3.14	1,688	8,765	-	155
2027	6.25%	1.20	2.60	1,780	10,028	3,621	3,592
2028	6.25%	1.20	2.24	1,874	11,041	3,712	3,760
2029	6.25%	1.20	1.98	1,971	11,601	3,805	4,131
2030	6.25%	1.20	1.78	2,070	11,783	3,900	4,540
2031	6.25%	1.20	1.64	2,173	12,333	3,997	3,996
2032	6.25%	1.20	1.53	2,278	12,552	4,097	4,313
2033	6.25%	1.20	1.43	2,386	12,500	4,200	4,585
2034	6.25%	1.20	1.35	2,498	12,090	4,305	5,039
2035	6.25%	1.20	1.29	2,613	11,810	4,412	4,446
2036	6.25%	1.20	1.25	2,731	11,448	4,523	4,456
2037	6.25%	1.20	1.21	2,852	10,947	4,636	4,523
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					

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# Water System

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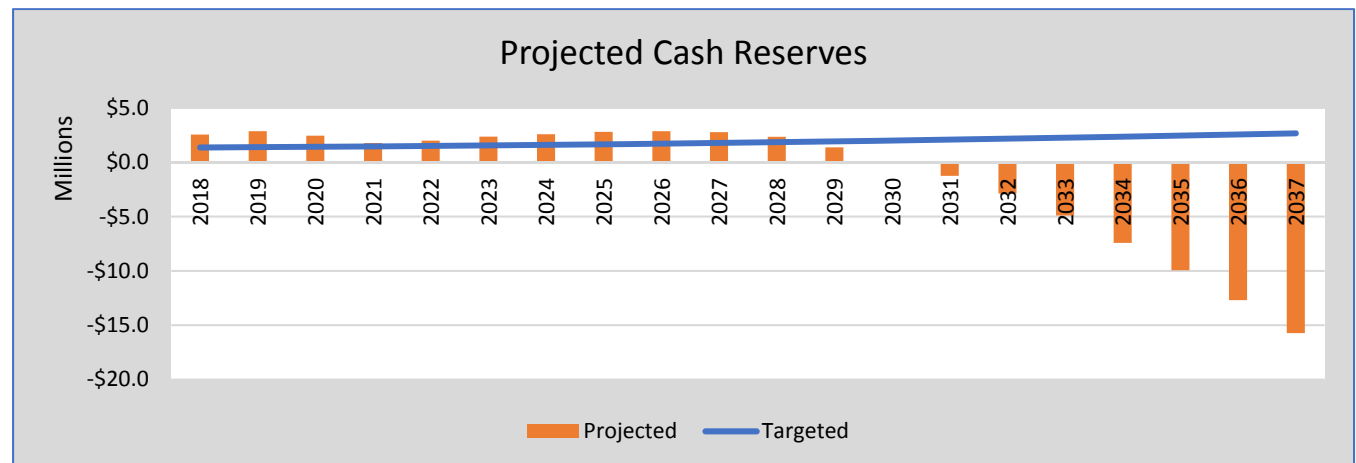
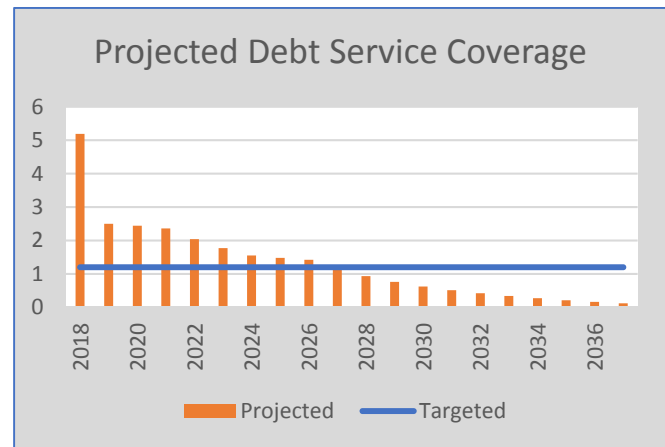
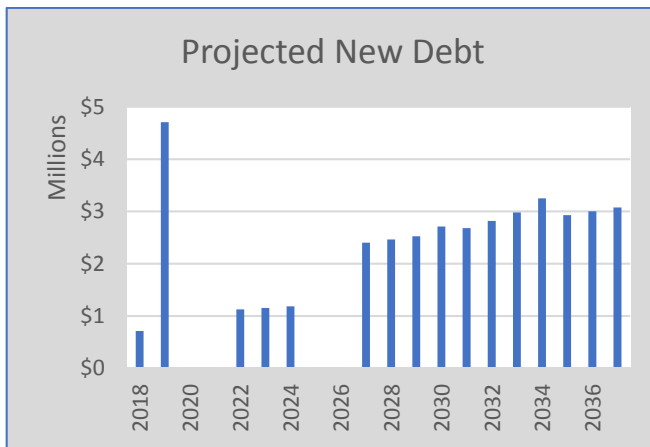
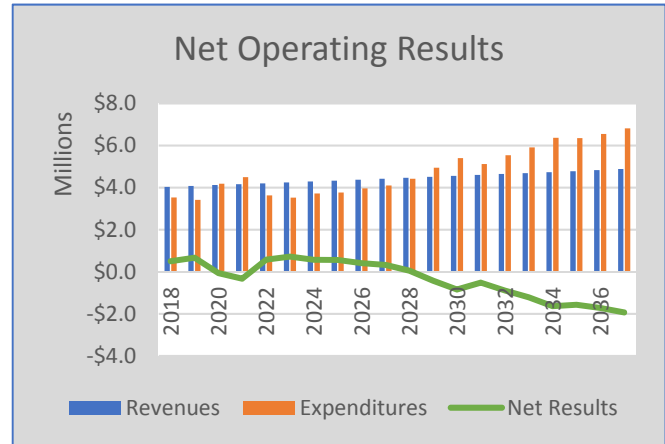
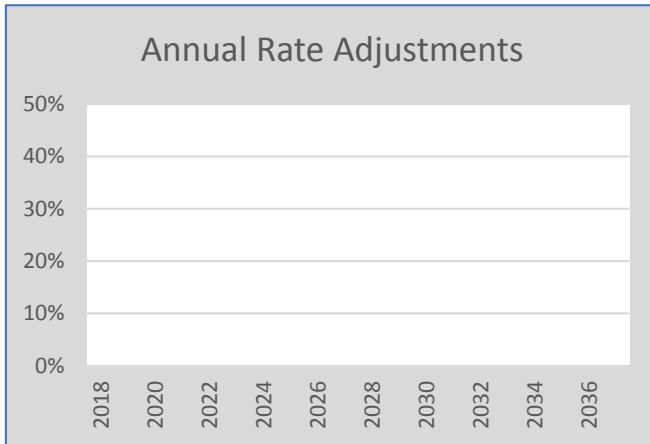
Scenario 2 Master Plan Amortized over 75 Years

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## Water System

### Scenario 2 – Master Plan Amortized over 75 Years

Rate Increase	None
Fund Approach	Current Policy - >\$500k debt funded in project year

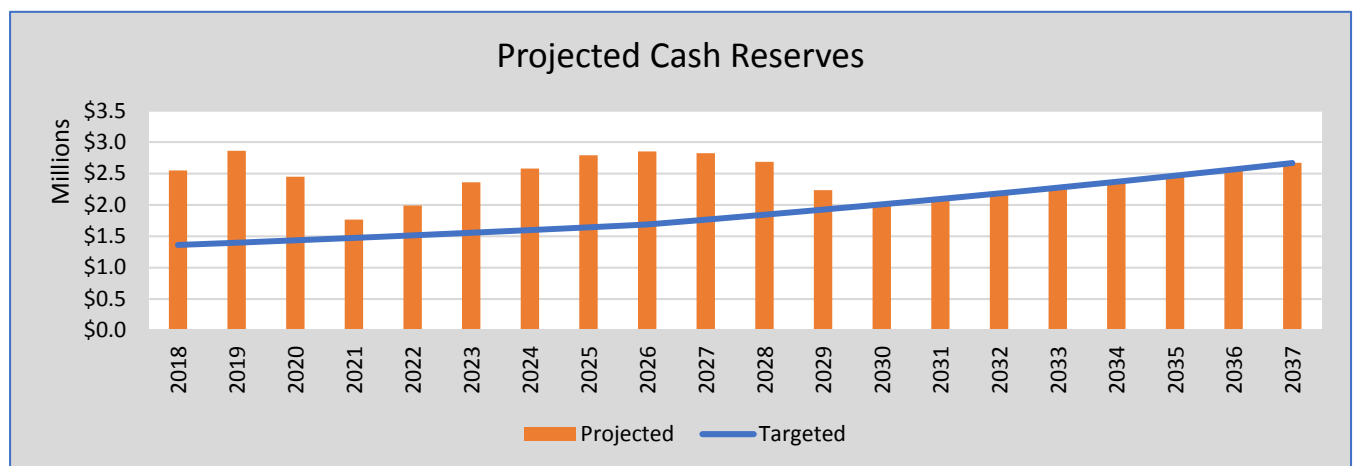
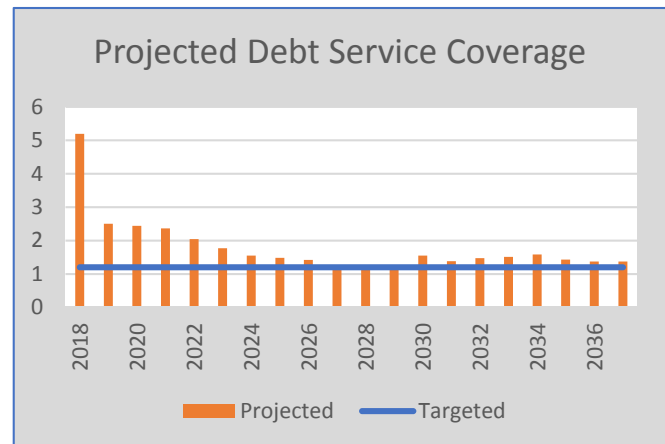
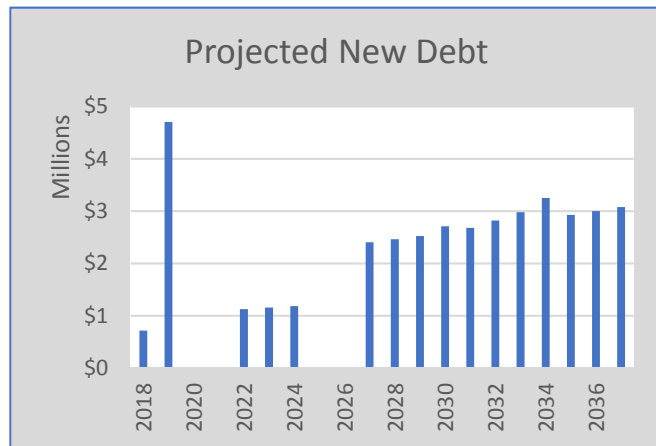
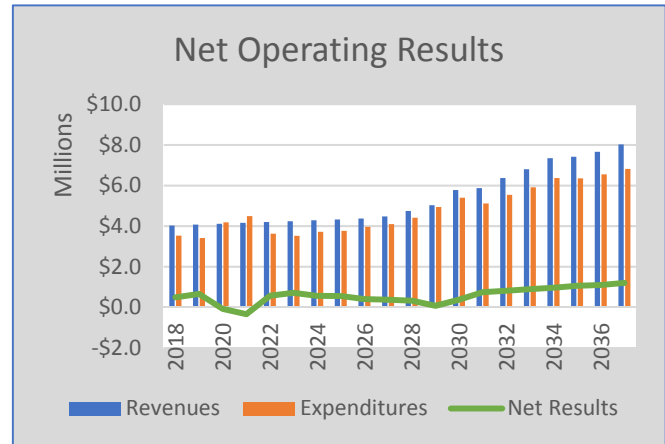
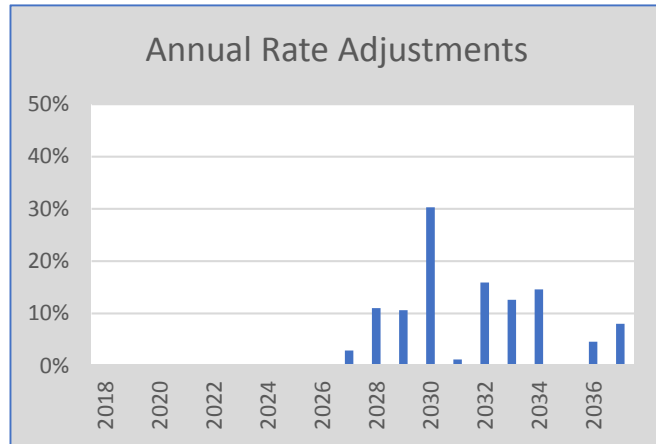


Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	-	1.20	5.19	1,362	2,548	-	1,554
2019	-	1.20	2.50	1,398	2,862	-	5,004
2020	-	1.20	2.44	1,436	2,448	-	1,085
2021	-	1.20	2.36	1,475	1,765	-	1,315
2022	-	1.20	2.04	1,515	1,990	-	1,406
2023	-	1.20	1.77	1,556	2,360	-	1,181
2024	-	1.20	1.55	1,599	2,577	-	1,251
2025	-	1.20	1.48	1,643	2,791	-	51
2026	-	1.20	1.42	1,688	2,852	-	155
2027	-	1.20	1.14	1,765	2,766	2,414	2,415
2028	-	1.20	0.93	1,844	2,344	2,475	2,553
2029	-	1.20	0.76	1,925	1,376	2,536	2,894
2030	-	1.20	0.62	2,008	(70)	2,600	3,272
2031	-	1.20	0.51	2,094	(1,255)	2,665	2,696
2032	-	1.20	0.42	2,183	(2,886)	2,732	2,981
2033	-	1.20	0.34	2,274	(4,910)	2,800	3,219
2034	-	1.20	0.27	2,368	(7,425)	2,870	3,639
2035	-	1.20	0.21	2,465	(9,945)	2,942	3,011
2036	-	1.20	0.16	2,564	(12,693)	3,015	2,985
2037	-	1.20	0.12	2,667	(15,733)	3,090	3,015
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					

## Water System

### Scenario 2 – Master Plan Amortized over 75 Years

Rate Increase	Just in Time
Fund Approach	Current Policy - >\$500k debt funded in project year



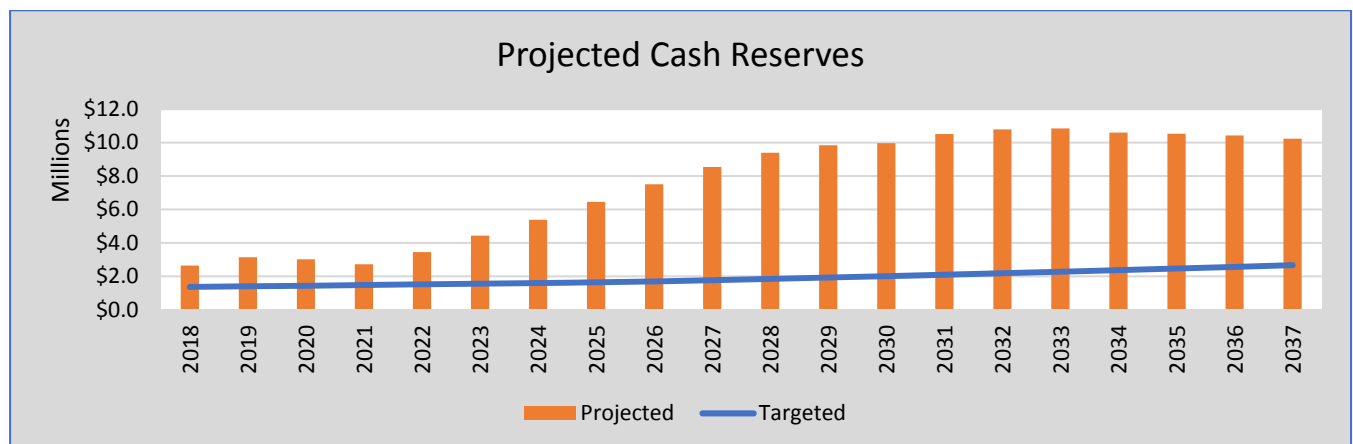
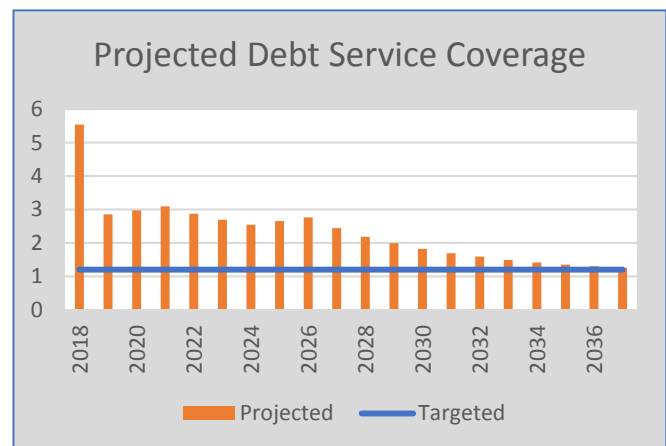
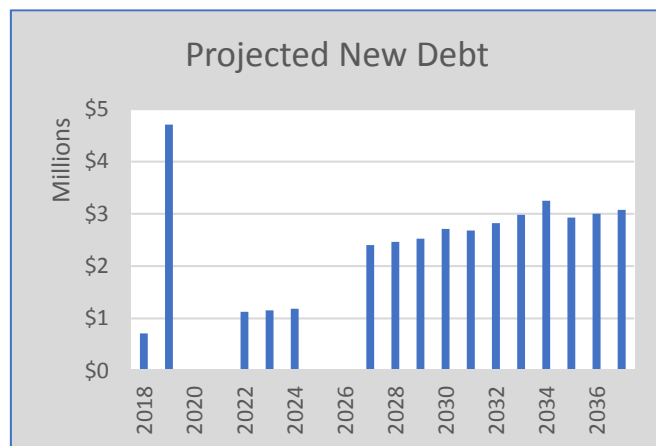
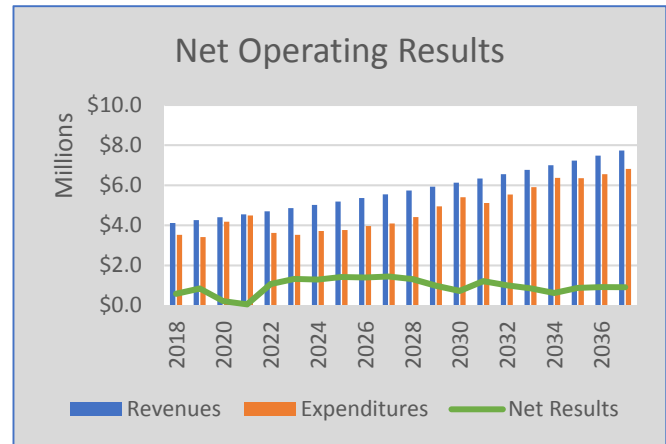
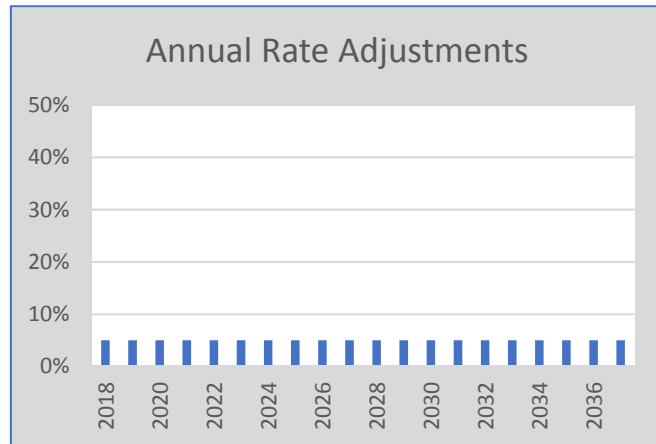
Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	0.00%	1.20	5.19	1,362	2,548	-	1,554
2019	0.00%	1.20	2.50	1,398	2,862	-	5,004
2020	0.00%	1.20	2.44	1,436	2,448	-	1,085
2021	0.00%	1.20	2.36	1,475	1,765	-	1,315
2022	0.00%	1.20	2.04	1,515	1,990	-	1,406
2023	0.00%	1.20	1.77	1,556	2,360	-	1,181
2024	0.00%	1.20	1.55	1,599	2,577	-	1,251
2025	0.00%	1.20	1.48	1,643	2,791	-	51
2026	0.00%	1.20	1.42	1,688	2,852	-	155
2027	2.90%	1.20	1.21	1,765	2,824	2,414	2,415
2028	11.00%	1.20	1.21	1,844	2,684	2,475	2,553
2029	10.60%	1.20	1.21	1,925	2,233	2,536	2,894
2030	30.30%	1.20	1.55	2,008	2,010	2,600	3,272
2031	1.20%	1.20	1.38	2,094	2,095	2,665	2,696
2032	15.90%	1.20	1.47	2,183	2,184	2,732	2,981
2033	12.60%	1.20	1.51	2,274	2,276	2,800	3,219
2034	14.60%	1.20	1.58	2,368	2,370	2,870	3,639
2035	0.00%	1.20	1.43	2,465	2,488	2,942	3,011
2036	4.60%	1.20	1.37	2,564	2,566	3,015	2,985
2037	8.00%	1.20	1.37	2,667	2,670	3,090	3,015
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					



## Water System

### Scenario 2 – Master Plan Amortized over 75 Years

Rate Increase	Phased In (level)
Fund Approach	Current Policy - >\$500k debt funded in project year



Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	5.00%	1.20	5.54	1,362	2,639	-	1,554
2019	5.00%	1.20	2.85	1,398	3,139	-	5,004
2020	5.00%	1.20	2.97	1,436	3,011	-	1,085
2021	5.00%	1.20	3.09	1,475	2,719	-	1,315
2022	5.00%	1.20	2.87	1,515	3,444	-	1,406
2023	5.00%	1.20	2.69	1,556	4,427	-	1,181
2024	5.00%	1.20	2.54	1,599	5,379	-	1,251
2025	5.00%	1.20	2.65	1,643	6,451	-	51
2026	5.00%	1.20	2.76	1,688	7,502	-	155
2027	5.00%	1.20	2.44	1,765	8,542	2,414	2,415
2028	5.00%	1.20	2.18	1,844	9,388	2,475	2,553
2029	5.00%	1.20	1.99	1,925	9,837	2,536	2,894
2030	5.00%	1.20	1.82	2,008	9,965	2,600	3,272
2031	5.00%	1.20	1.69	2,094	10,514	2,665	2,696
2032	5.00%	1.20	1.59	2,183	10,787	2,732	2,981
2033	5.00%	1.20	1.49	2,274	10,843	2,800	3,219
2034	5.00%	1.20	1.41	2,368	10,593	2,870	3,639
2035	5.00%	1.20	1.35	2,465	10,525	2,942	3,011
2036	5.00%	1.20	1.30	2,564	10,423	3,015	2,985
2037	5.00%	1.20	1.25	2,667	10,232	3,090	3,015
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					

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# Water System

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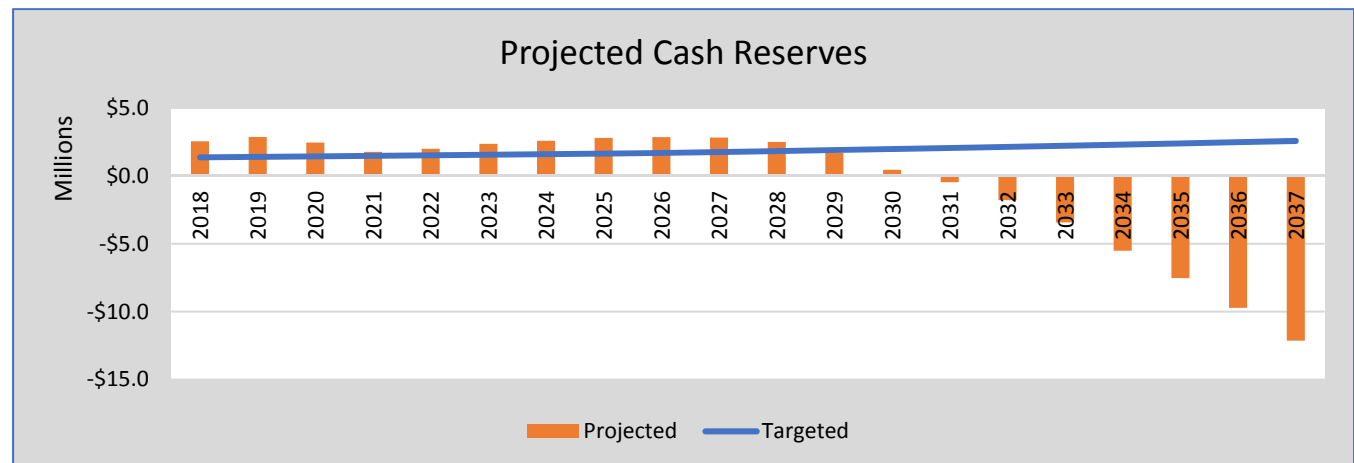
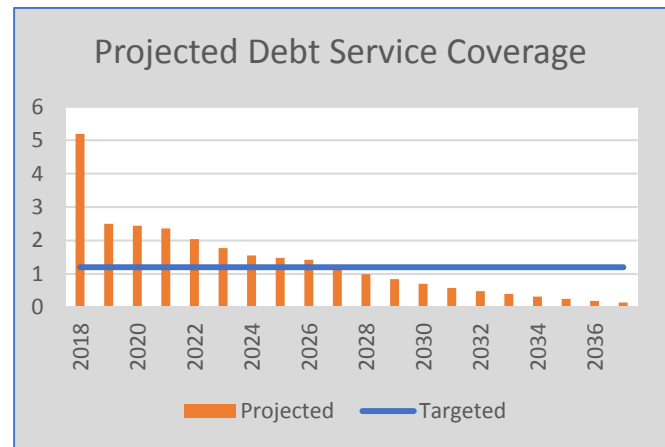
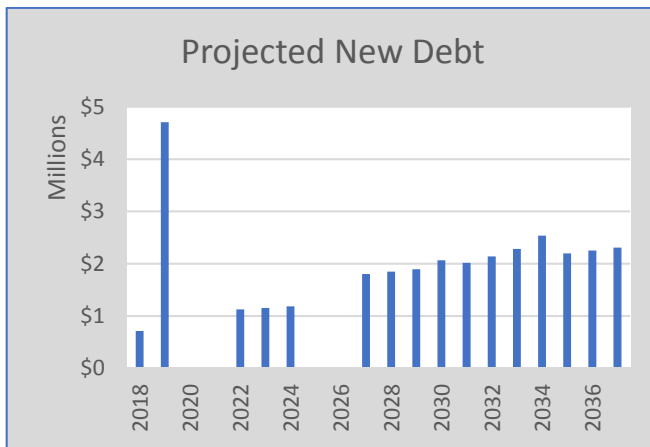
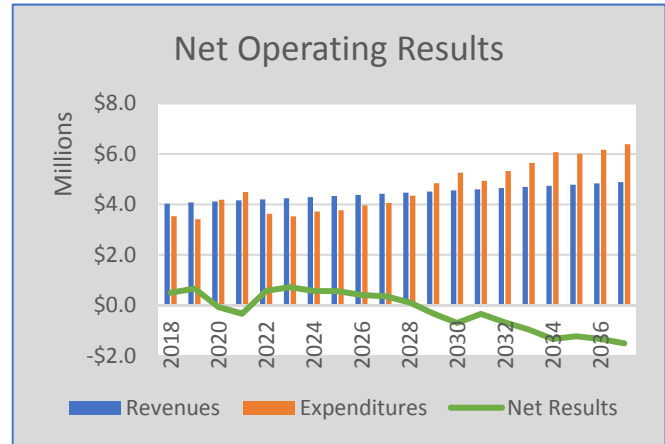
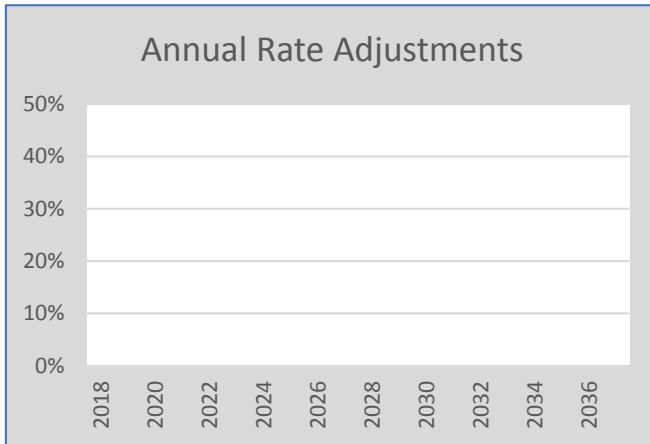
Scenario 3 Master Plan Amortized over 100 Years

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## Water System

### Scenario 3 – Master Plan Amortized over 100 Years

Rate Increase	None
Fund Approach	Current Policy - >\$500k debt funded in project year

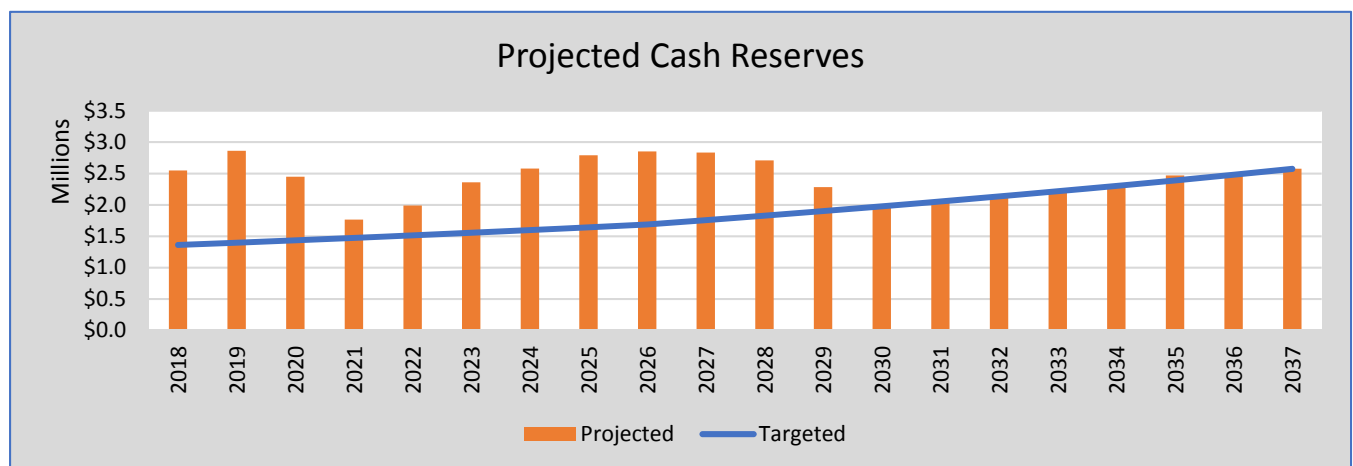
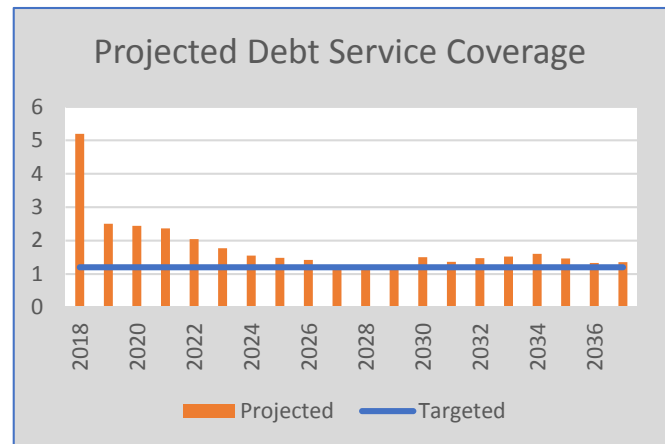
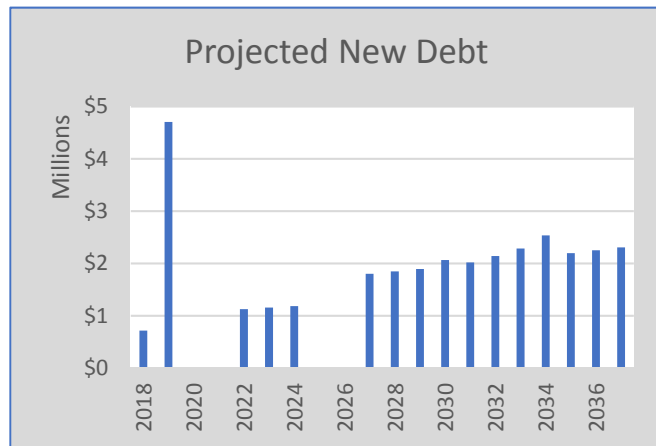
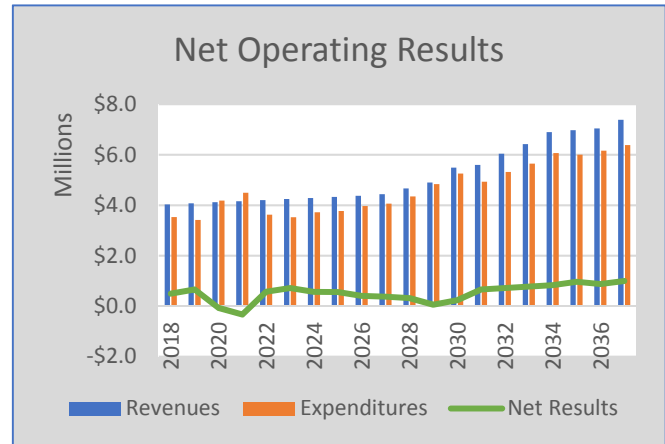
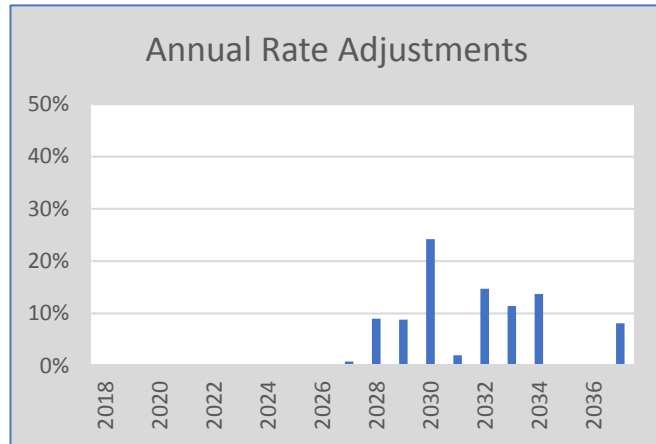


Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	-	1.20	5.19	1,362	2,548	-	1,554
2019	-	1.20	2.50	1,398	2,862	-	5,004
2020	-	1.20	2.44	1,436	2,448	-	1,085
2021	-	1.20	2.36	1,475	1,765	-	1,315
2022	-	1.20	2.04	1,515	1,990	-	1,406
2023	-	1.20	1.77	1,556	2,360	-	1,181
2024	-	1.20	1.55	1,599	2,577	-	1,251
2025	-	1.20	1.48	1,643	2,791	-	51
2026	-	1.20	1.42	1,688	2,852	-	155
2027	-	1.20	1.19	1,757	2,816	1,811	1,826
2028	-	1.20	0.99	1,828	2,495	1,856	1,950
2029	-	1.20	0.84	1,902	1,680	1,902	2,275
2030	-	1.20	0.70	1,977	443	1,950	2,638
2031	-	1.20	0.58	2,055	(479)	1,999	2,046
2032	-	1.20	0.48	2,135	(1,790)	2,049	2,314
2033	-	1.20	0.40	2,218	(3,437)	2,100	2,536
2034	-	1.20	0.32	2,303	(5,513)	2,152	2,939
2035	-	1.20	0.25	2,391	(7,538)	2,206	2,294
2036	-	1.20	0.19	2,481	(9,728)	2,261	2,250
2037	-	1.20	0.14	2,574	(12,145)	2,318	2,261
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					

## Water System

### Scenario 3 – Master Plan Amortized over 100 Years

Rate Increase	Just in Time
Fund Approach	Current Policy - >\$500k debt funded in project year



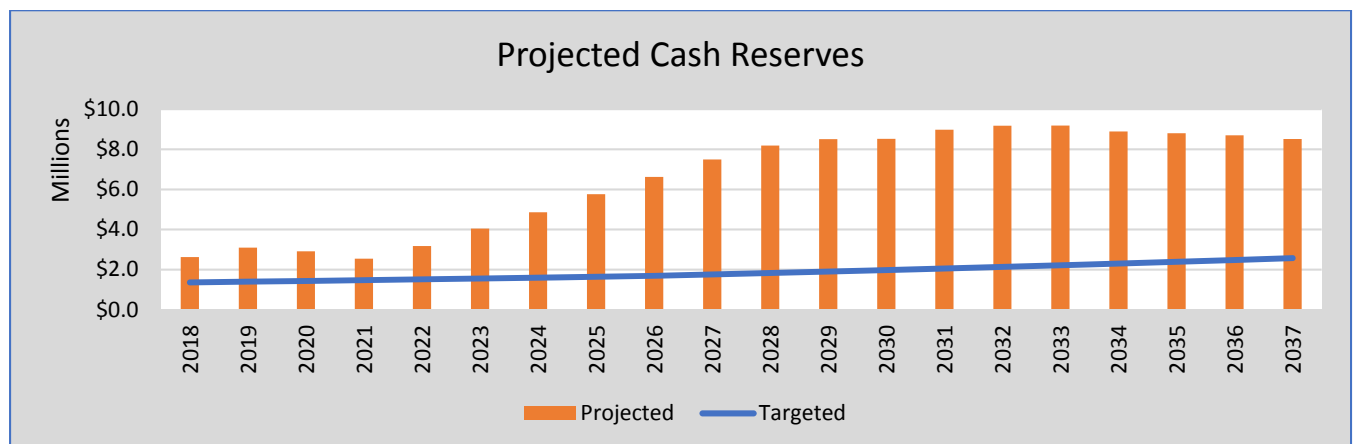
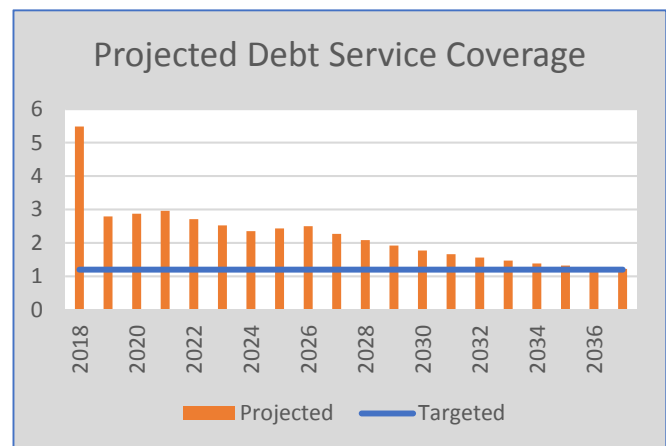
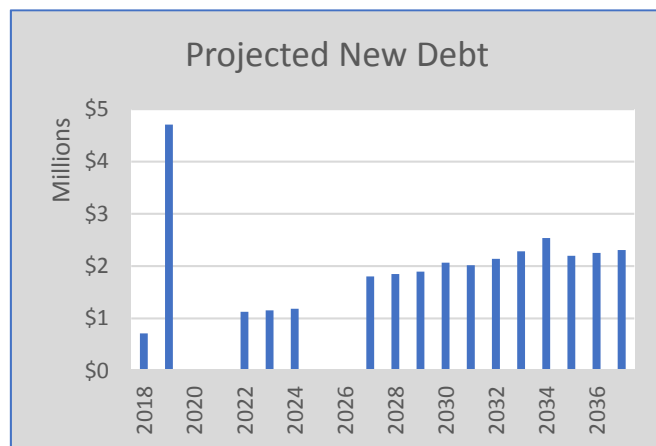
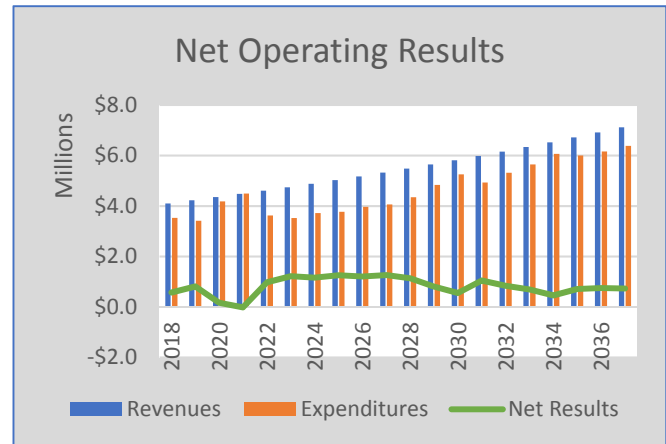
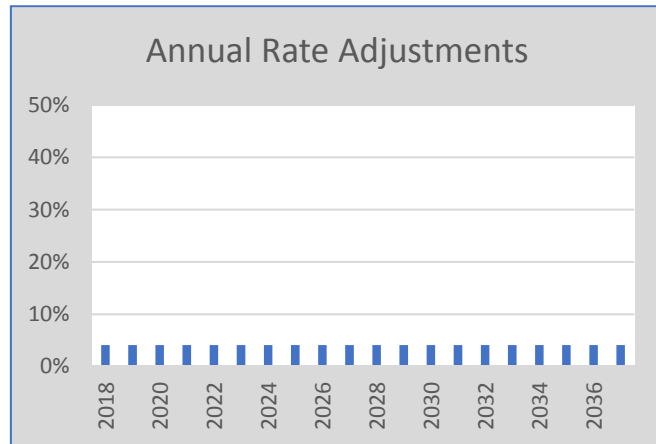
Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	0.00%	1.20	5.19	1,362	2,548	-	1,554
2019	0.00%	1.20	2.50	1,398	2,862	-	5,004
2020	0.00%	1.20	2.44	1,436	2,448	-	1,085
2021	0.00%	1.20	2.36	1,475	1,765	-	1,315
2022	0.00%	1.20	2.04	1,515	1,990	-	1,406
2023	0.00%	1.20	1.77	1,556	2,360	-	1,181
2024	0.00%	1.20	1.55	1,599	2,577	-	1,251
2025	0.00%	1.20	1.48	1,643	2,791	-	51
2026	0.00%	1.20	1.42	1,688	2,852	-	155
2027	0.80%	1.20	1.21	1,757	2,832	1,811	1,826
2028	9.00%	1.20	1.21	1,828	2,708	1,856	1,950
2029	8.80%	1.20	1.21	1,902	2,281	1,902	2,275
2030	24.20%	1.20	1.50	1,977	1,979	1,950	2,638
2031	2.00%	1.20	1.36	2,055	2,056	1,999	2,046
2032	14.70%	1.20	1.47	2,135	2,136	2,049	2,314
2033	11.40%	1.20	1.52	2,218	2,219	2,100	2,536
2034	13.70%	1.20	1.60	2,303	2,305	2,152	2,939
2035	0.00%	1.20	1.46	2,391	2,469	2,206	2,294
2036	0.00%	1.20	1.33	2,481	2,491	2,261	2,250
2037	8.10%	1.20	1.35	2,574	2,576	2,318	2,261
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					



## Water System

### Scenario 3 – Master Plan Amortized over 100 Years

Rate Increase	Phased In (level)
Fund Approach	Current Policy - >\$500k debt funded in project year



Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	4.10%	1.20	5.48	1,362	2,623	-	1,554
2019	4.10%	1.20	2.79	1,398	3,089	-	5,004
2020	4.10%	1.20	2.87	1,436	2,908	-	1,085
2021	4.10%	1.20	2.96	1,475	2,544	-	1,315
2022	4.10%	1.20	2.71	1,515	3,175	-	1,406
2023	4.10%	1.20	2.52	1,556	4,042	-	1,181
2024	4.10%	1.20	2.35	1,599	4,853	-	1,251
2025	4.10%	1.20	2.43	1,643	5,760	-	51
2026	4.10%	1.20	2.50	1,688	6,618	-	155
2027	4.10%	1.20	2.27	1,757	7,487	1,811	1,826
2028	4.10%	1.20	2.08	1,828	8,182	1,856	1,950
2029	4.10%	1.20	1.92	1,902	8,501	1,902	2,275
2030	4.10%	1.20	1.77	1,977	8,518	1,950	2,638
2031	4.10%	1.20	1.66	2,055	8,976	1,999	2,046
2032	4.10%	1.20	1.56	2,135	9,176	2,049	2,314
2033	4.10%	1.20	1.47	2,218	9,178	2,100	2,536
2034	4.10%	1.20	1.38	2,303	8,890	2,152	2,939
2035	4.10%	1.20	1.32	2,391	8,801	2,206	2,294
2036	4.10%	1.20	1.27	2,481	8,694	2,261	2,250
2037	4.10%	1.20	1.22	2,574	8,514	2,318	2,261
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					

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# Sewer System

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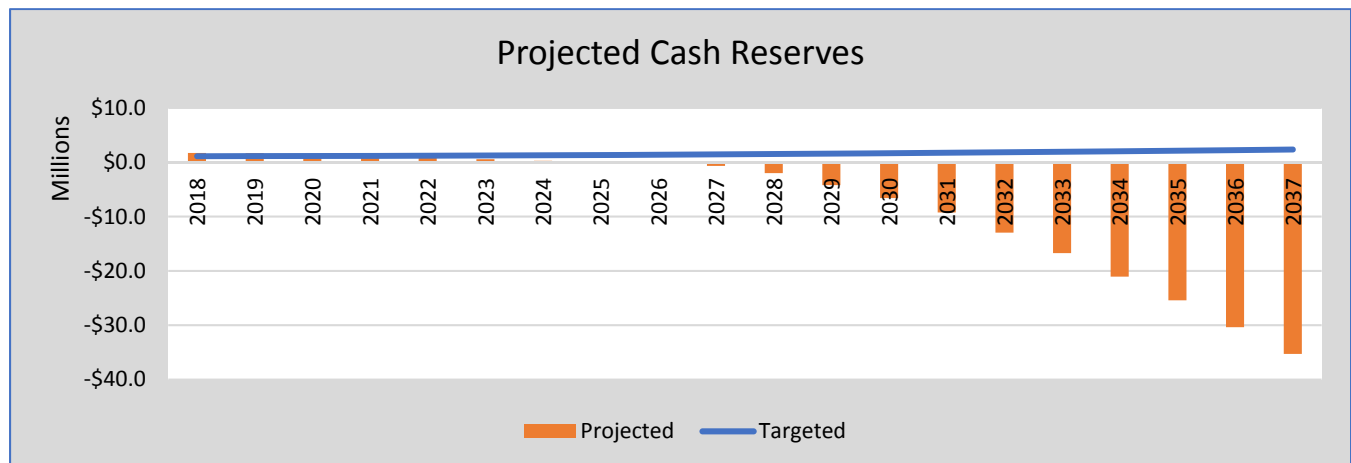
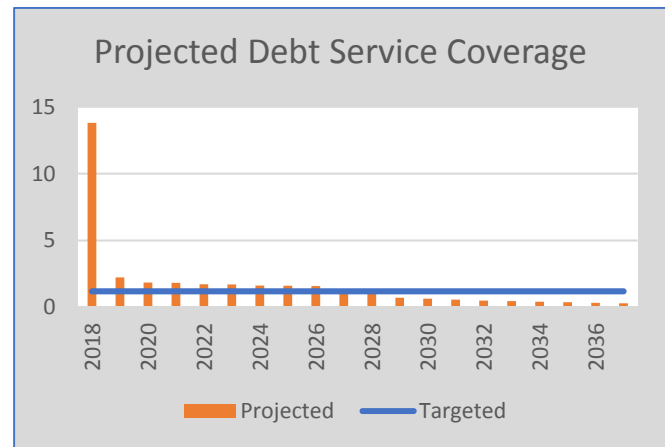
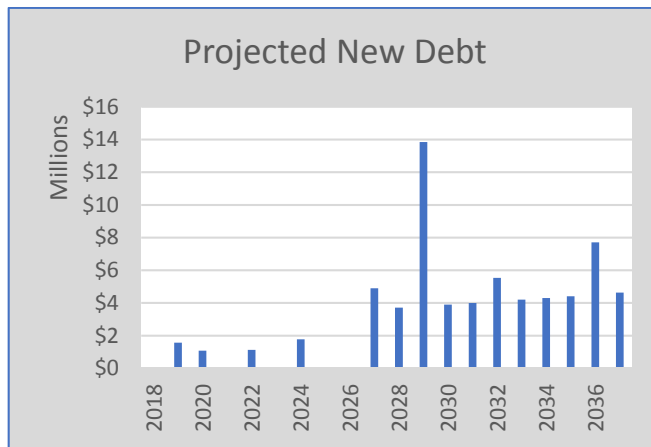
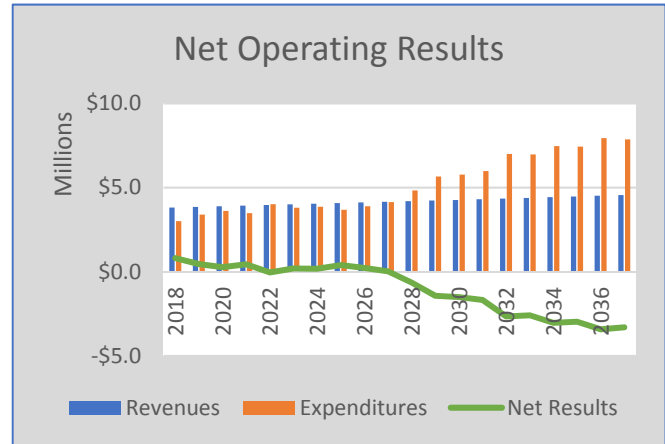
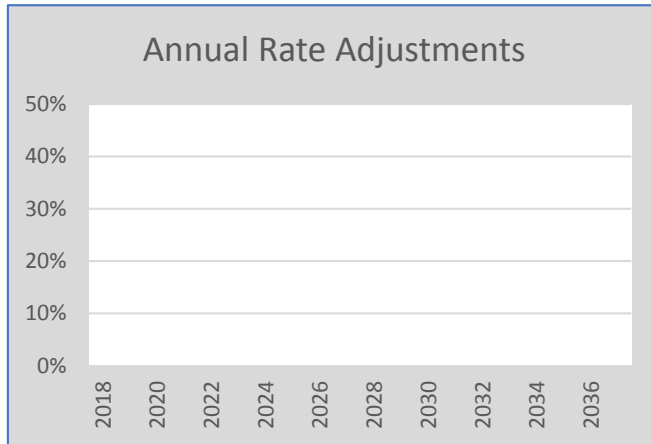
Scenario 1 Master Plan Amortized over 50 Years

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## Sewer System

### Scenario 1 – Master Plan Amortized over 50 Years

Rate Increase	None
Fund Approach	Current Policy - >\$500k debt funded in project year

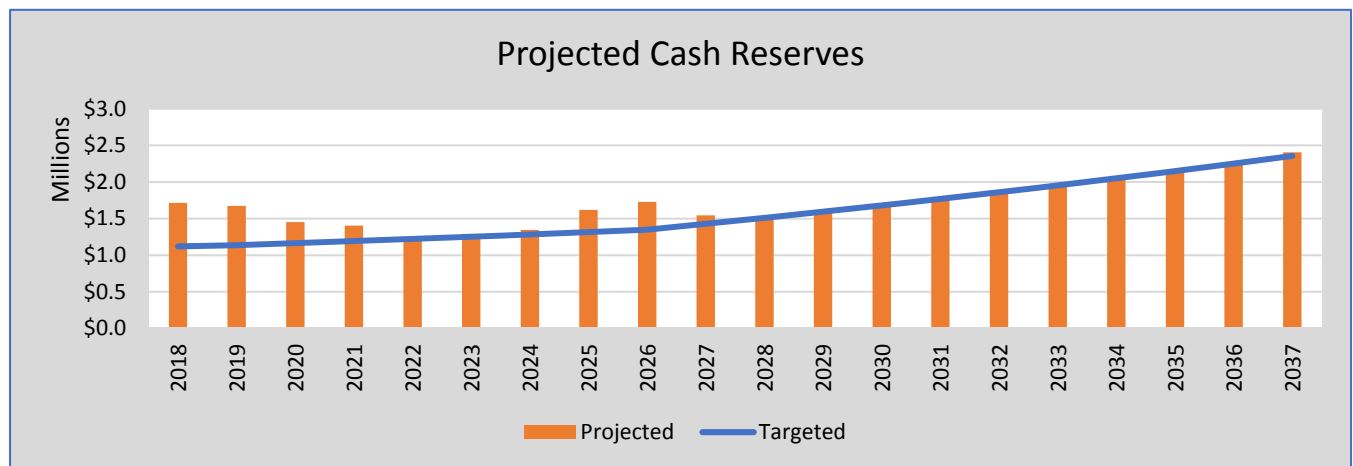
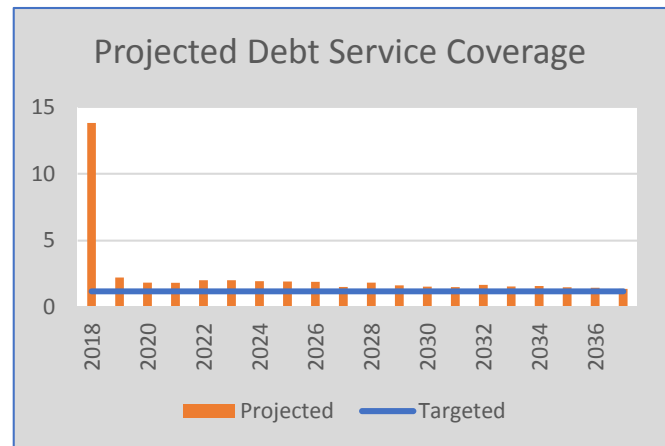
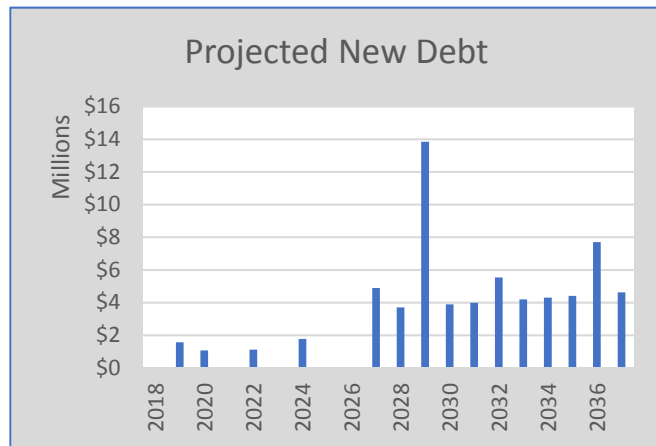
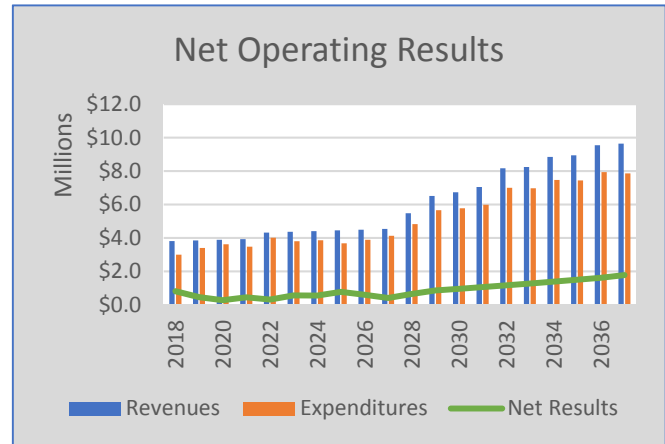
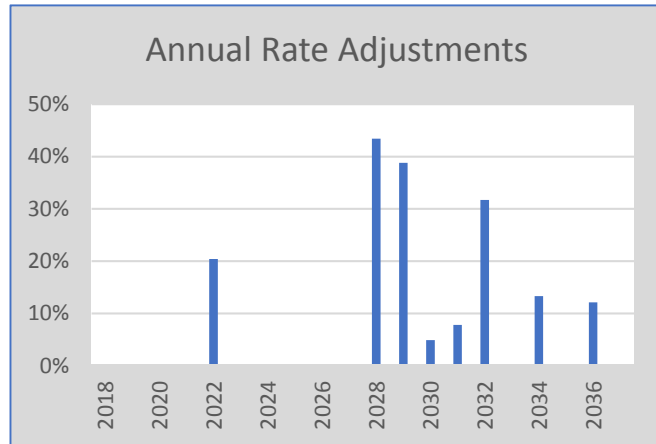


Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	-	1.20	13.80	1,121	1,713	-	1,074
2019	-	1.20	2.23	1,138	1,672	-	2,216
2020	-	1.20	1.85	1,165	1,451	-	1,711
2021	-	1.20	1.83	1,193	1,403	-	470
2022	-	1.20	1.72	1,223	863	-	1,983
2023	-	1.20	1.71	1,253	564	-	623
2024	-	1.20	1.63	1,284	249	-	2,316
2025	-	1.20	1.61	1,316	149	-	333
2026	-	1.20	1.59	1,350	(122)	-	476
2027	-	1.20	1.26	1,429	(687)	3,635	5,161
2028	-	1.20	1.07	1,510	(2,006)	3,726	4,414
2029	-	1.20	0.71	1,594	(4,208)	3,819	14,296
2030	-	1.20	0.64	1,680	(6,588)	3,915	4,363
2031	-	1.20	0.57	1,769	(9,242)	4,013	4,360
2032	-	1.20	0.50	1,860	(12,974)	4,113	6,485
2033	-	1.20	0.46	1,954	(16,743)	4,216	4,818
2034	-	1.20	0.41	2,050	(21,069)	4,321	5,075
2035	-	1.20	0.38	2,150	(25,437)	4,429	4,828
2036	-	1.20	0.33	2,252	(30,372)	4,540	8,014
2037	-	1.20	0.30	2,356	(35,307)	4,654	4,567
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					

## Sewer System

### Scenario 1 – Master Plan Amortized over 50 Years

Rate Increase	Just in Time
Fund Approach	Current Policy - >\$500k debt funded in project year



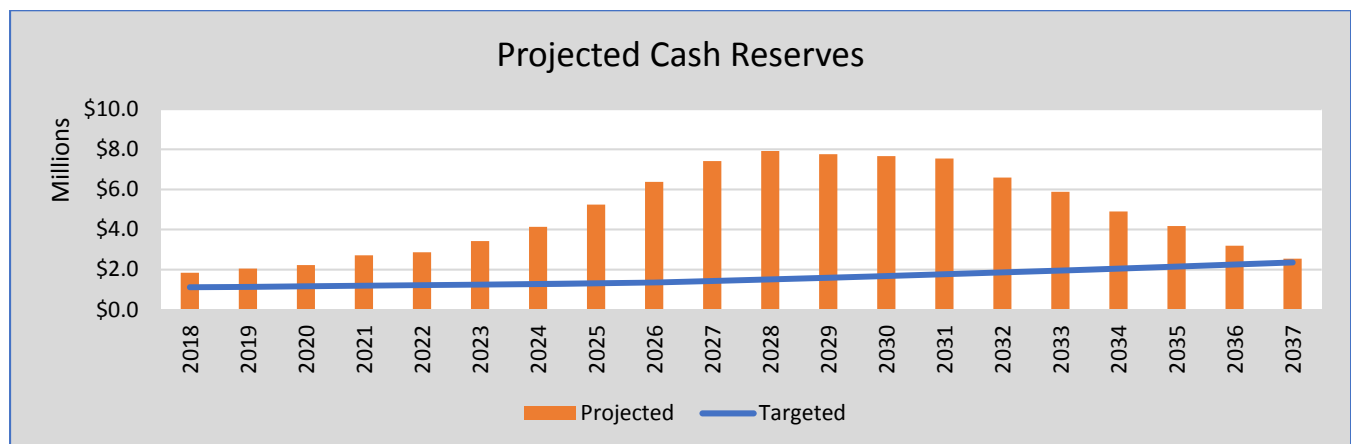
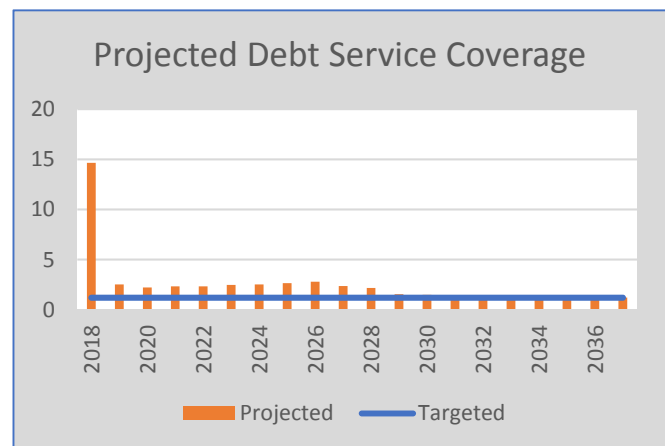
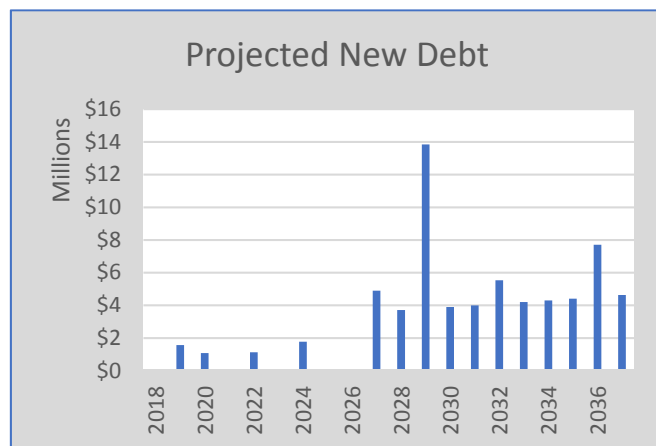
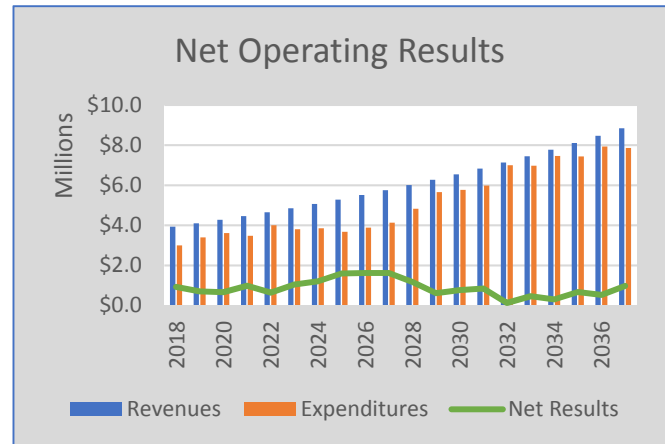
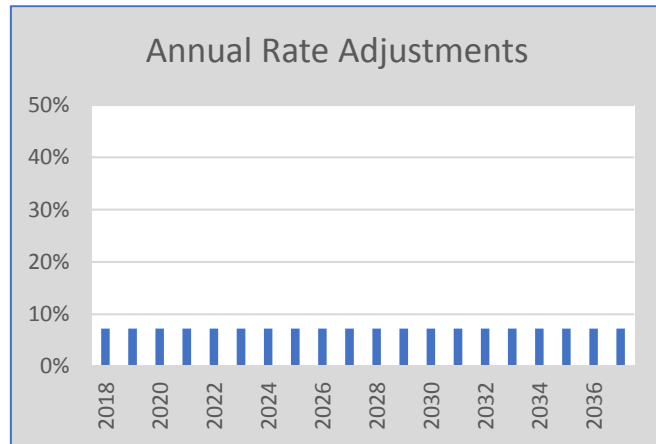
Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	0.00%	1.20	13.80	1,121	1,713	-	1,074
2019	0.00%	1.20	2.23	1,138	1,672	-	2,216
2020	0.00%	1.20	1.85	1,165	1,451	-	1,711
2021	0.00%	1.20	1.83	1,193	1,403	-	470
2022	20.40%	1.20	2.03	1,223	1,224	-	1,983
2023	0.00%	1.20	2.03	1,253	1,290	-	623
2024	0.00%	1.20	1.95	1,284	1,344	-	2,316
2025	0.00%	1.20	1.93	1,316	1,619	-	333
2026	0.00%	1.20	1.91	1,350	1,726	-	476
2027	0.00%	1.20	1.52	1,429	1,544	3,635	5,161
2028	43.40%	1.20	1.85	1,510	1,511	3,726	4,414
2029	38.80%	1.20	1.64	1,594	1,596	3,819	14,296
2030	4.90%	1.20	1.55	1,680	1,682	3,915	4,363
2031	7.80%	1.20	1.51	1,769	1,769	4,013	4,360
2032	31.70%	1.20	1.68	1,860	1,861	4,113	6,485
2033	0.00%	1.20	1.56	1,954	1,955	4,216	4,818
2034	13.30%	1.20	1.60	2,050	2,054	4,321	5,075
2035	0.00%	1.20	1.50	2,150	2,156	4,429	4,828
2036	12.10%	1.20	1.47	2,252	2,254	4,540	8,014
2037	0.00%	1.20	1.38	2,356	2,403	4,654	4,567
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					



## Sewer System

### Scenario 1 – Master Plan Amortized over 50 Years

Rate Increase	Phased In (level)
Fund Approach	Current Policy - >\$500k debt funded in project year



Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	7.25%	1.20	14.64	1,121	1,836	-	1,074
2019	7.25%	1.20	2.51	1,138	2,049	-	2,216
2020	7.25%	1.20	2.21	1,165	2,219	-	1,711
2021	7.25%	1.20	2.33	1,193	2,709	-	470
2022	7.25%	1.20	2.32	1,223	2,861	-	1,983
2023	7.25%	1.20	2.47	1,253	3,417	-	623
2024	7.25%	1.20	2.51	1,284	4,130	-	2,316
2025	7.25%	1.20	2.65	1,316	5,240	-	333
2026	7.25%	1.20	2.79	1,350	6,371	-	476
2027	7.25%	1.20	2.36	1,429	7,411	3,635	5,161
2028	7.25%	1.20	2.17	1,510	7,911	3,726	4,414
2029	7.25%	1.20	1.54	1,594	7,754	3,819	14,296
2030	7.25%	1.20	1.48	1,680	7,657	3,915	4,363
2031	7.25%	1.20	1.44	1,769	7,534	4,013	4,360
2032	7.25%	1.20	1.36	1,860	6,591	4,113	6,485
2033	7.25%	1.20	1.33	1,954	5,880	4,216	4,818
2034	7.25%	1.20	1.31	2,050	4,897	4,321	5,075
2035	7.25%	1.20	1.29	2,150	4,171	4,429	4,828
2036	7.25%	1.20	1.22	2,252	3,192	4,540	8,014
2037	7.25%	1.20	1.21	2,356	2,544	4,654	4,567
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					

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# Sewer System

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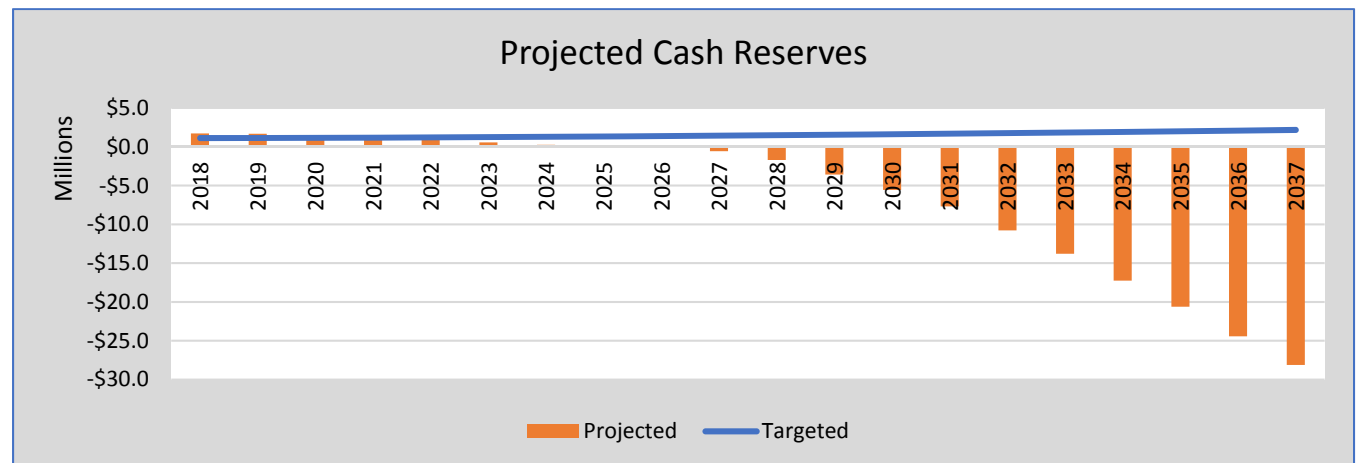
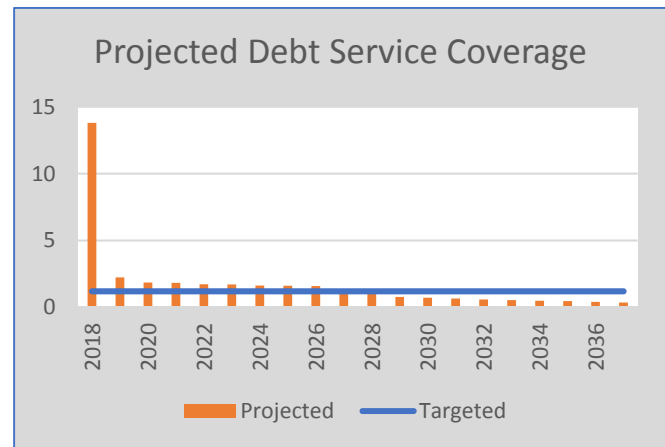
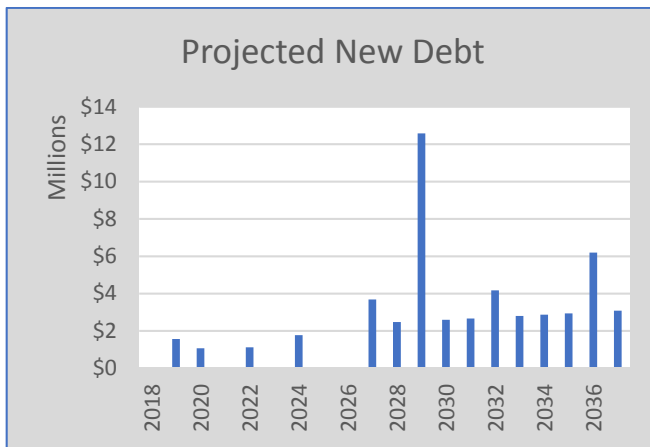
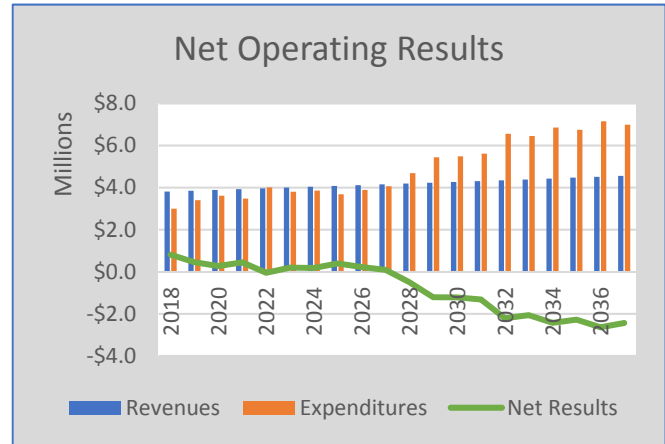
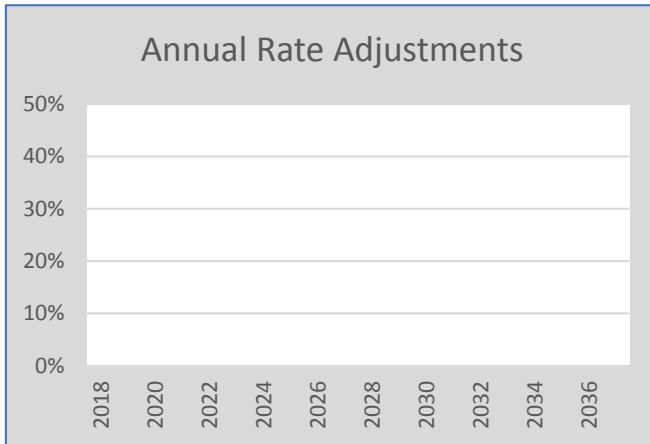
Scenario 2 Master Plan Amortized over 75 Years

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## Sewer System

### Scenario 2 – Master Plan Amortized over 75 Years

Rate Increase	None
Fund Approach	Current Policy - >\$500k debt funded in project year

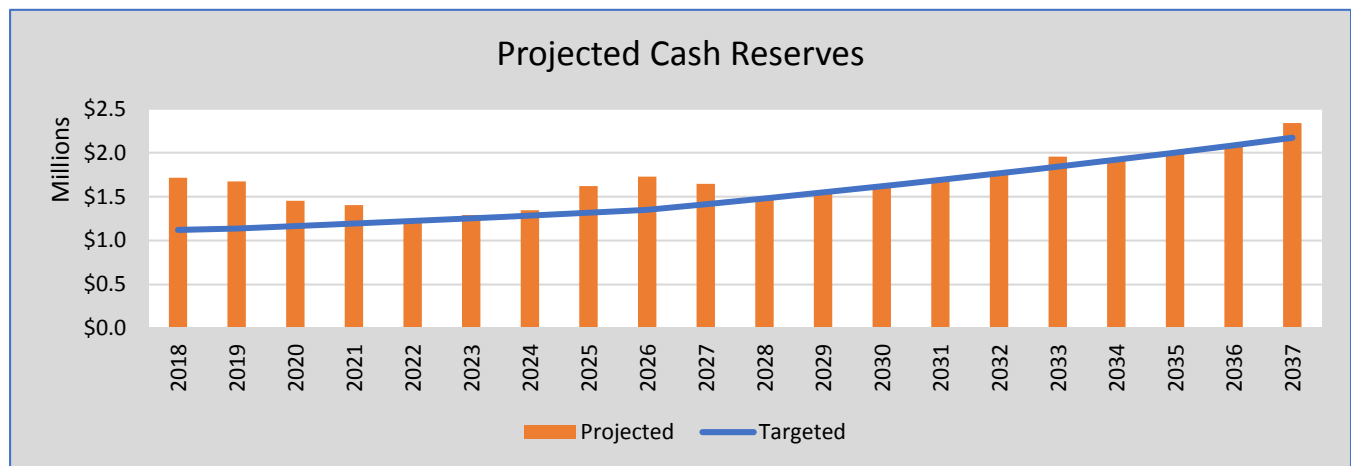
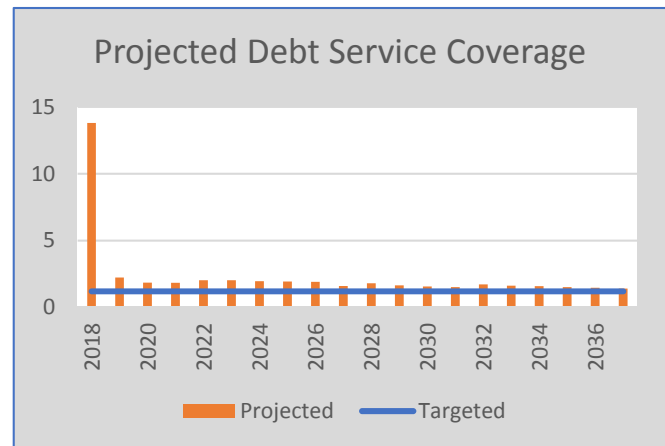
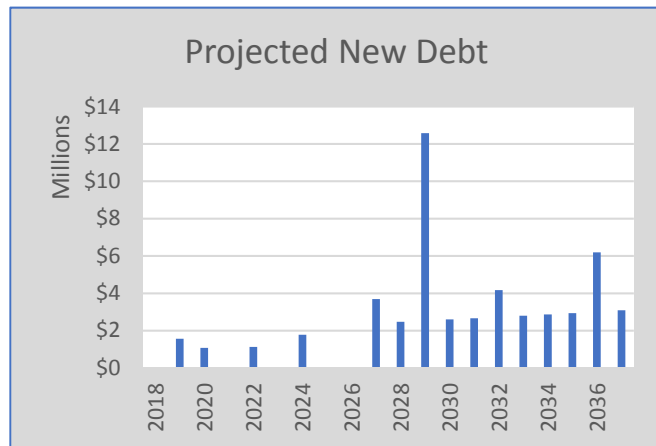
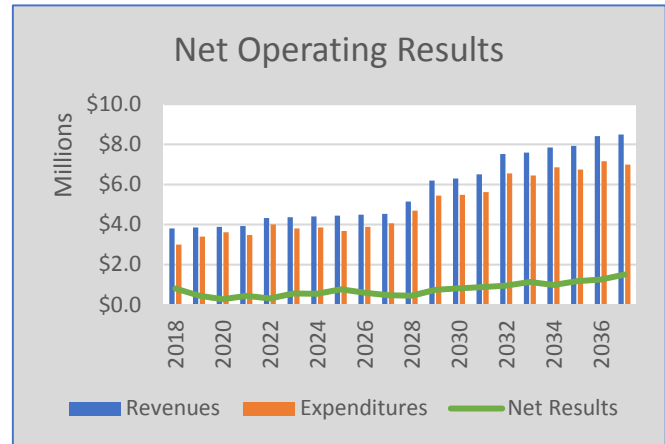
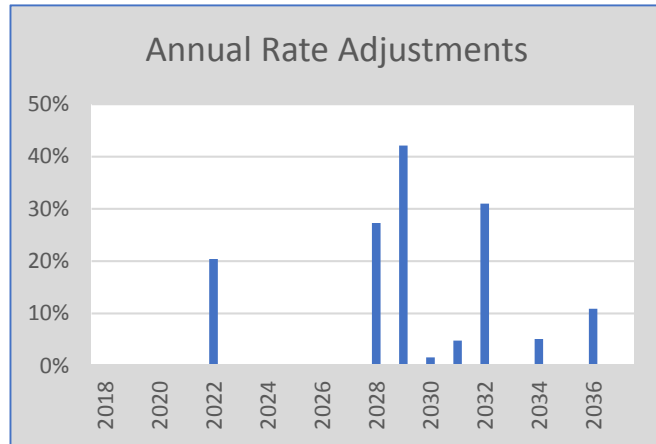


Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	-	1.20	13.80	1,121	1,713	-	1,074
2019	-	1.20	2.23	1,138	1,672	-	2,216
2020	-	1.20	1.85	1,165	1,451	-	1,711
2021	-	1.20	1.83	1,193	1,403	-	470
2022	-	1.20	1.72	1,223	863	-	1,983
2023	-	1.20	1.71	1,253	564	-	623
2024	-	1.20	1.63	1,284	249	-	2,316
2025	-	1.20	1.61	1,316	149	-	333
2026	-	1.20	1.59	1,350	(122)	-	476
2027	-	1.20	1.32	1,414	(587)	2,424	3,979
2028	-	1.20	1.17	1,480	(1,703)	2,484	3,202
2029	-	1.20	0.78	1,548	(3,598)	2,546	13,054
2030	-	1.20	0.71	1,618	(5,562)	2,610	3,090
2031	-	1.20	0.65	1,690	(7,691)	2,675	3,055
2032	-	1.20	0.58	1,765	(10,784)	2,742	5,147
2033	-	1.20	0.54	1,841	(13,799)	2,811	3,447
2034	-	1.20	0.49	1,920	(17,251)	2,881	3,669
2035	-	1.20	0.46	2,001	(20,624)	2,953	3,388
2036	-	1.20	0.40	2,084	(24,438)	3,027	6,538
2037	-	1.20	0.36	2,170	(28,125)	3,102	3,054
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					

## Sewer System

### Scenario 2 – Master Plan Amortized over 75 Years

Rate Increase	Just in Time
Fund Approach	Current Policy - >\$500k debt funded in project year



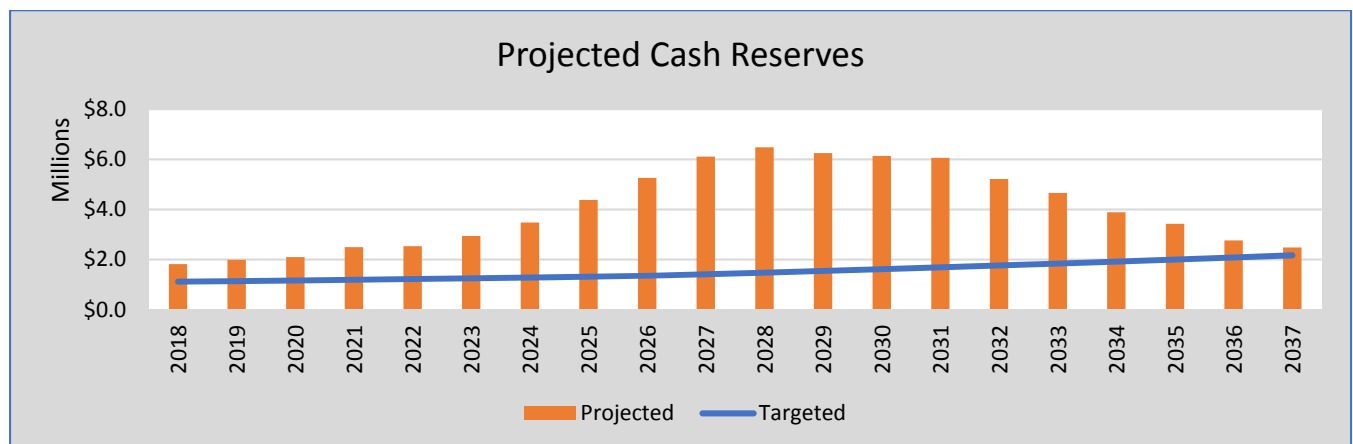
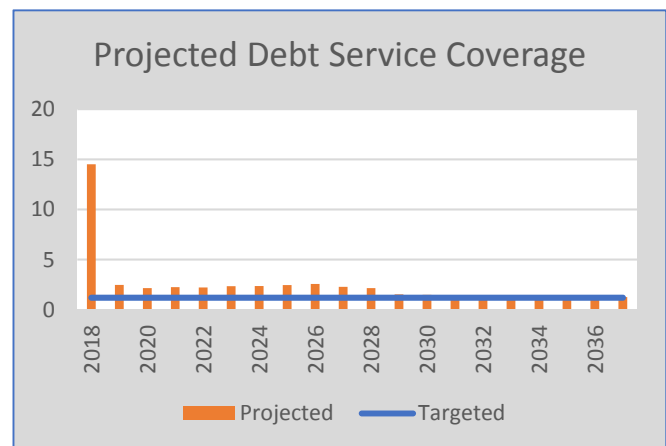
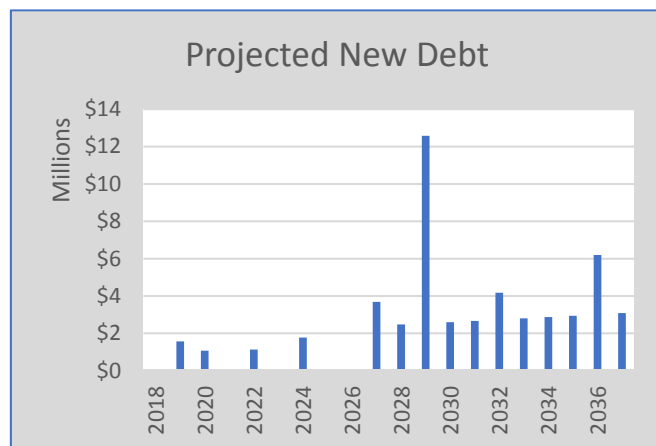
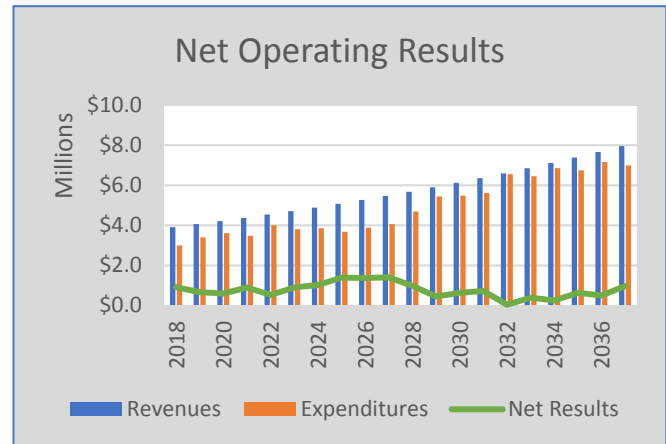
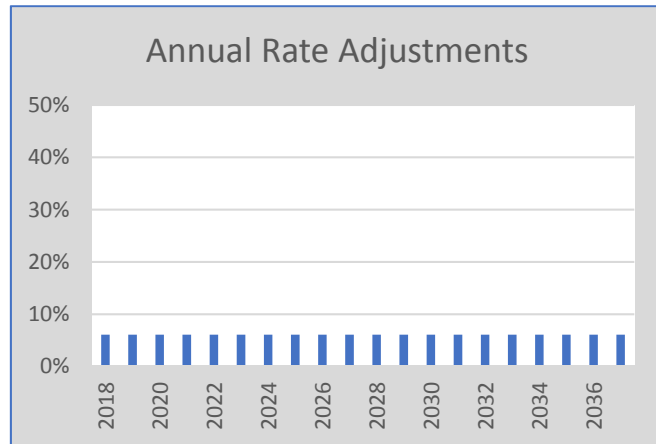
Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	0.00%	1.20	13.80	1,121	1,713	-	1,074
2019	0.00%	1.20	2.23	1,138	1,672	-	2,216
2020	0.00%	1.20	1.85	1,165	1,451	-	1,711
2021	0.00%	1.20	1.83	1,193	1,403	-	470
2022	20.40%	1.20	2.03	1,223	1,224	-	1,983
2023	0.00%	1.20	2.03	1,253	1,290	-	623
2024	0.00%	1.20	1.95	1,284	1,344	-	2,316
2025	0.00%	1.20	1.93	1,316	1,619	-	333
2026	0.00%	1.20	1.91	1,350	1,726	-	476
2027	0.00%	1.20	1.60	1,414	1,645	2,424	3,979
2028	27.30%	1.20	1.80	1,480	1,481	2,484	3,202
2029	42.10%	1.20	1.65	1,548	1,550	2,546	13,054
2030	1.60%	1.20	1.56	1,618	1,620	2,610	3,090
2031	4.80%	1.20	1.51	1,690	1,691	2,675	3,055
2032	31.00%	1.20	1.72	1,765	1,768	2,742	5,147
2033	0.00%	1.20	1.62	1,841	1,955	2,811	3,447
2034	5.10%	1.20	1.59	1,920	1,921	2,881	3,669
2035	0.00%	1.20	1.51	2,001	2,002	2,953	3,388
2036	10.90%	1.20	1.47	2,084	2,085	3,027	6,538
2037	0.00%	1.20	1.40	2,170	2,336	3,102	3,054
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					



## Sewer System

### Scenario 2 – Master Plan Amortized over 75 Years

Rate Increase	Phased In (level)
Fund Approach	Current Policy - >\$500k debt funded in project year



Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	6.10%	1.20	14.51	1,121	1,817	-	1,074
2019	6.10%	1.20	2.47	1,138	1,988	-	2,216
2020	6.10%	1.20	2.15	1,165	2,095	-	1,711
2021	6.10%	1.20	2.25	1,193	2,495	-	470
2022	6.10%	1.20	2.22	1,223	2,531	-	1,983
2023	6.10%	1.20	2.34	1,253	2,942	-	623
2024	6.10%	1.20	2.36	1,284	3,476	-	2,316
2025	6.10%	1.20	2.46	1,316	4,374	-	333
2026	6.10%	1.20	2.57	1,350	5,255	-	476
2027	6.10%	1.20	2.27	1,414	6,105	2,424	3,979
2028	6.10%	1.20	2.15	1,480	6,475	2,484	3,202
2029	6.10%	1.20	1.52	1,548	6,246	2,546	13,054
2030	6.10%	1.20	1.48	1,618	6,135	2,610	3,090
2031	6.10%	1.20	1.45	1,690	6,055	2,675	3,055
2032	6.10%	1.20	1.39	1,765	5,213	2,742	5,147
2033	6.10%	1.20	1.37	1,841	4,659	2,811	3,447
2034	6.10%	1.20	1.35	1,920	3,887	2,881	3,669
2035	6.10%	1.20	1.34	2,001	3,425	2,953	3,388
2036	6.10%	1.20	1.26	2,084	2,761	3,027	6,538
2037	6.10%	1.20	1.26	2,170	2,478	3,102	3,054
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					

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# Sewer System

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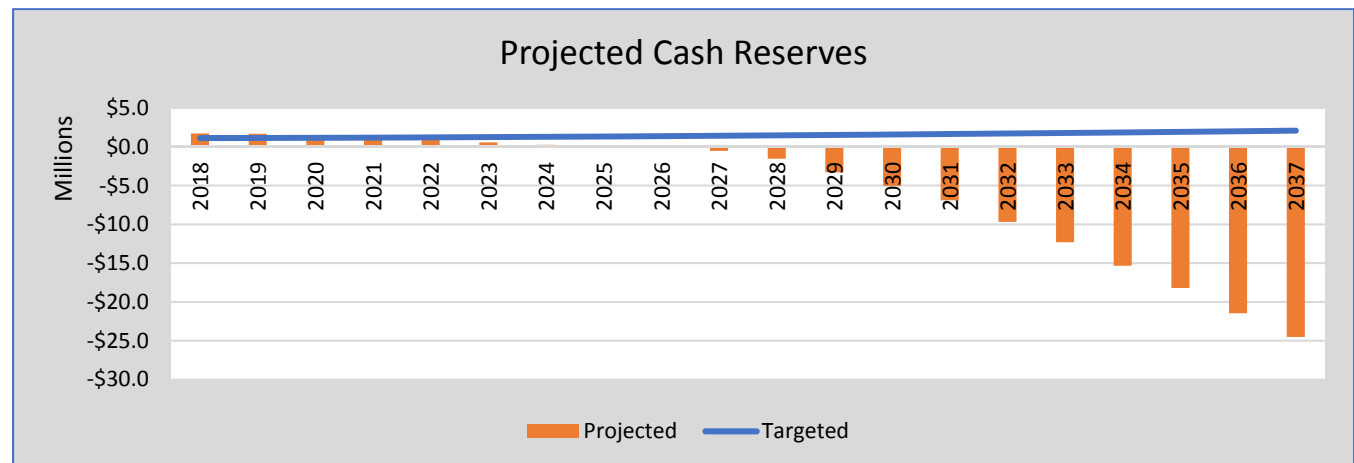
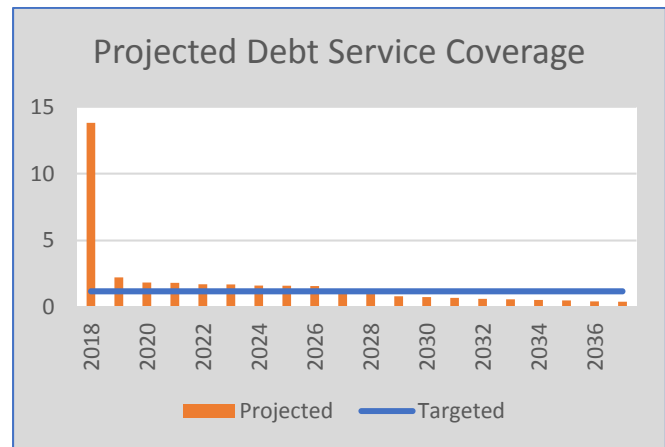
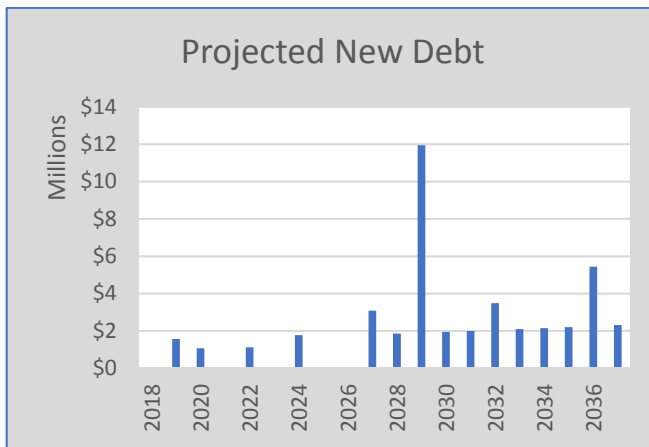
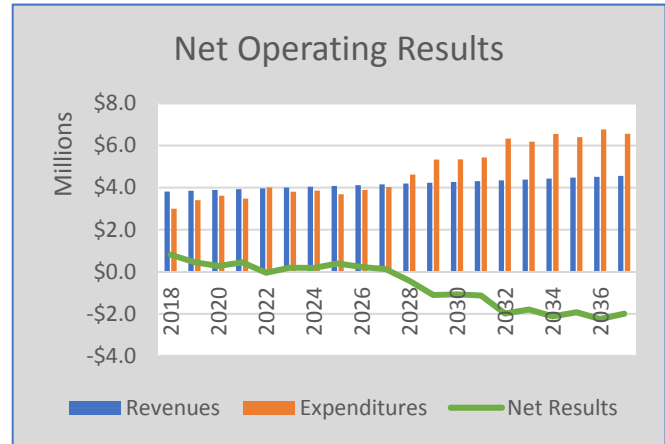
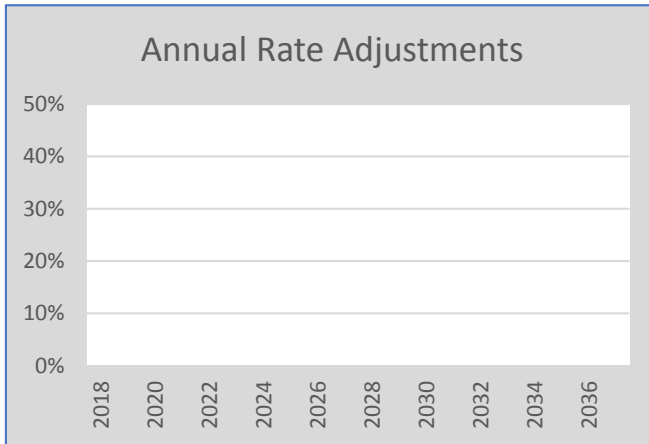
Scenario 3 Master Plan Amortized over 100 Years

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## Sewer System

### Scenario 3 – Master Plan Amortized over 100 Years

Rate Increase	None
Fund Approach	Current Policy - >\$500k debt funded in project year

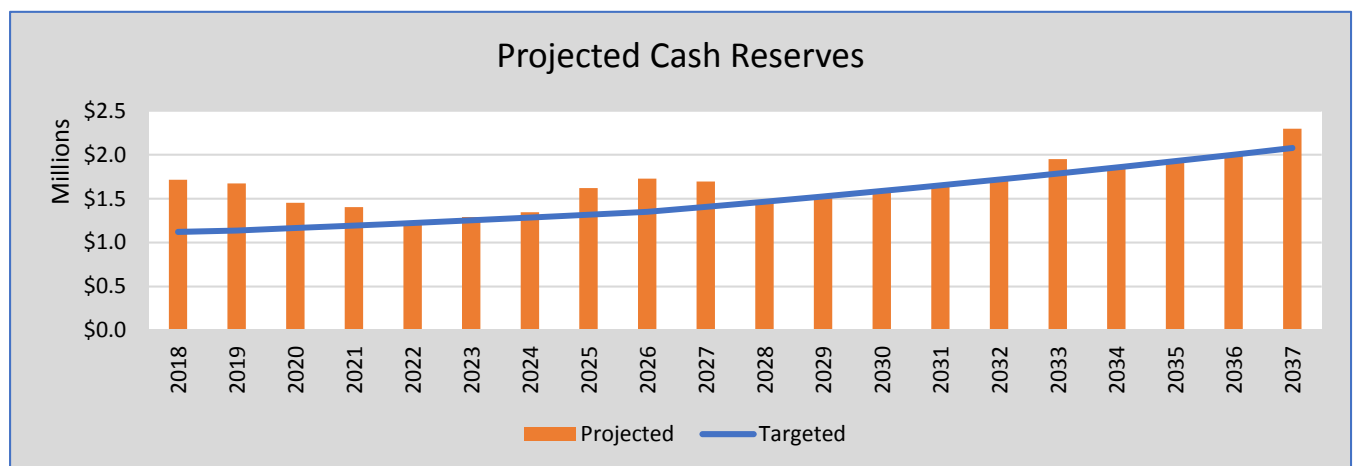
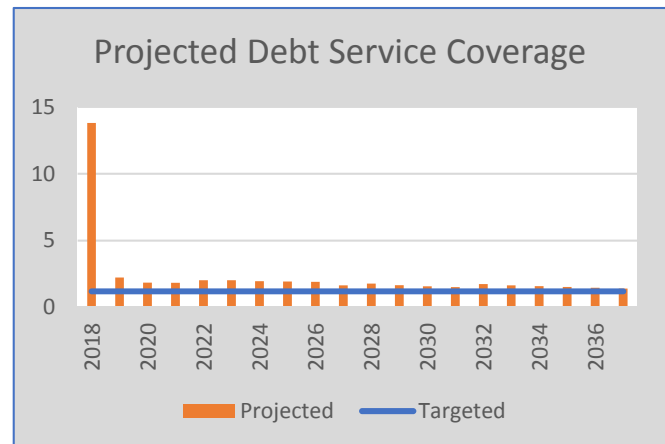
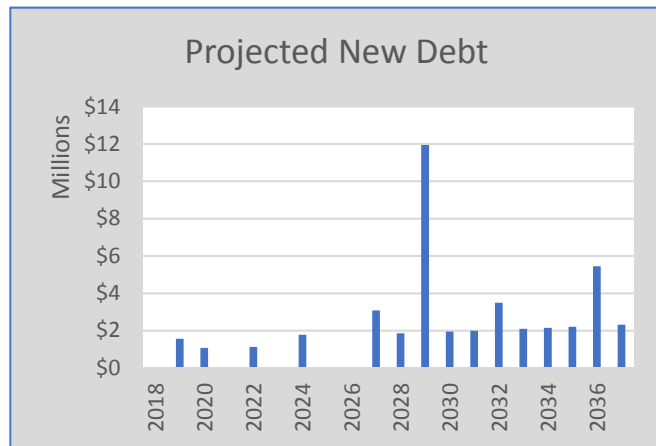
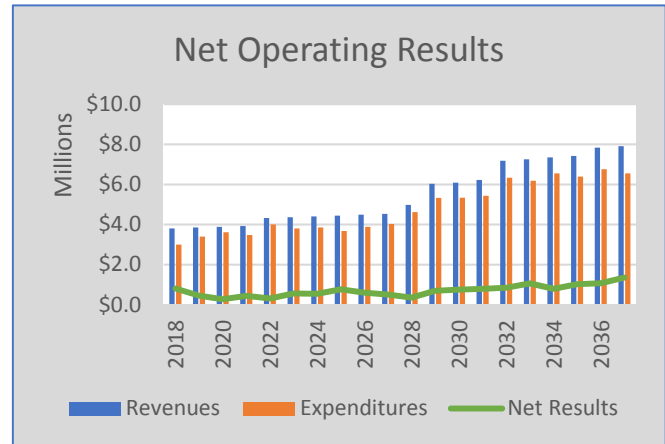
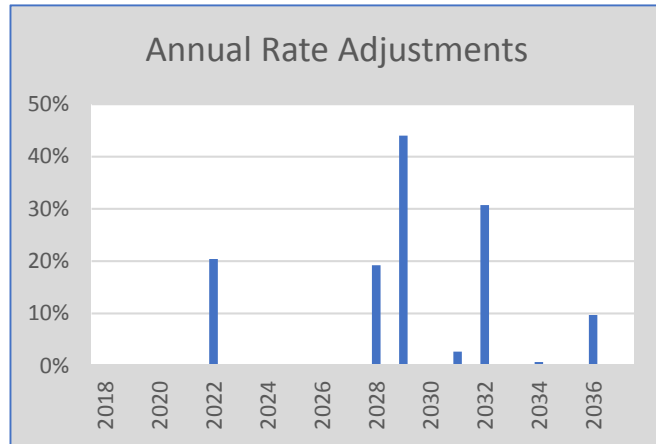


Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	-	1.20	13.80	1,121	1,713	-	1,074
2019	-	1.20	2.23	1,138	1,672	-	2,216
2020	-	1.20	1.85	1,165	1,451	-	1,711
2021	-	1.20	1.83	1,193	1,403	-	470
2022	-	1.20	1.72	1,223	863	-	1,983
2023	-	1.20	1.71	1,253	564	-	623
2024	-	1.20	1.63	1,284	249	-	2,316
2025	-	1.20	1.61	1,316	149	-	333
2026	-	1.20	1.59	1,350	(122)	-	476
2027	-	1.20	1.35	1,407	(537)	1,818	3,388
2028	-	1.20	1.23	1,465	(1,552)	1,863	2,596
2029	-	1.20	0.82	1,525	(3,291)	1,910	12,433
2030	-	1.20	0.76	1,587	(5,047)	1,957	2,453
2031	-	1.20	0.70	1,651	(6,912)	2,006	2,402
2032	-	1.20	0.63	1,717	(9,686)	2,057	4,478
2033	-	1.20	0.59	1,785	(12,322)	2,108	2,761
2034	-	1.20	0.55	1,855	(15,336)	2,161	2,967
2035	-	1.20	0.51	1,926	(18,209)	2,215	2,667
2036	-	1.20	0.44	2,000	(21,462)	2,270	5,800
2037	-	1.20	0.41	2,077	(24,522)	2,327	2,297
<u>Note:</u>							
[1] Amounts shown in \$1,000's.							

## Sewer System

### Scenario 3 – Master Plan Amortized over 100 Years

Rate Increase	Just in Time
Fund Approach	Current Policy - >\$500k debt funded in project year



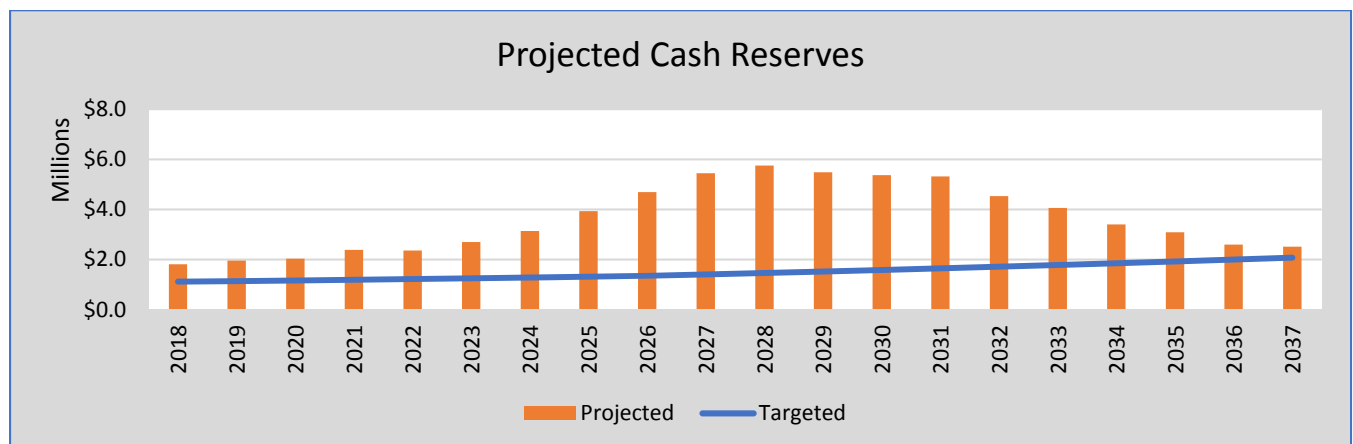
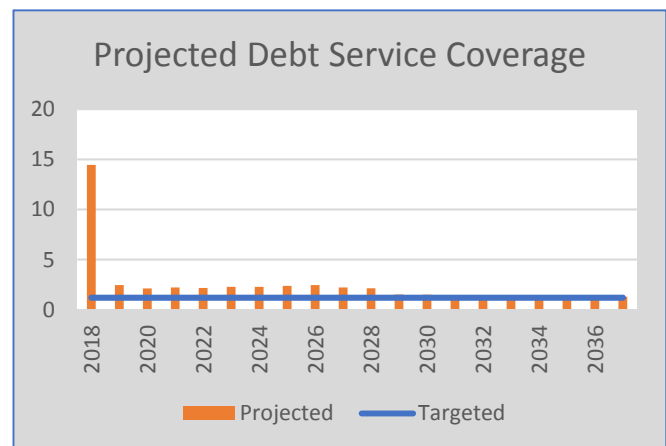
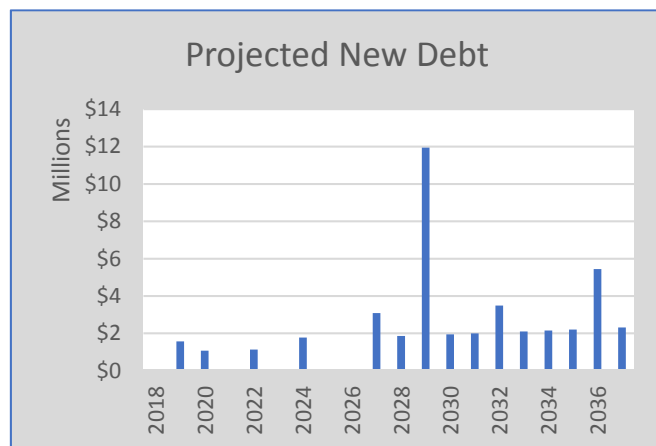
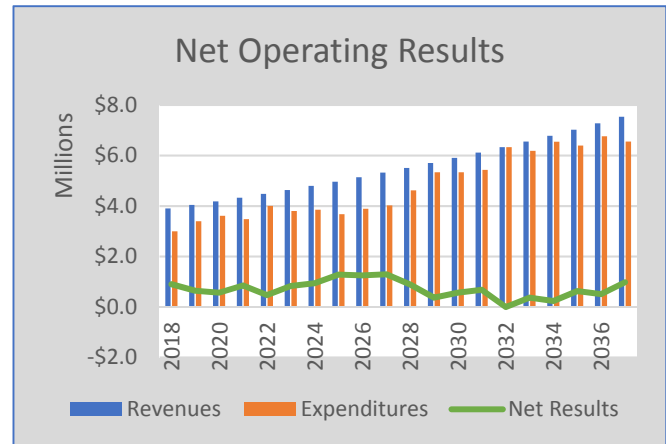
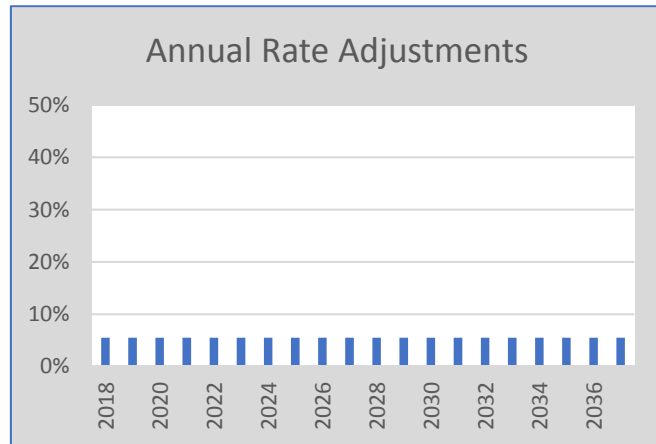
Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	0.00%	1.20	13.80	1,121	1,713	-	1,074
2019	0.00%	1.20	2.23	1,138	1,672	-	2,216
2020	0.00%	1.20	1.85	1,165	1,451	-	1,711
2021	0.00%	1.20	1.83	1,193	1,403	-	470
2022	20.40%	1.20	2.03	1,223	1,224	-	1,983
2023	0.00%	1.20	2.03	1,253	1,290	-	623
2024	0.00%	1.20	1.95	1,284	1,344	-	2,316
2025	0.00%	1.20	1.93	1,316	1,619	-	333
2026	0.00%	1.20	1.91	1,350	1,726	-	476
2027	0.00%	1.20	1.64	1,407	1,695	1,818	3,388
2028	19.20%	1.20	1.77	1,465	1,465	1,863	2,596
2029	44.00%	1.20	1.66	1,525	1,527	1,910	12,433
2030	0.00%	1.20	1.57	1,587	1,595	1,957	2,453
2031	2.70%	1.20	1.51	1,651	1,654	2,006	2,402
2032	30.70%	1.20	1.74	1,717	1,719	2,057	4,478
2033	0.00%	1.20	1.65	1,785	1,949	2,108	2,761
2034	0.70%	1.20	1.58	1,855	1,856	2,161	2,967
2035	0.00%	1.20	1.52	1,926	1,933	2,215	2,667
2036	9.70%	1.20	1.47	2,000	2,001	2,270	5,800
2037	0.00%	1.20	1.40	2,077	2,295	2,327	2,297
<u>Note:</u>							
[1]		Amounts shown in \$1,000's.					



## Sewer System

### Scenario 3 – Master Plan Amortized over 100 Years



Rate Increase	Phased In (level)
Fund Approach	Current Policy - >\$500k debt funded in project year



Fiscal Year	Rate Adj.	Debt Service Coverage		Cash Reserves [1]		Capital Projects [1]	
		Targeted	Projected	Targeted	Actual	Master Plan	Other
2018	5.50%	1.20	14.44	1,121	1,807	-	1,074
2019	5.50%	1.20	2.45	1,138	1,957	-	2,216
2020	5.50%	1.20	2.12	1,165	2,030	-	1,711
2021	5.50%	1.20	2.21	1,193	2,385	-	470
2022	5.50%	1.20	2.17	1,223	2,361	-	1,983
2023	5.50%	1.20	2.27	1,253	2,697	-	623
2024	5.50%	1.20	2.28	1,284	3,141	-	2,316
2025	5.50%	1.20	2.37	1,316	3,931	-	333
2026	5.50%	1.20	2.46	1,350	4,686	-	476
2027	5.50%	1.20	2.22	1,407	5,441	1,818	3,388
2028	5.50%	1.20	2.14	1,465	5,746	1,863	2,596
2029	5.50%	1.20	1.51	1,525	5,482	1,910	12,433
2030	5.50%	1.20	1.49	1,587	5,367	1,957	2,453
2031	5.50%	1.20	1.47	1,651	5,313	2,006	2,402
2032	5.50%	1.20	1.40	1,717	4,527	2,057	4,478
2033	5.50%	1.20	1.39	1,785	4,058	2,108	2,761
2034	5.50%	1.20	1.38	1,855	3,402	2,161	2,967
2035	5.50%	1.20	1.38	1,926	3,084	2,215	2,667
2036	5.50%	1.20	1.30	2,000	2,593	2,270	5,800
2037	5.50%	1.20	1.29	2,077	2,511	2,327	2,297

Note:



[1] Amounts shown in \$1,000's.






## McKinleyville CSD Water and Sewer Master Plan – Phase 1

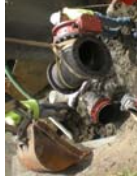

Patrick Kaspari, PE | Project Manager, GHD  
Nathan Stevens, PE | Project Engineer, GHD  
Jeff McGarvey | Financial Analysis, Willdan

December 6, 2017

## McKinleyville CSD Water and Sewer Master Plan – Phase 1






### Presentation Contents

- Overview of Master Plan Effort
  - Water System
  - Sewer System
- Financial Analysis
- Conclusions and Recommendations




## Overview of Master Plan Effort

## Overview of Master Plan Effort

### Two separate Master Plan efforts (water and sewer)

- Both systems are 40+ years old and aging (water system constructed in 1973, sewer system constructed in 1976)
- The systems have been well maintained and serviced by the District, but...
- We need to start planning for their replacement
- The Master Plans will provide a framework for planning, funding, and implementing replacements, rehabilitation, and upgrades to the water and sewer systems for the next 50+ years

## Overview of Master Plan Effort

First cut at long-term replacement plan with associated financial analysis. Focused look at near-term, high-priority projects

Phase 1  
(Current)

Detailed analysis of systematic replacement of system components. Finalize financial analysis.

Phase 2

Physical assessment of portions of the system to determine pipe condition and confirm the schedule established under Phase 2.

Phase 3



## Overview of Master Plan Effort

### Phase 1

- Overview of existing water and sewer systems
- Summary of previous related studies
- Assess short term (next +/- 5 years) upgrade requirements
- Develop entire system replacement costs
- Financial analysis of cost/rate impacts from replacing systems over 50-, 75-, 100-year time frame



## Water System

### Water System

#### Overview

- 6,200 connections
- 91 miles of water mains
- Two pump stations (Ramey and Cochran)
- Six storage tanks (5.25 MG of storage)



## Water System

### Preliminary Needs Assessment

- Pipe size (i.e. flow capacity) is not currently an issue, nor is it projected to be an issue for the foreseeable future
- District staff have not identified any problematic areas that have required excessive maintenance or repairs
- Some minor issues regarding low pressure in higher elevation areas (Dows Prairie and McCluski Hill), and high pressure in lower elevation areas (Patrick Creek Drive and Little River Drive)
- No near-term projects required (aside from new storage tank, which is being addressed separately)



## Water System

### Long-Term Replacement Analysis

- Majority of the system piping is asbestos cement that is over 40 years old, and much of this will likely need to be replaced in the next 10 to 30 years
- Critical to understand the condition of the pipeline from HBMWD, two Highway 101 crossings, and three bridge crossings
- Significant planning (and cost) required to replace the pipeline along Central Avenue



## Water System

### Long-Term Replacement Analysis

- Overall cost to systematically replace the entire system

Description	Total Cost
Main Distribution System Replacement	\$135 M
Mad River Crossing	\$2.5 M
Pipe from TRF to Mad River Crossing	\$2.9 M
Hwy 101 Crossings (Directional Drill)	\$700 k
Bridge Crossings	\$825 k
<b>Total</b>	<b>\$142 M</b>



## Sewer System



## Sewer System

### Overview

- 5,180 connections
- 73 miles of sewer mains (including 1.7 miles of force mains)
- Five lift stations (Fischer, B St, Letz, Kelly, and Hiller)

## Sewer System

### Preliminary Needs Assessment – Short- and Mid-Term Issues

- Capacity issues:
  - Middle crossing,
  - South crossing,
  - Intersection of Railroad/Spruce,
  - Intersection of Hiller/Thiel
- The asbestos cement (AC) main on Central Avenue between Sutter and Hiller is severely corroded
- Force Mains?

## Sewer System

### Mid- to Longer-Term Issues

- Critical to understand the condition of the force mains, stream crossings, and Highway 101 crossings
- Majority of the system piping is AC that is over 40 years old, and much of this will likely need to be replaced in the next 10 to 30 years

## Sewer System

### Long-Term Replacement Analysis

- Overall cost to replace the entire system

Description	Total Cost
Collection System Main Replacement	\$139 M
Highway Crossings (North, Middle, and South)	\$3 M
<b>Total</b>	<b>\$142 M</b>

## Sewer System

### Near-Term Rehabilitation Plan (next 5-10 years)

- Middle Highway 101 Crossing (highest priority)
  - Capacity issues during very large storm events, which will be exacerbated with projected growth
  - Preliminary design completed as a part of this Phase 1 Master Plan effort
  - Upgrade should be performed in the next 5 years (total estimated cost = \$847k)
- South Highway 101 Crossing
  - Projected capacity issues, begin planning for upgrade in the next 5 years
- Central Avenue Main from Sutter Road to Hiller Road
  - Severe corrosion of the existing asbestos cement main
  - Very difficult area for repairs, analyze and assess during Phase 2
- Force Mains
  - All of the wastewater flow in the system through the four lift stations west of Highway 101 (Fischer, Letz, Kelly, and Hiller).
  - Very significant issue if one of the force mains downstream of these lift stations failed, analyze and assess during Phase 2



## Financial Analysis

## Financial Analysis

- 30-year projections of operating results for replacing the entire water and sewer system under three scenarios:
  - No rate increases
  - Just-in-time rate increases
  - Phased-in rate increases
- Each scenario includes an analysis of completing the improvements in 50, 75, and 100 years.
- WE ARE NOT RECOMMENDING that the District begin implementing the rate increases presented in this section.
- This is simply an analysis to assess what effect the replacement of the entire system (water and sewer) would have on user rates.



## Financial Analysis

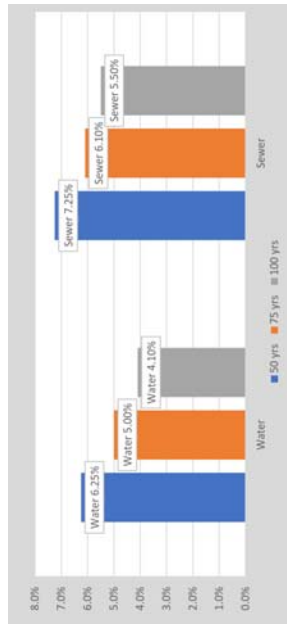
### Range of Potential Rate Adjustments

Amortization Period	Rate Scenario	Water System	Sewer System
50 yr	None	-	-
	Just-in-Time	0.00% - 41.40% Avg - 7.28%	0.00% - 43.40% Avg - 8.62%
	Phased-In (levelized)	6.25%	7.25%
75 yr	None	-	-
	Just-in-Time	0.00% - 30.30% Avg - 5.59%	0.00% - 42.10% Avg - 7.16%
	Phased-In (levelized)	5.00%	6.10%
100 yrs	None	-	-
	Just-in-Time	0.00% - 24.20% Avg - 4.64%	0.00% - 44.00% Avg - 6.37%
	Phased-In (levelized)	4.10%	5.50%





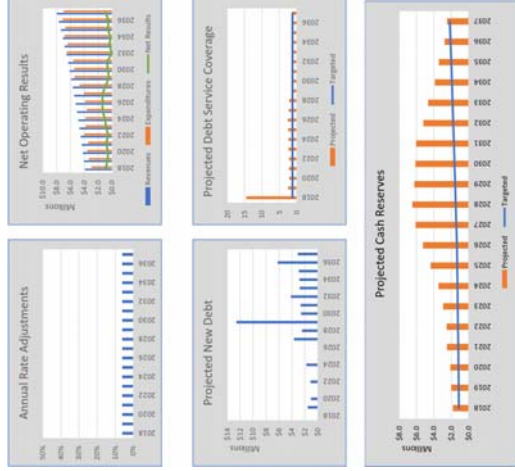
## Financial Analysis



Estimated Annual Rate Adjustments  
with the Phased-in Method



## Financial Analysis



Master Plan Water  
System Replacement  
Amortized over 75 Years  
with Phased-in Approach



## Conclusions and Recommendations

### Water System

- Generally in good condition
  - No major areas of concern, no flow capacity issues
- Minor pressure issues in extreme low and high elevation areas of the system
- Need to understand condition of main line from HBMWD and 101 crossings
- However, system is over 40 years old
- It is critical that the District begin planning and budgeting now for upgrades and replacement



## Conclusions and Recommendations

### Sewer System

- The majority of the system is generally in good condition and has adequate capacity to serve District customers for the foreseeable future
- The middle Highway 101 crossing is under capacity and needs to be addressed in the near term (+/- 5 years, \$847k total cost)
- The south Highway 101 crossing also has capacity issues. This project should be budgeted for in the next +/-10 years (~\$1 million total cost for budgetary purposes)
- The asbestos cement main on Central Avenue from Sutter Road to Hiller Road is severely corroded and should be replaced in the next +/-10 years
- The force mains are a critical part of the system, and we need to understand their condition
- The rest of the system is over 40 years old, and we need to begin to plan for its replacement



## Conclusions and Recommendations

### Next Steps

- Detailed scheduling/phasing for replacement of:
  - Middle Sewer Crossing
  - Central Avenue Sewer (and water?)
  - Southern Sewer Crossing
  - Assessment of sewer force mains and water main line from HBMWD
- How much of the rest of the water and sewer system can we afford to replace per year?
- Generate a more refined financial analysis
- Finalize Master Plan that provides the District with a road map of how much water and sewer pipe to replace when and how to pay for it



Questions?



# McKinleyville Community Services District

## BOARD OF DIRECTORS

December 6, 2017

TYPE OF ITEM: **ACTION**

---

**ITEM: E.3**                      **Denial of Claim Damages for Auto Collision**

**PRESENTED BY:**              **Colleen M. R. Trask, Finance Director**

**TYPE OF ACTION:**              **Roll Call Vote**

### **Recommendation:**

Staff recommends that the Board discuss, take public comment and deny the claim against the District resulting from the collision involving Unit 23 on 9 September 2017, so the District's liability insurance may handle the claim.

### **Discussion:**

Unit 23 was involved in a minor collision on 9 September 2017, as Director Mayo returned from an ACWA Region 3/Region 4 Event. The collision resulted in a standard claim against the District, **Attachment 1**. In order for the District's liability insurance to handle the claim, it must first be rejected by the District. A standard Notice of Rejection was provided by our liability carrier, and signed by the General Manager, **Attachment 2**.

However, Regulation 63 states that the Board may grant a variance in the case of special circumstances, unnecessary hardship, and where such variance would not defeat the purpose of the Rules and Regulations. In this case, where no variance has been requested, where there are no special circumstances or unnecessary hardship, and where granting a variance would result in our liability carrier being unable to properly process the claim, staff recommends that the Board deny any variance on the claim damages resulting from the 9 September 2017 collision of Unit 23.

### **Alternatives:**

Staff analysis consists of the following potential alternative

- Take No Action

### **Fiscal Analysis:**

If the claim is denied as requested, the District's liability insurance premium might increase very slightly over the course of the next several years.

If the claim is not denied, the District would pay directly for the cost of repairing the claimant's vehicle.

### **Environmental Requirements:**

Not applicable

### **Exhibits/Attachments:**

- Attachment 1 – Claim #7120 Against MCSD for Unit 23 Collision
- Attachment 2 – Signed Standard Notice of Rejection on Claim #7120

## CLAIMS FORM

Agency Name: McKinleyville Community Services District  
1656 Sutter Road, McKinleyville CA 95519

Date Claim Received: September 15, 2017

This form is provided pursuant to Government Code 910.4 (a)

1. Claimant's Name: JULIA IBARRA (DRIVER) & INGRID IBARRA (OWNER OF HONDA CRV)

2. Claimant's Address: 51 LAGUNA SECA COURT ST HELENA CA 94574

3. Claimant's SSN: 620-40-5196 Home Phone: (925) 525-5959

4. Date of Loss: 09-09-17 Time of Loss: 11:45AM

5. Location of LOSS (Specify in as much detail as possible, i.e., 5 feet east of west corner of Elmira Road and Peabody).

RIVER RD & RIO RD GUERNEVILLE CA

6. Description of incident or accident which caused you to make the claim:

Ford Fusion proceeded to make a left turn from stop sign on Rio Rd onto River Rd while Honda CVR was making a left turn from River Rd onto Rio Rd (Honda CRV did not have a stop sign) and in the process, the Ford's front end struck Honda's left middle side.

7. What specific injury, damages or other losses did you incur? No injuries reported. Damage to the Honda CRV on the left middle. Damage to the Ford Fusion on the front end.

8. Basis for computation: Unknown at the moment.

9. How was this amount calculated: (Itemize and attach basis, repair estimates, receipts, etc. If claim is for vehicle damage, obtain and attach two (2) repair estimates): Estimate pending.

10. What is your basis for claiming that the MCSD or MCSD Employee(s) are the causes of your injury, damages or loss? Failure to yield the right of way and respect traffic controls.



11. What are the name(s) of the District representative(s) or employee(s) whom you allege caused your injury, damages or loss, if known? Dennis Mayo

12. Name, address and phone number of any witnesses who can substantiate your claim.  
NONE

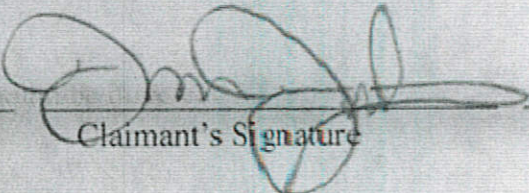
13. Any additional information that you believe might be helpful to the MCSD in considering this claim: \_\_\_\_\_

14. All notices and communications with regard to this claim will be directed to the Claimant shown in line 1 and 2 above unless you complete the following to identify to whom further communication should be directed:

Name: JULIA IBARRA (OWNER OF HONDA CRV)  
Relationship: CLAIMANT  
Address: 51 LAGUNA SECA COURT ST HELENA State: CA ZIP: 94574  
Daytime Phone: (925) 525-5959  
Home Phone: 925-389-1686

Section 72 of the Penal Code provides that, "every person who, with intent to defraud, presents for allowance or for payment to any State Board or Officer, or to any county, town city, district, board or officer, authorized to allow or pay the same if genuine, any false or fraudulent claim, bill, account, voucher, or writing, is guilty of a felony."

Ingeid Ibarra  
Claimant's Printed Name

  
Claimant's Signature

9/17/2017  
date signed

(Note: if the claim is filed by someone on behalf of the claimant, the person making the claim on behalf of the claimant should sign above).

Completed Claim Forms must be submitted by personal delivery or by United States mail to the address listed at the top of this form.

Section 72 of the Penal Code provides that, "every person who, with intent to defraud, presents for allowance or for payment to any State Board or Officer, or to any county, town city, district, board or officer, authorized to allow or pay the same if genuine, any false or fraudulent claim, bill, account, voucher, or writing, is guilty of a felony."



**PHYSICAL ADDRESS:**

1656 SUTTER ROAD  
McKINLEYVILLE, CA 95519

**MAILING ADDRESS:**

P.O. BOX 2037  
McKINLEYVILLE, CA 95519



[mckinleyvillecsd.com](http://mckinleyvillecsd.com)

**MAIN OFFICE:**

PHONE: (707) 839-3251  
FAX: (707) 839-8456

**PARKS & RECREATION OFFICE:**

PHONE: (707) 839-9003  
FAX: (707) 839-5964

Date: 29 September 2017

**Ingrid Ibarra**

**51 Laguna Seca Court**

**Saint Helena, CA 94574**

RE: Claimant: **Ingrid Ibarra**  
Date of Loss: **09/09/2017**

Dear **Ms. Ibarra**:

Enclosed please find a Notice of Rejection for the above referenced claim. This matter has been referred to the District's Risk Management Administrator, Special District Risk Management Authority (SDRMA). Any further communication regarding this claim can be directed to SDRMA, 1112 "I" Street, Suite 300, Sacramento, CA 95814.

Very truly yours,

A handwritten signature in blue ink, appearing to read 'Gregory Orsini', written over a circular stamp.

**Gregory Orsini**  
**General Manager**  
**McKinleyville Community**  
**Services District**

**PHYSICAL ADDRESS:**

1656 SUTTER ROAD  
McKINLEYVILLE, CA 95519

**MAILING ADDRESS:**

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PHONE: (707) 839-9003  
FAX: (707) 839-5964

Date: 29 September 2017

**Ingrid Ibarra**  
**51 Laguna Seca Court**  
**Saint Helena, CA 94574**

RE: Claimant: **Ingrid Ibarra**  
Date of Loss: **09/09/2017**

Notice is hereby given that the claim presented to the **McKinleyville Community Services District** on **9 September 2017**, was rejected on **29 September 2017**.

**"WARNING"**

"Subject to certain exceptions, you have only six (6) months from the date this notice was personally delivered or deposited in the mail to file a court action on this claim. See Government Code Section 945.6

This time limitation applies only to causes of action arising under California law for which a claim is mandated by the California Governmental Tort Claims Act, Government Code sections 900 et. Seq. Other causes of action, including those arising under federal law, may have different time limitations for filing.

You may seek the advice of an attorney of your choice in connection with this matter. If you desire to consult an attorney, you should do so immediately."

Very truly yours,

  
**Gregory Orsini**  
**General Manager**  
**McKinleyville Community**  
**Services District**

**DECLARATION OF SERVICE BY MAIL**

State of California

***Community of McKinleyville***

I am employed in the ***McKinleyville Community Services District***, State of California. I am over the age of 18 and not a party to the within cause or claim; my business address is: ***McKinleyville Community Services District, P.O. Box 2037, McKinleyville, California 95519.***

I served the foregoing document, "Rejection of Claim" by depositing a true copy thereof in the United States Mail in ***McKinleyville***, State of California, on ***29 Sept. 2017***, enclosed in a sealed envelope, with the postage thereon full prepaid, addressed as follows:

***Ingrid Ibarra***

***51 Laguna Seca Court***

***Saint Helena, CA 94574***

I declare under penalty of perjury that the foregoing is true and correct.

Executed this ***29 Sept. 2017***, at ***McKinleyville***, California.



---

***Gregory Orsini***  
***General Manager***



# McKinleyville Community Services District

## BOARD OF DIRECTORS

December 6, 2017

TYPE OF ITEM: **INFORMATION**

---

**ITEM: E.4**                      **Review the Draft Strategic Plan 2018-2022**

**PRESENTED BY:**              **Emily Abfalter, Board Secretary**

**TYPE OF ACTION:**            **None**

### **Recommendation:**

Staff recommends that the Board, in a workshop format, review the proposed five (5) year Strategic Plan, discuss, make recommendations and take public comment. No action will be taken at this time as this item will return for approval at the January 3, 2018 Board meeting.

### **Discussion:**

The McKinleyville Community Services District Strategic Plan process began in August of 2012, with Board approval. The Strategic Plan was returned to the Board On December 4, 2013 where it received the final approval of the MCSD Board.

Staff continues to update the Strategic Plan by meeting regularly to reflect continued progress that MCSD makes with projects, finances and improvement programs. This plan is foundational to the District's long term financial health and stability yet provides annual reviews to stay grounded in the current and mid-term needs of the community we serve. The Strategic Plan will continue to be presented to the Board on a calendar year basis for approval.

Tonight in a workshop format we would encourage the Board to discuss, add and modify policy related issues to provide staff and management direction for the coming five (5) years. Cells highlighted in yellow of the 'Section Number' column of the matrix reflect changes made to the narrative. For clarification, the Board and Staff will be working with a consultant for a 5 year update during the coming year.

### **Alternatives:**

Take Action

### **Fiscal Analysis:**

Not applicable

### **Environmental Requirements:**

Not applicable

### **Exhibits/Attachments:**

- Attachment 1 – Strategic Plan 2018-2022 Draft



# Strategic Plan

2018-22

## McKinleyville

### Community Services District

**Mission Statement:**

*Provide McKinleyville with safe and reliable water, wastewater, lighting, open space, parks and recreation, and library services in an environmentally and fiscally responsible manner.*





### **Board of Directors**

David Couch, President  
Mary Burke, Director  
John Corbett, Director  
Dennis Mayo, Director  
George Wheeler, Director

### **District Management Team**

Greg Orsini, General Manager  
Colleen Trask, Finance Director  
James Henry, Operations Director  
Lesley Frisbee, Recreation Director  
Emily Abfalter, Board Secretary

### **Strategic Plan Consultant – BHI Management Consulting**

Brent H. Ives, Principal



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## **INTRODUCTION**

A Strategic Plan is a top level planning document for an organization to set clear direction over all operational aspects of its mission. It serves as a framework for decision making over a five-year period. It is a disciplined effort to produce fundamental decisions that shape what a District plans to accomplish by selecting a rational course of action. This planning process began with an environmental scan of the District's business environment including an objective assessment of the District's strengths, weaknesses, opportunities and threats. Input from various stakeholders was gathered and analyzed. Starting with that information the District's Mission, Core Values, Vision and the overall structure of this Strategic Plan were developed by the Board in workshop settings. Within the framework of that structure and the business environment, strategies and goals were developed to sustain and where appropriate improve the District over the next five years. At its highest level, this Strategic Plan seeks to strengthen and build upon opportunities while addressing areas of concern.

This plan also identifies actions, activities, and planning efforts that are currently underway and which are needed for continued success in operations and management of the District, and provides for periodic reviews and updates.

The strategic planning effort has focused on all of the following important areas:

- Ensuring the District's long term financial health and stability;
- Carefully managing the infrastructure needed to fulfill the District's Mission;
- Providing responsible stewardship of the water, wastewater, parks & recreation, streetlights and other services with which we are entrusted;
- Sustaining a high performing, motivated and adaptable workforce;
- Sustaining sound management practices and good governance;
- Fostering partnerships when needed to better achieve our Mission; and
- Assuring clear, concise and consistent communications with the community we serve.

## STRATEGIC PLANNING DEFINITIONS

Mission Statement: A declaration of the District's purpose, which succinctly describes why the District exists. All activities of the District should be in support of the Mission Statement. The Mission Statement is adopted by the Board of Directors. The Mission Statement is reviewed annually but is intended to be constant over the long term.

Vision Statement: A statement that articulates where the District wants to be over the life of the Strategic Plan. It outlines at the highest level the key changes that must be achieved by the Strategic Plan. The Vision creates and drives strategy and tactics identified elsewhere in the Strategic Plan. The Vision Statement is adopted by the Board of Directors. The Vision Statement will be reviewed annually and will typically change more frequently than the Mission Statement to reflect the direction the Board wants to take the District over the five-year time horizon of the Strategic Plan.

Strategic Elements: The broad and primary areas of District operations, planning, and management that are addressed and supported by the Strategic Plan goals. These essentially serve as the outline and organization of the Strategic Plan. The Strategic Elements are adopted by the Board of Directors. The Strategic Elements are reviewed annually but are intended, absent major new issues to be faced, to be relatively constant over the life of the five year Strategic Plan.

Objective And Strategy Statement: A concise statement associated with each Strategic Element that describes the objective of that element. It explains why that element is important to the District's overall strategy and finishes with a statement that describes how the Objective for that Element will be achieved through a strategy.

Strategic Goals: A short statement of desired success. The goal statement is supported by a narrative that more fully explains the nature of the goal and the issues that the goal intends to address. The Strategic Goals are prepared by management and accepted by the Board. The Strategic Goals will change from year-to-year when



the annual assessment is made of the progress on each Strategic Element. The Strategic goals straddle the line between policy (Board responsibility) and implementation (management responsibility) and as such are a collaborative effort of both the Board and management.

## **STRATEGIC PLAN DEVELOPMENT**

In FYE 2012 the District retained the services of BHI Management Consulting (BHI) to facilitate and coordinate the development of the District's five-year Strategic Plan. BHI first gathered input from the District employees in a number of meetings so as to allow direct and "ground level" input to the Board during their deliberations on the Strategic Plan. A public meeting was then held to further gain a broad perspective on the future of the District. To prepare for Board workshops the Consultant interviewed the District Board members individually on matters they thought were most relevant to future strategy for the District. The following topics were discussed at all of the input gathering meetings:

- Mission;
- Vision;
- Strengths;
- Weaknesses;
- Opportunities; and
- Threats.

The Board supported this process as a way to allow all to participate in the foundation of the Strategic Plan. Two Board workshops were conducted. At these workshops the Board reviewed all input, revisited and refined the existing Mission Statement of the District, created a new Vision Statement for the District and discussed Core Values.

A steering committee, consisting of Senior Management and staff, worked with BHI to develop the Strategic Goals that support each Strategic Element. Using this process, along with both external and internal input, the Strategic Plan was assembled in a

way that best articulates the Board's Vision and Strategy for the District over the next five years.

## **CONTINUATION PROCESS OF THE PLAN**

A key part of the Strategic Planning process is to conduct an annual review to update the Plan. These reviews allow for regular maintenance of the Plan so that it reflects the actual progress and conditional needs of the District. The reviews will be documented and followed up with by either a Plan supplement or an updated Plan. A five-year planning horizon will be maintained with each review effort developing a new fifth year of actions, projects and initiatives.

## MISSION AND VISION STATEMENTS

### **DISTRICT MISSION**

*Provide McKinleyville with safe and reliable water, wastewater, lighting, open space, parks and recreation, and library services in an environmentally and fiscally responsible manner.*

### **DISTRICT VISION**

*In five years, MCSD will:*

- *have continued our commitment to infrastructure maintenance*
- *have explored options for additional emergency water supplies*
- *have assured water reliability (distribution system)*
- *have converted customers to all radio read meters*
- *have secured funding and completed construction of the WWMF improvement project*
- *be proactive with regulatory compliance*
- *have continued our commitment to maintenance of parks, facilities and trails*
- *have opened and are operating our teen center*
- *have identified funding sources for community forest development and maintenance*
- *be operating Mad River Park*
- *have secured funding for park and trails development*
- *have formalized relationships and collaborations with other governmental agencies*
- *have maintained a high quality and efficient workforce*
- *have continued our commitment to ensuring efficient and ethical governance*
- *have improved communications with the ratepayers and the entire McKinleyville Community*

- *have ensured continued planning and training for emergency operations*
- *have achieved a “best practices” distinction*
- *have long-term, financial sustainability in all District programs (debt, reserves, program costs, etc.)*

## STRATEGIC ELEMENTS

Strategic Elements represent the vital areas of the District's operation and management wherein strategy is placed. They assure that the implementation of strategy work to be performed in support of the Mission and Vision are comprehensive in nature and properly cover all areas of the District. Strategic elements are derived from the foundational Mission and Vision statements of the District. They are linked to action and results through the Strategic Goals written in each area and the Strategic Work Plan. The Strategic Work Plan contains the supportive actions and initiatives organized and prioritized by year within the planning period. It presents each Strategic Goal and consolidates actions in tabular form in **Table 1 - Strategic Plan “Matrix” (pg. 38).**

The Strategic Elements are:

- 1.0 Water
- 2.0 Wastewater
- 3.0 Streetlights
- 4.0 Parks and Recreation
- 5.0 Partnerships
- 6.0 Personnel/Organization
- 7.0 Administrative Management
- 8.0 Financial Sustainability

## 1.0 WATER

**Objective:** *The objective is to continue our commitment to supply safe and reliable drinking water to our present and future customers.*

**Strategy:** *We will do this by keeping replacement, repair and upgrading of our pipes, and pumps at a high level by ensuring adequate funding.*

### 1.1 MAINTENANCE PROGRAMS

Maintaining reliable water distribution and storage is the number one priority of MCSD. Through the use of our Preventative Maintenance work order software (SEMS) we will continue planned maintenance of all facilities. Annual and monthly inspections will be conducted on all aspects of the system. Results of these inspections will be used to prioritize and schedule repairs. These facilities include:

- All Booster Pumps and Motors
- Pressure Reducing Valves
- Fire Hydrants and Distribution Valves
- Emergency Chlorination Systems
- Emergency Generators
- Storage Tanks

During this planning period, tank maintenance will include the recoating of Tank 1 B at Cochran Road and the replacement of the shingled roof on redwood Tank 3 B at McCluski. Monitoring unaccounted for water will indicate potential leaks and initiate the search. At this time our unaccounted for water is within the industry standard, verifying the integrity of our distribution system.

### 1.2 WATER STORAGE TANK PROJECT

The Board has determined the necessity to maintain a 5-day reserve of water due to our single source. We are in the process of negotiating the purchase of property adjacent to Cochran Tank Site. Upon completion of the procurement process, a cost benefit analysis on tank type will be conducted to determine whether the tanks design will be steel or

concrete, and design completed. Search for grant funding to offset costs. Geo Tech was performed on the prospective parcel.

### **1.3 EMERGENCY WATER CROSSING**

The connection between MCSD and Arcata is completed. Standard Operating Procedures have been developed and are in Arcata's hands to approve or comment.

### **1.4 EMERGENCY WATER SUPPLY**

MCSD is pursuing grant funding to develop a Ground Water Management Plan (GWMP). Due to the vulnerability of one source of water, MCSD had determined an emergency ground water source is necessary. Through development of the GWMP, reliable sources of ground water will be developed in the event of an emergency. Locations are being developed where the potential for groundwater can be explored.

### **1.5 DIGITAL CONTROL UPGRADE**

Due to age of existing digital control at tank sites and booster stations, MCSD has completed updating this equipment. These system upgrades ensure public safety and have supervisory control of remote infrastructure; these systems must perform in a reliable manner. MCSD will be exploring a new or updated digital control strategy to update the water stations. The District is under contract for design/build to complete the upgrade in 2018. A Radio survey has been completed which will give the District the path in choosing equipment to be installed by the contractor.

### **1.6 WATER MAIN REHABILITATION AND REPLACEMENT**

The original MCSD water distribution system is 40 years old. The integrity of the system is still sound but since the rehabilitation of in-the-ground pipe is costly; funds will start being set aside for this particular project. Replacing valves and AC pipe with C900 as upgrades or repairs occur is also part of the District's improvement strategy. The District is under contract with GHD to complete a Water Main Rehabilitation Plan. The Plan will

be split into 3 phases that will cover pipe conditions, capacity, replacement costs and rate structure.

### **1.7 RADIO READ METERS**

Radio read meter technology has matured to a point where it is now feasible and cost effective to utilize them. MCSD specification requires all new meters be radio read. As meters age to roughly 15 to 18 years they have been replaced in the past. MCSD is in the process of replacing older meters with radio meters. The radio head retrofits were completed in 2015. This process will be ongoing for the next two years.

### **1.8 FIRE HYDRANT UPGRADE AND INSTALLATION**

MCSD has agreed to “cost share” with the Arcata Fire Protection District to install fire hydrants where needed in commercial and residential areas. The fire department will cover 50% of the time and material cost to install new fire hydrants.

### **1.9 EMERGENCY GENERATOR UPGRADE**

The Cochran Tank Site generator is nearing the end of its life cycle. The District plans to upgrade the generators to meet emission regulations and to allow for future pump upgrades during this planning period. An engineer will be contracted to design the generator size and installation to meet future needs.



## 2.0 WASTEWATER

**Objective:** *The objective is to continue our commitment to provide safe and reliable collection, treatment, recycling and disposal of wastewater to meet current and future regulatory requirements and community needs.*

**Strategy:** *We will do this by meeting current community wastewater needs and continuing to monitor proposed future regulatory and capacity requirements and ensuring adequate funding.*

### 2.1 20-YEAR FACILITY PLAN

A facility plan was completed and accepted by the Board in December of 2011. The three year long process evaluated the collection and treatment systems and the reclamation and discharge facilities. These evaluations were used to determine the adequacy of existing facilities so phasing of upgrade or replacement could be documented.

- WWMF
- Wastewater reclamation sites
- Collection system
- Lift stations

### 2.2 WWMF IMPROVEMENT PROJECT

MCSD's existing treatment facility is unable to meet current limitations as set forth in the NPDES permit and upcoming limitations will only become more stringent. An upgrade is necessary to be in compliance with upcoming State nutrient removal requirements and to avoid future fines. The bid process was completed and a general contractor chosen for the construction of a new WWMF to meet current and future discharge limitations. The project is scheduled for completion during this planning period with an estimated completion date of June 2017. As of the end of the 2016 year, the clarifiers have been poured and tested, the mechanical building is 60% completed, the headworks is poured and tested along with underground pipe and valves installed. A biosolids management plan will also be developed as part of the upgrade. A State Revolving Fund low interest loan was secured to cover the costs of planning, design and construction.

### **2.3 COLLECTION SYSTEM UPGRADES**

A sewer model was designed to locate undersized mains in the collection system. Scenarios were run using proposed growth and major rain events. Several locations were identified as being inadequate to handle the flow increase without causing sewer back-ups and possible spills. Engineers have been working on the Rehabilitation Plan and have split it into 3 phases. A Technical Memorandum will be completed as part of Phase 3 for the proposed Thiel crossing as part of the Sewer Main Improvement and Rehabilitation Plan (item 2.4) along with collecting flow data. The Board has determined Thiel will be the crossing upgraded with the other two crossings not needing an upgrade in the CIP horizon.

### **2.4 SEWER MAIN IMPROVEMENT AND REHABILITATION**

The Board has made the prevention of infiltration a priority. Preventing groundwater from mixing with the sewer saves on pumping and treatment costs. An internal pipe patch repair kit was purchased to make these trenchless repairs. It will not only repair the broken section of the main but also save excavation costs. Replacing AC pipe with SDR 35 as upgrades or repairs occur is also part of the District's improvement strategy. The District is under contract with GHD to complete a Sewer Main Rehabilitation Plan. The Plan will be split into 3 phases that will cover pipe conditions, capacity, replacement costs and rate structure.

### **2.5 DIGITAL CONTROL UPGRADE**

Due to age of existing digital control, MCSD is in the process of updating this equipment. In order to ensure public safety and maintain proper supervisory control of remote infrastructure, these systems must perform in a reliable manner. The WWMF controls will be addressed during the improvement project as well as updating the sewer stations. The District is under contract to complete the design/build upgrade in 2018. A Radio survey has been completed which will give the District the path in choosing equipment to be installed by the contractor.

## **2.6 SEWER LIFT STATION GENERATOR UPGRADES**

The sewer lift station generators are nearing the end of their service life. There are also emission restrictions on these generators, which prevent the needed cycling of these generators. The District plans to upgrade the generators to meet emission regulations and to allow for future pump upgrades during this planning period. An engineer will be contracted to design the generator size, installation and bidding process to meet future needs. Grant funding opportunities have been secured to cover 75% costs for the Fischer and Letz generator upgrade.

## **2.7 PRE-TREATMENT PROGRAM**

A pretreatment program is very important to regulate unwanted discharging into the sewer collection system, which can disrupt the treatment process; grease from cooking facilities can play a major factor in sewer spills. By direction of the Board, the sewer use ordinance will be updated on local limits to reflect capabilities of the new process along with issuing and administering grease trap permits. Discharge permits were issued to non-domestic discharges. This State mandated program will be fully implemented in this planning period. Due to the new marijuana regulations, research is being conducted to regulate the discharge from the permitted facilities along with the District issuing them a discharge permit.

## **2.8 I&I PREVENTION**

Inflow and Infiltration is costly to pump and treat. It can also overwhelm a sewer lift station and possibly cause sewer spills. Annual inspections of manholes, smoke testing and flow testing are ways MCSD identifies these issues. Keeping the public educated on not pulling cleanouts or connecting storm drains and downspouts into their sewer laterals is a method of eliminating inflow problems. Gel grouting rehabilitation of manholes and pipe patching will continue to be a priority to eliminate infiltration. MCSD will continue to utilize the camera van and push camera to inspect discrepancies found during inspections. Through the use of multiple media channels new methods of community education will be implemented during this planning period.

**2.9 RECLAMATION SITE EXPANSION**

Staff is researching ways to expand the District's reclamation area to meet future demand. Crop species are being studied along with purchasing property within the NPDES permit boundaries. A bio-filtration pilot study is in design phase and will be implemented. The funding for this study is being provided through Land and Conservation Act grant funds. Irrigation infrastructure will be installed in areas that will benefit from the reclaimed water.

**2.10 PERCOLATION SITE DECOMMISSIONING**

Due to ongoing restrictions and regulatory pressures MCSD has determined it is effective and efficient to decommission our Percolation Ponds west of the Fischer Property adjacent to the lower pasture as noted in the MCSD Wastewater Facilities Plan approved by the Board in December of 2011. The Flood Plain Enhancement Project will be designed and constructed using various grants. This project will coincide with the decommissioning of the Percolation Ponds.

### 3.0 STREETLIGHTS

**Objective:** *The objective is to continue our commitment to provide public safety through well-lit streets, intersections and neighborhoods.*

**Strategy:** *We will do this by implementing the most cost effective and reliable streetlight technology and through adequately funded continuing maintenance programs.*

#### 3.1 MAINTENANCE PROGRAMS

Through use of a new pole inspection program, poles will be replaced prior to becoming a safety hazard and as needed due to condition or collision. GIS locations of new poles will be collected as new development occurs.

## 4.0 PARKS AND RECREATION

**Objective:** *The objective is to provide safe and high quality parks, facilities, trails and recreation programs for the McKinleyville community.*

**Strategy:** *We will do this by encouraging community participation to assess recreational needs; deliberately seeking broad funding for the support of parks, facilities, and trails.*

### 4.1 TEEN AND COMMUNITY CENTER

Over the course of the last several years, staff gained community feedback to consider future needs for the Parks & Recreation Department. The results of this survey showed support for building a Teen Center in McKinleyville. In 2012, the Board approved Measure B and authorized staff to begin the process to design and construct a Teen and Community Center at Pierson Park. A majority of funding for the construction and a portion of the maintenance for this project has been secured through the successful passing of Measure B. The facility was furnished and equipped through grants and donations from the community.

Staff implemented the business plan and MOU for the partnership between MCSD and Boys & Girls Club of the Redwoods (BGCR) and reviews it for renewal annually. Staff continue to work with BGCR staff on fundraising to support the programs and operations of the facility.

### 4.2 HEWITT RANCH PROPERTY

This park has been identified as a necessary enhancement to the McKinleyville community through a series of Public Meetings held in 2007. In April 2007 the MCSD Board encumbered \$25,000 in Quimby Inland Park Dedication Funds for the development of an interpretive trail system, informal disc golf course and a small gravel parking lot. Since then staff has continued to seek a solution for access to the property. Currently staff is working toward acquiring property adjacent to the Cochran water tank site which will provide an access point and a location for a small parking lot. The

development of this property is dependent upon access, which would be contingent on the purchase of the property adjacent to the Cochran tanks Site.

Staff will continue to seek funding sources for planning and development and intends to have funding options available for presentation to the MCSD Board in 2018, as well as a development plan in 2019-2020.

#### **4.3 WASHINGTON AVE PROPERTY**

This 3.10-acre property was purchased in 2013. While there are no immediate plans for park development, the Board has expressed interest in creating access so that it will be available for the community to use as open space.

Invasive Scotch broom plants have been removed. Parks staff continues to keep the property mowed on an approximately quarterly basis.

There is a possibility that Staff may be working with the BMX community and USA BMX to evaluate the feasibility of building a BMX Bike Track at the location. If the location is suitable for a BMX Bike Track, staff will ask the Recreation Advisory Committee to make a recommendation to the Board.

#### **4.4 COMMUNITY FOREST**

The McKinleyville Area Plan has identified the importance of a community forest in McKinleyville. Property has been identified for the purposes of a McKinleyville Community Forest. Acquisition of property is dependent upon adequate funding for not only acquisition but also development and ongoing maintenance.

Staff will continue discussions with stakeholders and pursue grant funding during this planning period.



#### **4.5 MAD RIVER PROPERTIES**

Staff will consider environmental requirements for access development, seek recommendation from the Recreation Advisory Committee followed by Board approval and then pursue funding for creating adequate public access.

This property has been identified as having recreational potential and staff will seek funding in the form of grants and donations for future development.

#### **4.6 STANDARDS & SPECIFICATIONS: OSMZ/PARKS**

Standards and Specifications for parks, facilities and open space maintenance zones will provide a planning document for these amenities. The goal for completion is in FY 2018/19.

The priority for completion of this project has been changed but will be completed in the proposed time frame.

Once the document is completed, it will be brought to the Board for approval.

#### **4.7 MAINTENANCE STANDARDS**

The Board and members of the community have placed a priority on continuing a high standard of maintenance for our parks and facilities. Management will implement this priority by evaluating staffing levels and continuing employee training opportunities.

Staff is working to draft written Maintenance Standards and Operating Procedures which will serve as a guiding document for staff, the Board and community.

#### **4.8 ANNUAL COST BENEFIT ANALYSIS OPEN SPACE ZONES (OSMZ)**

Staff has developed an efficient method for tracking time and material for each specific OSMZ. This information will be used to help manage time spent and calculate time needed for each zone. The data will be reviewed annually which will set the schedule for the following year.

**4.9 ANNUAL COST BENEFIT ANALYSIS PROGRAMS**

Staff will analyze participation, revenue and expense data for all programs to determine best practices in program offerings and development. Data will be reviewed on a quarterly basis throughout each year so that decisions for changes can be made annually.

**4.10 UPDATE PARKS AND RECREATION MASTER PLAN**

The Parks and Recreation Master Plan is updated every 5 years as necessary or determined by development. It is a living document intended to guide priorities and decisions for the Parks and Recreation opportunities in the community.

Staff is currently working with the Recreation Advisory Committee to update the Master Plan, last updated in 2012. Community input and data was collected throughout 2017 and the Plan will be finalized by December 2018.

## 5.0 PARTNERSHIPS

**Objective:** *Our objective is to foster beneficial relationships to accomplish the broad, long-term strategies of the District.*

**Strategy:** *We will do this by embracing strategic ties with other organizations and agencies, working closely with regulators, supporting a deliberate legislative agenda and participating in professional associations.*

### 5.1 FOSTER REGIONAL COOPERATION

The infrastructure of the District is dependent on the interties of other agencies, i.e.; the County, surrounding city governments and special districts. It is through a combined effort that the services needed by our community are effectively and economically delivered. These relationships are built on our dependency upon inter-agency cooperation. As MCSD moves forward, the District must maintain and seek out additional areas of cooperation. This is critical to our continued growth and commitment of service. We will continue participating in Humboldt Bay Municipal Water District (HBMWD) Municipal water customer group meetings as well as in the Humboldt County Emergency Operations Plan (EOP) through interoperability and mutual aid agreements. District management will continue to meet with Humboldt County Board of Supervisors and with Humboldt County Sheriff Department and Arcata Fire Protection District. We will work to improve coordination with the Humboldt County Planning and Public Works Departments and foster an environment where elected officials from Arcata and McKinleyville can meet to discuss shared responsibilities. Additionally, we will continue partnerships that benefit MCSD by providing labor and project support, such as with SWAP, California Conservation Corps, Service Clubs, McKinleyville Family Resource Center, Eagle Scouts, etc.

**5.2 IMPROVE POLITICAL TIES – COUNTY SUPERVISORS, STATE LEGISLATURE, FEDERAL LEGISLATURE**

The political ties present and available to MCSD are intertwined in the financial resources and support necessary to maintain existing infrastructure and services to the community. As demands are being met, these ties are daily nodes of information about additional resources available on a larger scale. As our political partners become aware of grants, financial resources or other projects that are beneficial to the District, our relationships with them gains importance.

It is critical to continue to contact and educate each organization in order to make them aware or enable them to provide valuable information and conduits for access to these resources. We will continue to seek inclusion in Humboldt County Association of Governments (HCAOG) either directly, or through Joint Powers Association (JPA) or through committee membership. Additionally, we will continue to participate with State level organizations, including Special Districts Risk Management Authority (SDRMA), California Special Districts Association (CSDA), California Water Environmental Association (CWEA), Association of California Water Agencies (ACWA), the State Water Resources Control Board (SWRCB) and the California Parks & Recreation Society (CPRS). We will also monitor opportunities for inclusion in other organizations that will increase the Districts political influence.

In addition to maintaining and nurturing ties with associations and groups, it is also important to continue to work closely with our local, state and federal government representatives. We will maintain those relationships with current positions and reach out to foster new relationships with newly elected officials. It is our goal to meet with these officials, at minimum, bi-annually or as opportunities present themselves, more frequently.

### **5.3 PARTICIPATE WITH COMMUNITY GROUPS, VOLUNTEER GROUPS AND PROFESSIONAL ASSOCIATIONS**

It is important to participate with local groups representing various constituents in order to achieve and deliver services needed or seen as needed by the local community. Our relationships today foster cooperation and maintain links to our community. It is important to embrace these in the future as the community changes and demands different services or approaches to serving its needs. Local leaders provide access to the heartbeat of the community and the District will collaborate and lead where necessary in leveraging those relationships. They include, but are not limited to:

- Humboldt Area Foundation
- Kiwanis Club of McKinleyville
- McKinleyville Area Fund
- Mad River Rotary Club
- Humboldt Sponsors
- Boy Scouts/Girl Scouts of America
- California Conservation Corps
- Headwaters Fund
- Moose Lodge
- McKinleyville Chamber of Commerce
- American Red Cross
- Humboldt County Probation Department
- Soroptimist Club
- Humboldt Regional Occupation Program
- McKinleyville Organizing Committee
- McKinleyville Family Resource Center
- Youth Advisory Council
- Boys & Girls Club of the Redwoods
- McKinleyville Land Trust
- McKinleyville Municipal Advisory Committee

#### **5.4 PARTICIPATE IN CSDA LOCAL CHAPTER**

During 2017 the GM worked with other local California Special District members to establish a CSDA Chapter in Humboldt County. By-laws and an affiliation agreement are pending approval by the CSDA Board of Directors. This effort will continue in 2018 with election of officers and scheduling of regular quarterly meetings.

## 6.0 PERSONNEL/ORGANIZATION

**Objective:** *The objective is to sustain a motivated, high quality and efficient workforce for an adaptable organization.*

**Strategy:** *We will do this by utilizing sound policies and personnel practices, offering competitive compensation and benefits, providing opportunities for training, development and professional growth and ensuring a safe and secure workplace.*

### 6.1 EMPLOYEE RETENTION

To ensure the District remains a desirable place to work and is thereby able to recruit and retain a high-performing workforce is a high priority. We will have periodic studies done to determine appropriate staffing levels, compensation and benefit competitiveness relative to local and regional labor markets. We will structure the salary schedule and professional growth opportunities to allow employees to see a clear and attainable career path at MCSD.

In order to attract and retain the best talent, we will provide opportunities for employees to enhance their job skills and knowledge in their career field. It is essential to offer opportunities for employees to be evaluated and recognized for superior job performance and rewarded for submitting valuable suggestions for improving business practices.

### 6.2 TRAINING AND DEVELOPMENT

Given the size of our District workforce, it is important that our staff be well trained in multiple job duties. Individual Development Plan reviews will continue to be done annually in order to ensure that the District can meet the regulatory requirements and provide excellent customer service. Employees will be encouraged to train in related disciplines that will meet District needs.

Cross training plans will continue to be provided to increase knowledge and skills within each job function, and development of a succession plan will ensure continuity of operation in the event of a staffing crisis.



Development of a Succession Plan started in earnest in 2017. Staff began with the GM and Department heads and will continue with other critical positions. The plan will also include steps necessary for a planned or unplanned vacancy by the GM.

### **6.3 EMPLOYEE COMMUNICATION**

Effective communication is essential to the functioning of the District and to productive management/employee relations. To facilitate improvements to employee communication we maintain and follow a current Organizational Chart; hold regularly scheduled staff and management meetings; maintain and update the current Employee Handbook and Supervisors' Manual through regular legal and management review; and provide multiple avenues and informal channels of communication.

### **6.4 EMPLOYEE SAFETY PROGRAM**

A safe working environment is a number one priority for the District. This will be accomplished by holding regularly scheduled tailgate safety meetings and administrative safety meetings. Participation in SDRMA's annual safety audits along with requesting annual site visits from OSHA for educational and compliance purposes; conducting regularly scheduled safety training; monthly safety inspections of all facilities, playgrounds and parks; weekly safety inspections of all equipment and vehicles are all essential elements in providing a safe working environment.

### **6.5 EVALUATION AND PERFORMANCE MANAGEMENT PROGRAM**

High quality and ongoing staff evaluations are key to providing feedback and fostering excellent employee performance. This will be accomplished by requiring Annual Performance Evaluations for all staff and conducting 360 evaluations for the General Manager. 360 evaluations may be considered for Department Heads and all other supervisory positions.

## 7.0 ADMINISTRATIVE MANAGEMENT

**Objective:** *The objective is to ensure efficient and ethical governance and sound management of the District.*

**Strategy:** *We will accomplish this by proactively managing organizational knowledge, being responsive, consistent and accountable to our public, following an effective self-assessment policy while adapting the management best practices necessary to support the evolving needs of the organization.*

### 7.1 DISTRICT POLICIES AND PROCEDURES

The current rules and regulations of the District provide a solid basis of operation. Additional demands of the community we serve, emerging regulations, and/or Board procedural or policy desires will require continued strategic development and maintenance of operating guidelines. These inform, educate and moderate the activities of the staff, community and partners of the District. We will continue the practice of regular review and update of the Rules and Regulations. Additionally, the Board Secretary, who is currently designated to document changes and insure timely and accurate reporting of the changes, will make sure that we comply and are up to date with all required policies and procedures.

In 2016, the Board had requested that the General Manager begin a proactive effort to control the escalation of employee benefits costs. A policy proposal will be brought to the Board for discussion and action, that will allow the District to address the long-term uncertainty of health insurance benefits currently offered to our employees due to market volatility and other extraneous circumstances.

As the District's reserves recover and increase under present rate structures, the Board and General Manager will need to develop broad investment policy guidelines for the appropriate investment of various reserve funds. The Board may designate an existing committee, such as the Audit Committee, to address this issue or they may create a separate Finance or Investment Committee.

During Calendar Year 2017 the Board and General Manager created a Committee Responsibilities Section for the Board Policy Manual that will contain guiding principles that the Committees may reference for the exaction of their duties.

In 2018 the Board and GM will review a 3- 5 year budget that considers long term impacts by the mandated minimum wage laws and consider a Wage and Benefit Escalation Policy.

## **7.2 RECORDS RETENTION**

Legal requirements for record retention policies are established on a statewide basis. Adherence to these pre-established minimum standards and accepted guidelines is mandatory for record retention. Records retention policy will be reviewed by District legal counsel on a regular basis to maintain compliance.

Document management software has been installed, staff has been trained and historical records in the District Office have been scanned. Historical records held in the archives will be scanned as the District has staff capacity. Current documents are being scanned in as they are created. This program has added a level of technological redundancy and information security to our present retention and filing system. The ability to identify and retrieve data remains of primary importance.

New policies are being developed as MCSD grows in service to its citizens and as it coordinates these services with sister districts and agencies. As additional policies are necessary, management will update the rules and regulations manual in place. This responsibility for development lies within each department: yet will be coordinated through administration with proper Board approval. At present, all departments access these rules and regulations through the "P" drive; changes are presented by staff to the Board, approved and updated as required.

### 7.3 CUSTOMER SERVICE

The District recognizes the importance of customer service and strives to serve all elements to the best of its ability through ongoing training and adaptation to the evolving needs of the community.

As such, MCSD is constantly training staff in updated methods of customer service. This includes identification of service improvements and increased use of technology to deliver service to customers at the highest level. Staff is monitored through HR in their development and training in support of these customer service objectives. Additional activities on to customer feedback, community surveys and opportunities for public comment are part of this focused effort.

### 7.4 BUILD PUBLIC INFORMATION PROGRAM

The continued use and further development of the Public Information Program is designed to communicate activities to the general populace. These programs bring the community into the business of the District allowing a conduit of information between the District and the public. The District believes strongly in informing citizens of current activities, seeking support for those activities and maintaining the public's access to information. The following resources and points of communication are being developed to further these efforts.

- **Website:** Provides an avenue for updating and distributing topical information in an economical and accessible manner.
- **Public Service Announcements (PSA):** Emphasizes important topics and events affecting each individual served in the community.
- **Newsletter:** Highlights events affecting the community and provides input from the community on the heartbeat of the District.
- **Recreational Activity Guide:** Allows for participation of the community in local and MCSD sponsored events throughout the year.
- **Flyers:** Brings awareness to special events affecting and promoting the District.

- **Posting Notices:** Keeps the populace aware of important meetings, events and public meetings, which are avenues for communication.
- **Development of social networking resources:** Communicates vital information in a timely manner to a new generation of District customers.

## 7.5 BOARD DEVELOPMENT

As new members are added to the Board, it is important to familiarize them with the laws governing Board management and policies including new Board member orientation procedures.

Additionally, experienced Board members are encouraged to seek additional training throughout the year to promote ethical and transparent government at the local level. This begins with the mandatory AB1234 training in ethics. Board members will also be encouraged to participate in professional development conferences or other trainings at least bi-annually.

Depending on participation in other agencies Boards and committees, each Board member is active in conference attendance and District representation. New ideas are constantly being brought back from these events increasing and promoting awareness of new and better methods of providing service to the District. Regular attendance at Board meetings and appointment to other agency's committees is emphasized.

As new members are added to the Board, it is important to familiarize them with the laws governing Board management and policies. These are provided in the Board manual, in training on the Brown Act and Public Records Act. Legal representatives are present to guide and instruct the Board as needed.

- Formalized Board/General Manager communication plan
- Periodically update the new Board Member Orientation Manual

**7.6 ANNUAL REVIEW AND UPDATE OF THE DISTRICT'S STRATEGIC PLAN**

It is important that each year the Board and Management work together to review and update this strategic plan. Updating annually assures that the plan remains current, that specific strategies and tactics remain viable, that our prioritization is still on-track and that we together have clarity for our strategy year after year. We will review and update the strategic plan each year in January or February in a workshop format, in conjunction with the annual budgeting process and is proceeding with a comprehensive five year update.

**7.7 EMERGENCY PREPAREDNESS AND RESPONSE**

Participation in local Operational Area cooperative group, Humboldt County Hazard Mitigation Plan, MCSD's Emergency Operations Plan, regularly scheduled training including set-up and "tabletop exercises" and National Incident Management Systems (NIMS)/Standardized Emergency Management Systems (SEMS) training included in Individual Development Plans.

**7.8 ACHIEVE BEST PRACTICES DISTINCTION AWARDS**

During the strategic planning process, the Board recognized the achievement of a best practices award as a goal. There are many types of Excellence Awards available to Special Districts from various regional, state, or national professional groups including financial, management, operational, and others. Over the range of this strategic plan, we will review available awards and position the District to achieve a public acknowledgement of excellence for McKinleyville.

The District has been awarded both the District Transparency Certificate of Excellence and the District of Distinction Awards by the Special District Leadership Foundation (SDLF). The District will continue to work towards re-certification of these awards on a bi-annual basis.

Each Director has the opportunity to achieve the Recognition in Special District Governance Certificate. The District can achieve Silver Recognition by SDLF when a

majority of the Board holds this certificate and Gold Recognition when the entire Board has their certificates. As of April of 2015, MCSD is a Silver Certificate holder.

## **7.9 EXPLORE OPTIONS FOR INCREASES IN ENERGY EFFICIENCY AND ALTERNATIVE ENERGY SOURCES**

Staff was directed to develop as soon as possible, but not later than five years, a comprehensive solar plan to profitably power all District electrical needs. The plan should have as components:

- Detailed implementation steps
- Rough price estimates of different options
- Feasibility results for the District, such as the sewer plant, recreational park areas and public buildings as sites
- Capital needs, a budgeting plan and possible partnership need to be specified

The General Manager will report back to the Board annually, at a minimum, on work progress.

While the current direction is for a comprehensive plan, and ultimately a Climate Action Plan, if such plan shall not be considered feasible in a timely manner then serial or smaller solar projects should be reviewed.

Given the worldwide, U.S. and California changes to energy sources and support of different types of energy, the Board and the General Manager reserve the right to bring the solar strategic plan back to the Board.

Upon completion of the WWMF Improvement Project Staff will collect empirical energy demand data that will be used to determine the size for generation and storage at that facility. There is a potential to grant fund a portion of this project, up to 75%. Our consultants recommend approximately one year of data prior to sizing for storage, which will fit in with grant funding timelines.

During the current planning horizon staff will be exploring the potential of a solar generation project. The revenue from this project could have multiple uses.

#### **7.10 PLANNING AND LATENT POWERS**

In an effort to continue to provide services within MCSD's sphere of influence the District will review the potential annexation of areas that are currently provided water or are within a natural boundary. Annual reviews of MCSD's boundaries would be encouraged. Efforts to maintain continuity with the requirements of LAFCo will take precedence.

#### **7.11 INTEGRATED PEST MANAGEMENT PLAN (IPM)**

Staff is working to develop an IPM for the past two years. Information was posted on the MCSD website asking community members to provide input. A team of staff was formed to review and incorporate comments from the community. Comments were evaluated and a revised plan was presented to the Board. Staff has completed the draft Guide to Reduced-risk Pesticide List and will be bringing it to the Board for review. Staff is currently working on a matrix to include costs to maintain facilities using different techniques.



## 8.0 FINANCES

**Objective:** *Our objective is to manage public funds to assure financial stability, prudent fiscal management and demonstrate responsible stewardship.*

**Strategy:** *The District will ensure that adequate financial resources are available to fund current and future demands, utilizing funds to maximize value to the customer.*

### 8.1 RESERVE POLICY IMPLEMENTATION

The Board has set a goal to maintain reserve funding according to the Board-approved Reserve Policy. To achieve that goal, management will analyze and monitor capital inflows and outflows and will control costs as much as possible in order to run operating surpluses in all Funds sufficient to offset losses accumulated from prior years. The end goal is to have fully funded reserves in all Board designated categories. We will also continue to monitor State policies that might endanger the District's critical strategic reserves and bring Reserve Policy adjustments to the Board for action to mitigate the risk of future State seizures of funding.

### 8.2 BUDGET DEVELOPMENT AND COMMUNICATION

The budgeting process is one of the most important financial planning tools available to the District. It is the foundation on which our strategy rests. Without adequate budget information and financial feedback, the Board and District management cannot make sound, fiscally responsible decisions about the starting, sequencing, or completion of projects and programs.

**8.2.1** Our budget process will continue to be collaborative, with input from the Board for overall strategy, and from the General Manager and all Department Heads for operational accuracy. It will reflect projects, plans, and actions referenced to this strategic plan.

**8.2.2** Our budget process will continue to incorporate past historical trends, current economic and demographic trends in the community, local and State governmental and regulatory environments, and annual operational forecasts.

**8.2.3** The District budget will be presented to the board in Draft form each year in the months prior to official adoption so the Board can ensure adequate review and alignment with strategic objectives.

### **8.3 CAPITAL BUDGET MANAGEMENT**

To facilitate long range strategic planning, the rolling 20-year Capital Improvement Plan Budget will be presented annually to the Board with a 10-year horizon for each Fund as part of the annual budgeting process. Each element in the Capital Budget shall have a funding notation – an estimate or assumption about where the funding for that budget item will be found. Some types of items have a generous grant environment, while others will need to be funded with long-term debt, or directly from Reserves or operating funds. This will allow adequate review of operational cash flow impacts and ensure that capital acquisitions are in alignment with strategic objectives.

### **8.4 DEVELOPMENT OF FINANCIAL MANAGEMENT SYSTEM**

While the current financial management system used by the District is robust in some areas like utility billing, it is weak in others such as data collection, trend tracking and reporting. Over the next five years, all components of the system, both manual and computerized, will be reviewed for efficiency and functionality and upgraded, supplemented, or replaced as necessary. Upgrade implementation will be timed to minimize disruption to overall District operations. Planned replacements of large software components will be included in the Capital Budget for review and approval by the Board.

### **8.5 FINANCIAL AUDIT**

A financial audit will be performed annually after the close of the fiscal year to ensure that District finances are compliant with Generally Accepted Accounting Principles (GAAP), the Government Accounting Standards Board (GASB) and other regulatory or lender requirements, and to provide additional perspective on internal controls and financial processes.

## **8.6 INVESTMENT POLICY**

As the District recovers reserves and receives reimbursements from capital project loans and grants, the influx of operating cash requires a sound, clearly-stated investment policy. The Board sets these high-level policies and will provide oversight. The policy itself provides investment objectives, risk-tolerance, legal constraints, and a general process for overall management and monitoring.

## **8.7 RATE STUDIES**

To maintain adequate revenues for water and sewer operation frequent rate analysis should be conducted to smooth the necessary adjustment of rates. Per Proposition 218, fee adjustments must be reauthorized every five years. The current Water Rate Study authorizes these adjustments every January 1, from 2014 through 2018. Concurrently the Sewer Rate Study period authorizes adjustments every July 1, from 2015 through 2019.

## **TABLE 1 - Strategic Plan Matrix**

The following pages contain the matrix model for the strategic plan which includes the associated strategic element number, project name, project manager, current fiscal year capital improvement dollars budgeted, five years of project plans, an estimated completion date, total project completion percentage and any associated notations.

STRATEGIC PLAN SECTION#	PROJECT NAME	PROJECT MANAGER	CURR. FY CIP\$	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022	EST. COMPLETION	TOTAL PROJECT % COMPLETE	STATUS/COMMENTS
1.0 Water											
1.1	Maintenance Programs	OD	\$ -	Valve exercising/fire hydrant insp. and exercise	Valve exercising/fire hydrant insp. and exercise	Valve exercising/fire hydrant insp. and exercise	Valve exercising/fire hydrant insp. and exercise	Valve exercising/fire hydrant insp. and exercise			
1.2	Water Storage Tank Project	OD	\$ 200,000.00	Pursue grant funding/property purchased	Design & build	Build	Place in operation	Place in operation	2020	5%	Geotech complete and complete negotiations
1.3	Emergency Water Crossing	OD	n/a	Test SOP					2017	99%	Waiting for Arcata to add comments
1.4	Emergency Water Supply	GM/OD	\$ 50,000.00	Groundwater Mgmt Plan & Test Wells	Groundwater Mgmt Plan	Design	Emergency Source implementation		2020	10%	
1.5	Digital Control Upgrade	OD	\$ 150,000.00	Install Radios at each site and place into service.					2018	20%	Under contract
1.6	Water Main Rehab and Replacement	OD	\$ 100,000.00	Build up reserves and determine workforce increase or contract work	Build up reserves, prioritize areas of concern	Start rehab and replacement	Start rehab and replacement			20%	Reserves will be built up to replace water mains when needed
1.7	Radio Read Meters	OD	\$ 200,000.00	Phase 3 - Testing of larger meters	Annual replacements	Annual replacements	Annual replacements		2017	98%	Will be completed this FY
1.8	F/H upgrade and installation in commercial area	OD	\$ 7,000.00	Install fire hydrants where requested by the fire department and retrofit dry barrel hydrants with wet barrel					2018	40%	Cost share with Fire Department
1.9	Cochran Emergency Generator Replacement	OD	\$ 50,000.00	Design & implementation					2017	0%	
2.0 Wastewater											
2.1	20-yr Facility Plan	GM & Board	n/a	Annual review	Annual review	Annual review	Annual review	Annual review		100%	
2.2	WWMF Improvement Proj/Biosolids Maint./NPDES Update	GM/OD	\$ 200,000.00	Create Biosolids Mgmt Plan	Implement Biosolids Mgmt Plan	Sludge depths (Biosolids Mgmt Plan)	Sludge depths (Biosolids Mgmt Plan)	Sludge depths (Biosolids Mgmt Plan)	2017	90%	Upgrade completed. Implement biosolids management plan
2.3	Collection Sys Upgrades	OD	\$ 10,000.00	Implement tech memo that will be the result of phase 3 of the sewer mainline rehab plan & upgrade monitor capacity of all 3 basin crossings	Design for Thiel crossing	Construct of Thiel crossing	Monitor capacity of all 3 basins			20%	This will be scheduled and completed when build-out requires upgrade
2.4	Sewer Main Rehab and Replacement	OD	\$ 90,000.00	Implement tech memo for main line rehab & upgrade monitor capacity of all 3 basin crossings	Repair I&I when found, prioritize pipe replacement plan	Repair I&I when found, prioritize pipe replacement plan	Repair I&I when found, implement pipe replacement plan			20%	There is no completion date to this maintenance. I&I will be repaired when found and a plan for replacing pipe will be developed

STRATEGIC PLAN SECTION#	PROJECT NAME	PROJECT MANAGER	CURR. FY CIP\$	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022	EST. COMPLETION	TOTAL PROJECT % COMPLETE	STATUS/COMMENTS
2.5	Digital Control Upgrade	OD	\$ 150,000.00	Install Radios at each site and place into service.					2017	25%	Under contract
2.6	Sewer Lift Stn Gen. Upgrades	OD	\$ 56,000.00	Grant funding has been secured and installation of both generators will be completed.					2017	20%	Accepting RFQs for design
2.7	Pre-Treatment Program	OD	n/a	Issue & administer grease trap permits/Update Sewer Use Ordinance on local limits to reflect capabilities of new process	Administering pre-treatment program/annual testing	Administering pre-treatment program/annual testing	Administering pre-treatment program/annual testing	Administering pre-treatment program/annual testing	Ongoing		
2.8	I&I Prevention	OD	n/a	Annually insp. and flow testing	Annually insp. and flow testing	Annually insp. and flow testing	Annually insp. and flow testing	Annually insp. and flow testing	Ongoing		Inspected and repaired annually
2.9	Reclamation Site Expansion and Upgrade	OD	\$ 5,000.00	Expand reclamation area/explore purchasing more property and implement findings of bio-filtration pilot study	Negotiate purchase of more property	Finalize procurement of reclamation site	Design irrigation system	Install/implement design	2021	20%	Pilot project placed in service
2.10	Percolation site decommissioning	GM/OD	n/a	Pursue grant funding for permitting	Pursue grant funding for construction				2017	25%	Fish & Wildlife and Coastal Conservancy Grant
3.0 Streetlights											
3.1	Maintenance Programs	OD	n/a	Pole inspections on 10-year rotation, due: FY2022							Poles will be inspected for rot every 10 years. Completed 6/11
4.0 Parks & Recreation											
4.1	Teen & Community Center	GM/RD	\$ -	Continue partnership with Boys & Girls Club of the Redwoods					2017	100%	
4.2	Hewitt Ranch Park	OD/RD	to be determined	Pursue access from Cochran Rd.	Funding options brought to Board & consider environmental planning contingent on tank property purchase	Planning for parking area/create plan for development	Planning for parking area/create plan for development	Planning for programming & use			This project is dependent on access from Cochran Road and tank site development
4.3	Washington Ave. Property	GM/OD/RD	to be determined	Possible park development (depending on funding)	Possible park development (depending on funding)	Possible park development (depending on funding)	Possible park development (depending on funding)	Possible park development (depending on funding)			Invasives have been removed, staff continues to mow quarterly
4.4	Community Forest	GM	to be determined	Property has been identified & grant funding pursued	Continue discussions with local stakeholders and pursue grant funding	Pursue property acquisition and analyze revenue and expense	Pursue property acquisition		2020		Working with TPL for grant funding

STRATEGIC PLAN SECTION#	PROJECT NAME	PROJECT MANAGER	CURR. FY CIP\$	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022	EST. COMPLETION	TOTAL PROJECT % COMPLETE	STATUS/COMMENTS
4.5	Mad River Property	GM/OD/RD	to be determined	Consider environmental requirements, get recommendation from RAC, seek Board approval/create access/pursue funding	Upgrade access	Develop existing trails	Develop existing trails	Open for public use	2021	5%	Upgrade access/Pursue funding
4.6	Standards & Specs for OSMZ/Parks	GM/OD	n/a	Standards and Specifications being developed for all parks, facilities and open space maintenance zones	Policy finalized and implemented				2019	25%	Seek priority from Board related to standards and specifications being developed
4.7	Maintenance Standards	OD	n/a	Develop written SOP's	Seek Board approval, staff training	Staff training	Staff training		2020	25%	
4.8	Annual Cost Benefit Analysis OSMZ	OD	n/a	Conduct annual review	Conduct annual review	Conduct annual review	Conduct annual review	Conduct annual review		Ongoing	
4.9	Annual Cost Benefit Analysis Programs	RD	n/a	Conduct annual review	Conduct annual review	Conduct annual review	Conduct annual review	Conduct annual review		Ongoing	
4.10	Update Parks & Recreation Master Plan	RD	n/a	Complete Community Survey and complete plan	Conduct annual review	Conduct annual review	Conduct annual review	Update process	2018	15%	Update every 5 years
5.0 Partnerships											
5.1	Foster Regional Cooperation	GM & Board	n/a	Meet with all five Humboldt County Supervisors	Quarterly meetings with 5th District Supervisor	Meet with all five Humboldt County Supervisors	Quarterly meetings with 5th District Supervisor	Meet with all five Humboldt County Supervisors		Ongoing	Continue efforts to gain a seat on the TAC
5.2	Improve Political Ties	GM & Board	n/a	Initiate bi-annual meetings w/new State Senator & Assembly person	Bi-annual meetings with State Representatives	Initiate bi-annual meetings w/new State Senator & Assembly person	Bi-annual meetings with State Representatives	Initiate bi-annual meetings w/new State Senator & Assembly person		Ongoing	Monitor the elections and make contact with newly elected representatives
5.3	Participate in Community Groups	GM /RD	n/a	Ongoing community outreach	Ongoing community outreach	Ongoing community outreach	Ongoing community outreach	Ongoing community outreach		Ongoing	Continue to participate with local groups representing various constituents
5.4	Participate in CSDA Local Chapter	GM & Board	n/a	Continue participation in setting up chapter	Continue attending chapter meetings	Continue attending chapter meetings	Continue attending chapter meetings	Continue attending chapter meetings		Ongoing	
6.0 Personnel/Organization											
6.1	Employee Retention	GM/Dept. Heads	n/a	Complete scheduled survey of salary/benefits due in FY 2017/18	Continue to foster healthy work environment & coaching	Continue to foster healthy work environment & coaching	Continue to foster healthy work environment & coaching	Conduct annual review		Ongoing	Next scheduled salary survey due in FY 2022/23
6.2	Training & Development	GM/Admin Assist.	n/a	Succession Plan completed & implemented/Annual Review & Revision	Annual review & revision	Annual review & revision	Annual review & revision	Annual review & revision		Ongoing	Finalize GM & Dept Head Succession Plans
6.3	Employee Communication	GM/Dept. Heads	n/a	Complete review of Supervisors Manual and Employee Handbook	Next scheduled review Employee Handbook	Next scheduled reviews of Supervisors Manual & Employee Handbook	Next scheduled review Employee Handbook	Next scheduled reviews of Supervisors Manual & Employee Handbook		Ongoing	



STRATEGIC PLAN SECTION#	PROJECT NAME	PROJECT MANAGER	CURR. FY CIP\$	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022	EST. COMPLETION	TOTAL PROJECT % COMPLETE	STATUS/COMMENTS
6.4	Employee Safety Program	GM/OD	n/a	Annual safety audit & training/Initiate OSHA consultation for corp yard and water system	Initiate OSHA consultation for sewer system & WWMF	Annual safety audit & training	Annual safety audit & training	Annual safety audit & training		Ongoing	
6.5	Eval & Performance Mgmt	GM/Dept. Heads	n/a	Annual evaluations scheduled per hire dates	Annual evaluations scheduled per hire dates	Annual evaluations scheduled per hire dates	Annual evaluations scheduled per hire dates	Annual evaluations scheduled per hire dates		Ongoing	

7.0 Administrative Management											
7.1	District Policies & Procedures	GM & Board	n/a	Annual review Board Policy Manual/ development of Benefit Escalation Policy/Inclusion of committee responsibilities	Annual review	Annual review	Annual review	Annual review		Ongoing	Annual reviews are done for Conflict of Interest.
7.2	Records Retention	Admin Assist	n/a	Review/update Records Retention Policy & continue management of current documents	Review/update Records Retention Policy & continue management of current documents	Continue management of current documents	Continue management of current documents	Continue management of current documents	2017	100%	Ongoing
7.3	Customer Service	GM/Dept. Heads	n/a	Ongoing monitoring & training	Ongoing monitoring & training	Ongoing monitoring & training	Ongoing monitoring & training	Ongoing monitoring & training		Ongoing	
7.4	Continue to build upon Public Information Program	RD	n/a	Website, newsletter, PSA's, social networking	Website, newsletter, PSA's, social networking	Website, newsletter, PSA's, social networking	Website, newsletter, PSA's, social networking	Website, newsletter, PSA's, social networking		Ongoing	
7.5	Board Development Policy	GM & Board	n/a	Ongoing annual AB 1234 Ethics training	Ongoing annual AB 1234 Ethics training	Ongoing annual AB 1234 Ethics training	Ongoing annual AB 1234 Ethics training	Ongoing annual AB 1234 Ethics training		Ongoing	Additional continuing education courses encouraged to promote ethical and transparent government
7.6	Review/Update Strategic Plan	GM & Board	n/a	5 Year & Annual review & revision	Annual review & revision	Annual review & revision	Annual review & revision	Annual review & revision		Ongoing	When do we think the Board will approve this?
7.7	Emergency Preparedness and Response	GM & Dept. Heads	n/a	Conduct table top exercise/training and review EOP	Conduct table top exercise/training and review EOP	Conduct table top exercise/training and review EOP	Conduct table top exercise/training and review EOP	Conduct table top exercise/training and review EOP		50%	EOP Manual Update Complete
7.8	Achieve Best Practices Awards	GM & Board & Board Secretary	n/a	Achieve 6 hours of governance training as required	Re-apply for the SDLF "District of Distinction" accreditation program & re-apply for Transparency Certificate	Achieve 6 hours of governance training as required	Re-apply for the SDLF "District of Distinction" accreditation program & re-apply for Transparency Certificate	Achieve 6 hours of governance training as required		Ongoing	One Board Member still needs Governance Certificate
7.9	Explore Alternative Energy Options	GM & Board	\$100,000.00	Make decision to develop solar energy at WWMF and energy efficiency grant opportunities/Bring to Board a proposal for a solar power generation project	Continue to explore opportunities for alternative energy and storage	Complete Climate Action Plan	Implement climate change action plan	Continue to explore opportunities for energy efficiency and reduce reliance on fossil fuel		Ongoing	Continue working towards energy independence

STRATEGIC PLAN SECTION#	PROJECT NAME	PROJECT MANAGER	CURR. FY CIP\$	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022	EST. COMPLE- TION	TOTAL PROJECT % COMPLETE	STATUS/COMMENTS
7.10	Planning and Latent Powers	GM & Board	n/a	Propose phasing work to allow Board to consider the value of each step related to cost						Ongoing	Review and report to Board annually
7.11	Integrated Pest Mgmt Plan	GM/OD	n/a	Annual Review, monitoring and report	Annual Review, monitoring and report	Annual Review, monitoring and report	Annual Review, monitoring and report	Annual Review, monitoring and report		Ongoing	Review and update every 5 years
8.0 Finance											
8.1	Reserve Policy Implementation	GM/FD	n/a	Review & monitor	Review & monitor	Review & monitor	Review & monitor			Ongoing	Review and Update as required
8.2	Budget Development	FD	n/a	Review & adjust	Review & adjust	Review & adjust	Review & adjust		FY2017-18 @ 100%	Ongoing	
8.3	Capital Budget Mgmt	GM/FD	n/a	Review & adjust	Review & adjust	Review & adjust	Review & adjust		FY2017-18 @ 100%	Ongoing	
8.4	Development of Financial Mgmt System	GM/FD	n/a	RFP, choose vendor, lay out implementation plan	Begin implementation	Complete implementation			2020	3%	
8.5	Financial Audit	FD	n/a	Conduct annual audit	Conduct annual audit	Conduct annual audit	3-yr RFP for audit completed		Dec-15	95%	
8.6	Investment Policy	Board, GM & FD	n/a	Develop Board Investment Oversight Committee	Research, write, & implement Investment Best Practices Policy	Review, monitor, & adjust	Review, monitor, & adjust		2019	0%	
8.7	Rate Studies	GM & Board	n/a	Water & sewer rate analysis			Capacity fee review and Prop 218			Ongoing	



# McKinleyville Community Services District

## BOARD OF DIRECTORS

December 6, 2017

TYPE OF ITEM: **ACTION**

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**ITEM: E.5**                      **Consider Adoption of Shared Set of Core Values for the Guidance of Board of Director Behavior and Action**

**PRESENTED BY:**              **Lesley Frisbee, Recreation Director**

**TYPE OF ACTION:**          **Roll Call Vote**

### **Recommendation:**

Staff recommends that the Board complete the process of establishing a set of shared values that began on November 3, 2017 at the Board Retreat, consider the information provided, discuss, take public comment, air questions and adopt the set of shared core values as defined.

### **Discussion:**

At the Board Retreat on November 3, 2017 the Board of Directors began the process of developing a set of shared core values including definitions, behaviors and actions which would serve to guide the work of the Board in service to the District. Due to time constraints that process was not completed and was scheduled to be completed at the December meeting of the Board.

The last step to completing the set of shared core values is to define actions (individual, board, and organizational) that will enliven and grow the values selected and defined at the November 3<sup>rd</sup> retreat which can be reviewed in **Attachment 1**.

### **Alternatives:**

Staff analysis consists of the following potential alternative

- Take No Action

### **Fiscal Analysis:**

Not applicable

### **Environmental Requirements:**

Not applicable

### **Exhibits/Attachments:**

- Attachment 1 – Incomplete DRAFT Shared Values Chart of MCSD Board

VALUE	DEFINITION How do WE define this value	CULTURE (Behavior) What does this value look like when at its best?	ACTIONS TO CREATE What actions can we take to make this value grow? (as individuals, as a group, as an organization)
<b>INTEGRITY</b>	Truthfulness; Saying what you mean and doing what you say.	Trustworthy performance; Incorruptible	
<b>RESPONSIBILITY</b>	Dependable and accountable; Doing what is necessary in the best possible way and with the best possible intentions	Accepting all consequences, both Good and Bad; Adaptive Management	
<b>FAMILY</b>	Group/Unit that is not always chosen, connected by commonalities and shared experience with defined roles	Efficiency, lightheartedness, respect, listening (open eared), care for members, forgiveness, and understanding with respected leadership.	
<b>FAIRNESS</b>	Decisions based on rules, facts and circumstances	Consideration given to all facets in a consistent manner.	

*Comments for Actions from Post-its left 11/3:*

- Integrity in dialogue; non-discriminatory language (Integrity)
- Asking questions; listening; demonstrating follow through (Responsibility)
- Welcoming to all members of our community (Family)

# McKinleyville Community Services District

## BOARD OF DIRECTORS

December 6, 2017

TYPE OF ITEM: **ACTION**

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**ITEM: E.6**                      **Consider Authorization for Director Mayo to Attend the Association of California Water Agencies (ACWA) 2018 DC Conference in Washington D.C. February 27<sup>th</sup> – March 1<sup>st</sup>, 2018**

**PRESENTED BY:**              **Emily Abfalter, Board Secretary**

**TYPE OF ACTION:**           **Roll Call Vote**

### **Recommendation:**

Staff recommends that the Board review the information provided for the ACWA DC 2018 Conference, February 27 – March 1, 2018 in Washington D.C.; take public comment and consider authorization for Director Mayo to attend and for the District to pay his conference registration fees and provide per diem.

### **Discussion:**

The ACWA 2018 Washington D.C. Conference is set for February 27 – March 1, 2018 at the St. Regis Hotel in Washington D.C. Attendees will learn firsthand the priorities of Congress and the new administration; get the latest on the budget and funding for programs of interest; meet and join fellow Water Agencies to show the importance of California water issues and better develop federal legislative and regulatory strategies.

### **Alternatives:**

Staff analysis consists of the following potential alternative

- Take No Action

### **Fiscal Analysis:**

The cost for full conference registration and meals package is \$645. Meals not provided by the conference will be approximately \$134.

### **Environmental Requirements:**

Not applicable

### **Exhibits/Attachments:**

Not applicable

# McKinleyville Community Services District

## BOARD OF DIRECTORS

December 6, 2017

TYPE OF ITEM: **ACTION**

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**ITEM: E.7**                      **Consider Approval of Resolution 2017-27 Adding Appendix A, Board Direction for Committee Assignments, and Reference of the Appendix in Rule 3-4 to the Board Policy Manual**

**PRESENTED BY:**              **Emily Abfalter, Board Secretary**

**TYPE OF ACTION:**          **Roll Call**

### **Recommendation:**

Staff recommends that the Board review the information provided, take public comment, discuss, and approve Resolution 2017-27, adding Appendix A, Board Direction for Committee Assignments, and reference of the appendix in Rule 3-4 to the Board Policy Manual.

### **Discussion:**

A document was created to aide in the effort of streamlining expectations of MCSD Directors and their role on various committees while maintaining a sense of consistency. The goal being to incorporate the final version within the Board Policy Manual.

In August 2017, individual Board revisions were made to the draft in track changes and a request was made to bring the draft to the Board in meeting setting for review and discussion.

At the November 1, 2017 meeting, the Board reviewed and discussed the draft and made a couple suggestions to incorporate into the policy. Staff has made additions and presents the final draft for approval as Exhibit A of Resolution 2017-27, **Attachment 1**.

### **Alternatives:**

Staff analysis consists of the following potential alternative

- Take No Action

### **Fiscal Analysis:**

Not applicable

### **Environmental Requirements:**

Not applicable

### **Exhibits/Attachments:**

- Attachment 1 – Resolution 2017-27 with Exhibit A

**RESOLUTION 2017-27**

**A RESOLUTION OF THE BOARD OF DIRECTORS OF THE MCKINLEYVILLE  
COMMUNITY SERVICES DISTRICT ADDING APPENDIX A, BOARD DIRECTION  
FOR COMMITTEE ASSIGNMENTS, AND REFERENCE OF THE APPENDIX  
IN RULE 3-4 TO THE BOARD POLICY MANUAL**

**WHEREAS**, the Board of Directors of the McKinleyville Community Services District (MCSD) currently have the following committees:

Recreation Advisory Committee (RAC), McKinleyville Area Fund, Redwood Region Economic Development Commission (RREDC), McKinleyville Senior Center Advisory Committee, Audit, Employee Negotiations, Water Task Force, AdHoc No Drugs & Toxins Down the Drain, McKinleyville Municipal Advisory Committee (MMAC or McMAC), Cornerstone Committee, Groundwater Sustainability Committee; and

**WHEREAS**, at the beginning of each year the Board President appoints a primary and secondary Director to serve on each committee; and

**WHEREAS**, MCSD's Board Policy Manual does not currently provide direction for committee assignments; and

**WHEREAS**, providing direction for committee assignments will streamline expectations of MCSD Directors and their role on various committees while maintaining a sense of consistency; and

**WHEREAS**, on November 1, 2017 the Board reviewed and discussed the draft and requested additions have been made to meet the needs of the Board; and

**NOW, THEREFORE, BE IT RESOLVED** that the Board of Directors of the McKinleyville Community Services District does hereby approve the addition of Appendix A, Board Direction for Committee Assignments, **Exhibit A** of the Resolution, to the Board Policy Manual, along with the following reference:

**Rule 3-4: COMMITTEES** - Committees of the Board, whether standing or ad hoc, may, from time to time, be established by the President of the Board, subject to confirmation by the Board. Unless authority to perform a duty is expressly delegated by the Board to a committee, committee motions and recommendations shall be advisory to the Board. Committees shall not commit the District to any policy, act or expenditure nor may any committee direct staff to perform specific duties unless authorized by the Board. The Committee Chair is authorized to schedule committee meetings as deemed necessary and to preside at any such meeting.

Where the Board has agreed to designate a Director or Directors to serve on a non-District Committee, the President shall appoint said Directors for Board ratification.

For a detailed description of current committees along with specific Board direction, please see Appendix A.

**ADOPTED, SIGNED AND APPROVED** at a duly called meeting of the Board of Directors of the McKinleyville Community Services District on December 6, 2017 by the following polled vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

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Dennis Mayo, Board President

Attest:

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Emily Abfalter, Board Secretary

## **Appendix A**

### **Board Direction for Committee Assignments**

The Board of Directors of the McKinleyville Community Services District (MCSD) currently have eleven committees, ten of which are standing committees and one an ad-hoc committee. A standing committee is a permanent committee established for the purpose of specializing in the consideration of a particular subject area. MCSD's standing committees include, Recreation Advisory Committee, Area Fund, Redwood Region Economic Development Committee, Audit Committee, Employee Negotiations Committee, Water Task Force Committee, McKinleyville Municipal Advisory Committee, Cornerstone Committee and Groundwater Sustainability Committee. An Ad-Hoc Committee is a committee formed for a specific task or objective and dissolved after the completion of the task or achievement of the objective. MCSD's ad-hoc committee is No Drugs & Toxics Down the Drain.

#### **Recreation Advisory Committee:**

The primary purpose of the Recreation Advisory Committee (RAC) is to make recommendations to the McKinleyville Community Services District (MCSD) Board of Directors regarding plans, policies, programs, and projects relating to McKinleyville's parks, facilities, open space maintenance zones, and recreation activities.

The RAC is appointed by the Board and should include one Director who will be appointed by the Board President. An alternate Director will be selected in the event the primary Director is unable to attend a RAC meeting. Members should represent, to the extent possible, various recreational interests of the community including but not limited to business, environmental, equestrian, sports, seniors, trails and youth. The Recreation Advisory Committee meet once a month on the 3<sup>rd</sup> Thursday at 6:30pm at District's Conference Room, 1656 Sutter Road, McKinleyville. The designated Board Member should report back to the Board during the regular monthly Board of Directors meetings.

#### **Area Fund:**

The primary purpose of the McKinleyville Area Fund is to help in the decision making process to grant funds to deserving organizations and projects in the McKinleyville area. The MCSD Board President will appoint a Director to serve as a member for the McKinleyville Area Fund annually. The committee meets on an "as needed" basis. The designated Board Member should report to the Board during the regular monthly Board of Directors meetings as applicable.

#### **Redwood Region Economic Development Commission:**

The Redwood Region Economic Development Commission (RREDC) is a collaboration of Humboldt County communities dedicated to expanding economic opportunity in Humboldt County. The primary purpose of RREDC is to create opportunity and to support the growth of local businesses by leading projects of regional significance, making loans, and offering technical assistance through partnership with the North Coast Small Business Development Center.

RREDC has nineteen members and is governed by a Board of Directors of elected officials appointed by member agencies. The MCSD Board President will appoint a Director to serve as a member for RREDC annually. An alternate Director will be selected in the event the primary Director is unable to attend a RREDC meeting. The RREDC Board of Directors meet once a month on the 4<sup>th</sup> Monday at 6:30pm at the Prosperity Center, 520 E Street, Eureka. The designated Board Member should report back to the Board during the regular monthly Board of Directors meetings.

#### **McKinleyville Senior Center Advisory Committee:**

The primary purpose of the McKinleyville Senior Center Advisory Committee is to provide guidance to the McKinleyville Senior Center (MSC).

The 12-member committee is appointed by the Executive Board of the MSC and members must be Humboldt County residents who are interested in the welfare of the MSC and be of diverse occupations and experiences. The MCSD Board President will appoint a Director to serve as one of the members for the McKinleyville Senior Center Advisory Committee annually. The appointed member chairs the Advisory Committee meetings and should attend all MSC executive and regular board meetings. An alternate Director will be selected in the event the primary Director is unable to attend a meeting. The designated Board Member should report back to the Board during the regular monthly Board of Directors meetings to facilitate communications between MCSD and MSC. The committee meets quarterly in January, April, July and October at the MSC. The MSC Board of Directors meet once a month on the 4<sup>th</sup> Friday at 10:00am at the Senior Center. The MSC Executive Committee meets the Wednesday prior to the MSC Board of Directors meeting at 10:30am at the MSC.

#### **Audit Committee:**

The primary purpose of the Audit Committee is to provide oversight of the financial reporting process, the audit process, the system of internal controls and compliance with laws and regulations. The Audit Committee will consider internal controls and review their effectiveness. The Committee assists the Board of Directors to fulfill public governance and overseeing.

The Audit Committee will be appointed by the Board President and include two Directors. The Committee should have one “financial expert” member who is knowledgeable and experienced in government accounting and auditing; Generally Accepted Accounting Principles for estimates, accruals and reserves; and internal controls. If no member is qualified, the committee is permitted to engage an outside party for this purpose. To maintain the Committee’s independence and effectiveness, those with managerial responsibilities that fall within the scope of the audit should NOT serve as a member of the audit committee.

Specific Responsibilities of the Audit Committee include, but are not limited to:

- Submit Request for Proposals (RFP) to qualified audit firms every three years – soliciting bids, interviewing firms and making the recommendation to the Board of Directors when selecting the firm to be awarded the audit contract



- Review all significant GAAP or FASB rule changes and have a clear understanding of the effect of such changes on the financial condition of the district and needed changes in financial procedures
- Review annual audit in detail – presented to the Board by the auditors and accepted by the Board of Directors based upon the recommendation of the Committee. Such review shall encompass the overall condition of the MCSD finances, all audit recommendations for changes. and management letters
- Discuss financial statements directly with management, with independent auditors in private and privately among Committee members while maintaining an appropriate degree of professional skepticism
- Identify future financial challenges with auditors and management
- Monitor controls designed to prevent and detect senior management override of other controls
- Review annual true cost set asides to insure that all cost centers of the District have a completed plan to amortize future costs, to recommend set asides for the Board of Directors, compliance with set asides and insure management has developed a schedule of repayment for borrowings of these funds that is consistent with District financial integrity
- Establish procedures for complaints regarding accounting, internal controls or auditing matters – such procedures should specifically provide for the confidential, anonymous reporting by employees of concerns regarding questionable accounting or auditing matters
- Report annually to the full Board and the public on how it satisfied its duties and met its responsibilities

The Audit Committee should meet on a regular basis and report to the Board during the regular monthly Board of Directors meetings. The report should address or include at a minimum, the activities of the Committee, significant findings brought to the attention of the Committee, any indications of suspected fraud, waste or abuse, significant internal control findings and activities of the internal audit function.

#### **Employee Negotiations Committee:**

The primary purpose of the Employee Negotiations Committee is to allow open communication between staff and the Board of Directors regarding staff's benefit package.

The committee is comprised of two Directors and a staff nominated representative from each department. The MCSD Board President will appoint the Directors to serve for the Employee Negotiations Committee annually. The designated Board Members should report back to the Board during the regular monthly Board of Directors meetings as necessary. The committee meets on an "as needed" basis when the term of the previous negotiation is close to expiration. The committee members will be called upon to meet with the General Manager to review wage studies and other proposed policy changes to MCSD benefit and compensation package. Committee members should as background be familiar with wage comparisons of other similar entities, retirement benefit amortizations and medical benefit programs.

**Water Task Force Committee:**

The Water Task Force is a multi-agency committee serving Humboldt County. The primary purpose of the Water Task Force Committee is to provide a platform for the emergency response procedures for potable water procurement and distribution.

The MCSD Board President will appoint a Director to serve for the Water Task Force Committee annually. An alternate Director will be selected in the event the primary Director is unable to attend a meeting. The designated Board Member should report back to the Board during the regular monthly Board of Directors meetings as necessary. The committee meets on an “as needed” basis at Humboldt Bay Municipal Water District, 828 7th St, Eureka.

**No Drugs & Toxics Down the Drain Committee:**

The primary purpose of the No Drugs & Toxics Down the Drain Committee is to provide informational protocols and community outreach to educate the public in proper methods of disposal of trace toxics and hazardous substances.

The MCSD Board President will appoint a Director to serve as Chair for the No Drugs & Toxics Down the Drain Committee annually. An alternate Director will be selected in the event the primary Director is unable to attend a meeting. The designated Board Member should report back to the Board during the regular monthly Board of Directors meetings as necessary. The committee meets on an “as needed” basis.

**McKinleyville Municipal Advisory Committee:**

The primary purpose of the McKinleyville Municipal Advisory Committee (MMAC) is to provide a consistent forum for the public to hear about and advise the Planning Commission and Board of Supervisors on local community issues.

The MMAC is tasked with gathering input from the community and commenting on matters of concern which relate to county services provided to the greater McKinleyville area, including but not limited to public works, health, safety, welfare and public financing. The MMAC is to review, comment and provide advisory recommendations to the Planning Commission and the Board of Supervisors on proposed zoning amendments, and general plan petitions and amendments located within the McKinleyville planning area related to conformance with the McKinleyville community plan. The MMAC will also discuss and provide input on long-range planning issues.

The MMAC is comprised of seven appointees who reside, own property or conduct a business in the greater McKinleyville area. Five of the MMAC committee members are appointed by the County Board of Supervisors and two are representatives of MCSD. The MCSD Board President will appoint a Director to serve as a member for the MMAC annually and the General Manager serves on the committee as well. An alternate Director will be selected in the event the primary Director is unable to attend a meeting. The designated Board Member should report back to the Board during the regular monthly Board of Directors meetings matters of relevance to the District. The MMAC meet once a month on the last Wednesday at 6:00pm at the Azalea Conference Center, 2275 Central Ave, McKinleyville.

**Cornerstone Committee:**

The primary purpose of the Cornerstone Committee is to create community awareness and support for the McKinleyville Teen Center. The committee is a collaboration of MCSD and the Boys & Girls Club of the Redwoods, comprised of a representative from the Board of Directors and at least one staff member from each organization. The MCSD Board President will appoint a Director to serve as a member for the Cornerstone Committee annually. An alternate Director will be selected in the event the primary Director is unable to attend a meeting. The designated Board Member should report back to the Board during the regular monthly Board of Directors meetings. The committee meets on an “as needed” basis.

**Groundwater Sustainability Committee:**

The primary purpose of the Groundwater Sustainability Committee is to help create a framework for sustainable, local groundwater management, in response to AB 1739, SB 1168 and SB 1319 signed by Governor Brown in September 2014, allowing local agencies to tailor groundwater sustainability plans to their regional economic and environmental needs. The legislation applies to groundwater basins designated as medium- or high-priority by the California Department of Water Resources. Humboldt County has one medium-priority basin (Eel River Valley) and no high-priority basins.

The committee was formed in October 2015 to guide the local response to the Sustainable Groundwater Management Act. The MCSD Board President will appoint a Director to serve as a member for the Groundwater Sustainability Committee annually. An alternate Director will be selected in the event the primary Director is unable to attend a meeting. The designated Board Member should report back to the Board during the regular monthly Board of Directors meetings. The committee meets on an “as needed” basis at the University of California Cooperative Extension office located at 5630 South Broadway, Eureka.

## McKinleyville Community Services District

### BOARD OF DIRECTORS

December 6, 2017

TYPE OF ITEM: **INFORMATION**

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**ITEM: F.2.A**                      **Support Services - October 2017 Report**

**PRESENTED BY:**              **Colleen M. R. Trask, Finance Director**

**TYPE OF ACTION:**          **None**

### **FINANCIAL, AUDIT, & BUDGET INFORMATION**

The Recovered Reserves in the Trust Account will be 100% complete by December 31, 2017. \$1,087,684.00 total reserves have been recovered. The surcharge will be entirely removed for January 2018.

The District has \$327,579.75 to date in the Trust Account for the next Biosolids Disposal project.

Customer adjustments at month-end total \$7,153.39, which represents 49.3% of the annual \$14,500 budget for this sub-item. (GL# 501-62120)

Total Board Travel as of October 31, 2017 is \$8,091.22 which is 45% of the approved \$18,000 budget for this item. (GL# 001/005/501/551 62090-888)

Audit Update: Additional information and the final draft year-end closing trial balance has been sent to the auditors from Fedak and Brown. There will be a conference call meeting with the audit committee before binding the finalized financial statements.

Treasurer's Report Highlights: Water Fund capacity fees collected during October bring total fees collected to \$17,728.00. Wastewater Fund capacity fees of \$20,770.00 were collected in October. Capital Contributions and Capacity fees are included in the income vs. expenses graphs of the Treasurer's Report, but they are called out separately on the Budget to Actuals report.

### Statement of Activities

The Activity Summaries by Fund provides information on revenues and expenses or expenditures for each Fund, both current month and year-to-date. There is also a column showing the year-to-date budget and amounts and percentages over or under. Lines that deviate from the calculated budget by more than 10% have an explanatory note. Often, this is no more than a reminder that, while the budget is divided evenly across twelve months, actual expenses often do not follow the same pattern. Other

time, there are specific reasons for a deviation, such as contributed construction or the collection of unexpected capacity fees.

The Water and Wastewater Funds are listed first, followed by the graphs showing revenue versus expenses versus budgets. Parks, Measure B, and Streetlights information is given next, with accompanying graphs for each.

## **OTHER UPDATES**

Disbursement #11 from the State Revolving Fund loan for construction costs related to the new Wastewater Management Facility was received in September. Disbursement request #12 is being reviewed by the SRF and should be received during December and appear in the December financial reports. Disbursement request #13 is being compiled. On the Debt page of the Treasurer's Report, the loan principal amounts will be accumulated until the SRF provides a final loan amount after construction is finished in FY2017-18.

The last water rate increase of the current Board-approved rate study is due in January 2018. Customers will be notified on their bills. The next rate study is underway, as part of the Mainline Rehabilitation and Replacement project.

# McKinleyville Community Services District

## BOARD OF DIRECTORS

December 6, 2017

TYPE OF ITEM: **INFORMATION**

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**ITEM: F.2.B**                      **Operations Department – October 2017 Report**

**PRESENTED BY:**              **James Henry, Operations Director**

**TYPE OF ACTION:**          **None**

### **Water Department:**

#### **Water Statistics:**

The district pumped 40.1 million gallons of water in October.  
Two water quality complaints were investigated and rectified.  
Daily, weekly and monthly inspections of all water facilities were conducted.

#### **Double Check Valve Testing:**

Annual routine testing was conducted on Routes 17 and 18 along with a minimal number of retests. Customers with failed DCV's were notified to make repairs and call the office to schedule a retest.

#### **Average and Maximum Water Usage:**

The maximum water usage day was 1.6 million gallons and the average usage per day was 1.4 million gallons.

#### **Water Distribution Maintenance:**

Weekly Bacteria Samples were collected on Schedules 1,2,3,4 and 5 which represent different locations in the water distribution system. The schedules are made up of a sample taken in each pressure zone. The meter replacement program is in process and is on schedule to finish this year. The entire system is approximately 98% completed. Larger meters will be tested to find out if replacement is feasible. A service leak was repaired on Wavecrest due to customer having corroded pipe that broke during meter replacing. Reinstalled service on Bel Nor that was discontinued due to the customer tampering with the angle-stop while locked out for non-pay. A couple meters were repaired due to gophers chewing through the radio transmit wires.

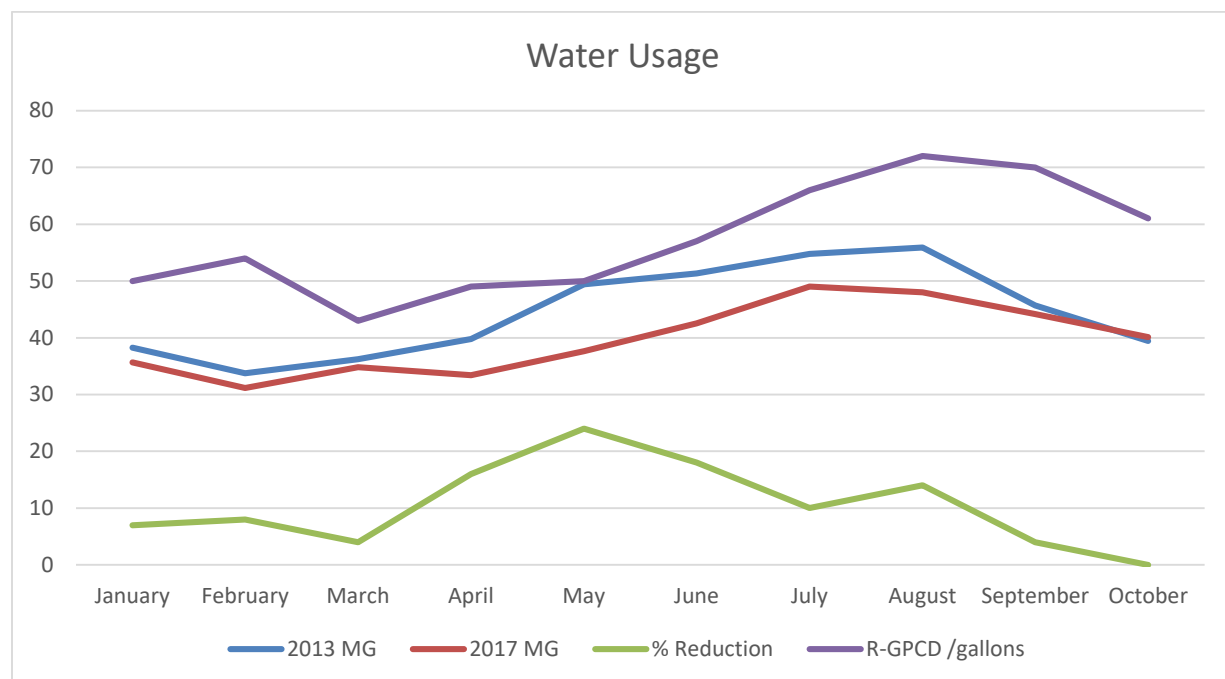
#### **Water Station Maintenance:**

Monthly inspections and daily routines were conducted at the water stations. Site mowing and clearing took place at several water R.O.W.'s and stations. The North Bank flow meter telemetry was repaired due to not transmitting the flow data to the Scada computer.

As of July 2014, the District is required to submit a Public Water Monthly Monitoring Report to compare water usage to last year's usage in the same month. I will keep the Board updated each month using the Table below.

	2013	2017	% Reduction	2017 Recycled	R-GPCD
<b>January</b>	38.241	35.670	7	0	50
<b>February</b>	33.751	31.146	8	0	54
<b>March</b>	36.244	34.828	4	0	43
<b>April</b>	39.755	33.414	16	0	49
<b>May</b>	49.407	37.628	24	8.7	50
<b>June</b>	51.337	42.539	18	19.2	57
<b>July</b>	54.757	49.038	10	17.8	66
<b>August</b>	55.908	47.995	14	14.7	72
<b>September</b>	45.702	44.179	4	14.8	70
<b>October</b>	39.439	40.123	0	16.3	61

\*Recycled water is reclaimed water that is used for irrigating crops.



R-GPCD = Residential Gallons Per Capita Day

**New Construction Inspections:**

Grocery Outlet; The water main crossing Central Avenue was completed along with the hydrant install at the property line and has been tested. Sewer laterals have been hooked up. Fawn Meadows; Water main and services have been installed and will wait on PG&E work to be completed before testing. Lake Subdivision; Plan check has been completed and construction has begun. Still waiting on timeline for underground utilities being installed.

**Sewer Department:****Waste Water Statistics:**

24.7 million gallons of wastewater were collected and pumped to the W.W.M.F. 25.3 million gallons of wastewater were treated and discharged to land disposal or reclamation in October.

Daily, weekly and monthly inspections of all sewer facilities were conducted.

**Sewer Station Maintenance:**

Monthly inspections and daily routines were conducted on all sewer stations. Staff has spent numerous hours prepping and painting the Fischer Ranch house along with replacing windows and trim rot. The grit channel monster was replaced at the Fischer Lift Station with a spare until the new channel monster arrives. This piece of equipment shreds debris that travels into the lift station through the sewer collection system and prevents the pumps from plugging up.

**Sewer Collection System:**

Grease traps were inspected at required facilities. Customers that are out of compliance were notified to have their traps pumped and possibly shorten their pumping schedule. The quarterly hydro-cleaning of 13,000 feet of sewer main was conducted using 3000 psi of water from the Vac-con. This is done to prevent sewer clogs and possibly spills. Customers were notified in advance. The flow totalizer at the Fischer Station was not recording flows properly and was beyond repairs. A new flow meter has been ordered for replacement. The Kelly and Hiller lift stations received oil change, new belts and shimming as part of the preventative maintenance. The quarterly wet well washing was conducted at the B Street and Fischer Stations. This is done to prevent grease and rags from building up and possibly plugging the pumps, along with reducing hydrogen sulfide build-up and damaging the integrity of the concrete casings.

**Wastewater Management Facility:**

The monthly Chlorine Contact Chamber wash down was completed using high pressured water through fire hoses. The Contact Chamber recirculation was replaced due to wear and tear. A lot of staff time has been consumed for training on equipment and process for the WWMF upgrade.



**Daily Irrigation and Observation of Reclamation Sites:**

Weekly well monitoring was conducted along with the Fischer Ranch tree farm as part of the tree farm pilot study. Wells will be used to monitor the uptake of each tree species. Pipe was moved to allow for mowing. String trimming and mowing took place on the north east fence line.

**Street Light Department:**

No streetlight complaints were reported in October.

**Promote Staff Training and Advancement:**

Weekly tailgate meetings and training associated with job requirements. Staff received several days of WWMF training as new equipment was installed and tested. Staff members attended miscellaneous training, such as defensive driving, sexual harassment etc.

**Special Notes:**

Tractors, Dump Truck and Vac-con received their monthly service.

Monthly river samples were completed.

Monthly Self Monitoring Reports (DMR/SMR) were submitted.

Public Water Monthly Monitoring report was submitted.

Monthly Water Quality report was sent to the Dept. of Health.

Monthly Pesticide applicator report was submitted to Department of Agriculture.

Had a meeting to Discuss the Digital Control Upgrade project.

A meeting was conducted to discuss Succession Planning.

The 1979 CCTV van was sold to highest bidder at \$1,500.00

The 1999 Chevy truck was sold to highest bidder at \$2,800.00

**WWMF upgrade status:**

Aquality has been hired by Auburn to start the new plant process. At this time, Aquality is trying to dial in the process to complete the acceptance testing. The upgrade is near completion. Auburn is working on punch list items at this time and should be off site by the first week of December. A commissioning ceremony was held which had a decent turnout. System integration is developed and tested, with a few little bugs popping up here and there that are being solved. Staff has been attending training on running the new plant and will continue to train as progress takes place. The time lapse camera footage is still being collected and will continue through the construction phase. Weekly meetings have been held to discuss progress and scheduling.

**Water and Sewer Mainline Rehabilitation Master Plan:**

The Phase 1 Master Plan documents are complete and have been submitted for review to District Staff, staff comments incorporated, and the Final documents issued. The Phase 1 finding will be summarized and during the Dec. 6<sup>th</sup> Board Meeting. Generally, the water distribution and sewer collection systems are in good shape, but they are over 40 years old and planning needs to begin on a systematic replacement process. As a part of this effort, budgetary numbers have been developed for the replacement of the entire water distribution system and wastewater collection system. A Financial Analysis was then run using these replacement costs to determine what sort of rate increases would be required to fund the complete replacement of both systems over 50, 75 or 100

years. Generally, the water system is in good shape and no near term repairs/replacements were identified. The sewer system had several near term repair projects including replacing the Middle Hwy 101 sewer crossing, replace the sewer main along Central Avenue, assessment of the sewer forcemains from all the pump stations, and the replacement of the Southern Hwy 101 crossing. The next steps will include the preparation of the Phase 2 document which will refine the replacement approach and rate analysis and provide a Capital Improvement Plan to the District for the replacement of the water distribution and wastewater collection systems.

### **Parks:**

Several open space zones received mowing, hedging and maintenance as part of the Open Space Maintenance Zone agreements. The Facilities were mowed and cleaned as part of the weekly schedule along with rental events. Fluid and service was performed on the mowers. A list of outlets was found during an inspection that were not GFI protected. Staff has upgraded those outlets to GFI. Soil samples were collected at the Hiller Sports Site to determine treatment needed as part of the semi-annual field conditioning. The Teen Center 11-month inspection was conducted, a punch list was developed and forwarded to the contractor to schedule repairs. The contractor has scheduled to make repairs. Staff has filled the full time Park Maintenance opening.

### **GIS:**

#### **MCSD Plans and Programs**

Updated MCSD Fire Prevention Program: Reviewed regulations set by Fed/Cal OSHA, reviewed MCSD plan and requirements. No updates pending, but will add water and sewer sites as time allows.

Updated Plans and Programs binder, log, table of contents.

Updated Plans and Programs (PP) binder to reflect added plans to binder and recent safety meeting trainings.

Continued developing Outlook calendar to track necessary reviews, audits, and trainings for MCSD programs/plans.

#### **Maps Completed/General GIS**

Collected additional waypoints at WWMF. Created coordinates and excel spreadsheet for Kennedy/Jenks.

Reviewed Cal Trans project and completed Utility Verification Project EA01-0H56.

Created maps where MCSD facilities would be affected.

Created Map of Central Ave OSMZ to track work completed for parks.

Created multiple maps for USAN.

Created multiple miscellaneous maps for MCSD (Parcel maps, contractor maps, etc)

#### **Misc. Work Completed**

Weekly Safety meetings.

Vehicle inspections.

Continued researching grants for water, sewer, and/or streetlights.

Service Orders/Lock list.

# McKinleyville Community Services District

## BOARD OF DIRECTORS

December 6, 2017

TYPE OF ITEM: **INFORMATION**

**ITEM: F.2.C**                      **Parks & Recreation Director's Report for November 2017**

**PRESENTED BY:**                **Lesley Frisbee, Recreation Director**

**TYPE OF ACTION:**            **None**

### **TEEN & COMMUNITY CENTER:**

Boys & Girls Club of the Redwoods Teen Club in McKinleyville is serving an average of 27 youth each day. Total membership for the year has reached 227 members. Average daily attendance has dropped off in the last two months, and overall membership has increased.

Staff continue to meet with the BGCR Teen Club Site members regularly to ensure adequate information sharing and exchange in regard to programs as well as shared facility use. Staff of both organizations also continue to explore collaborative event offerings as well as fundraising opportunities to support teen programs and activities.

Staff from both organizations are implemented a Family Laser Tag night which on Saturday, November 11, 2017 from 6:00pm-9:00pm at the McKinleyville Activity Center and Teen & Community Center. The event was sold out with over 50 participants. Over \$700 were raised in admission fees and concession sales. The funds raised went directly to supporting BGCR programming and operations at the Teen & Community Center. Additionally, staff from BGCR and MCSD have been meeting with 6 Rivers Brewery owner, Talia Clare, to plan and coordinate a large community event that we hope will become an annual fundraiser for the McKinleyville Teen Club, a Beer and Wine Festival to be held at Pierson Park on Saturday, April 21, 2018.

McKinleyville Middle School Art teacher and students are still working on the completion of the donor tree. (The completed trunk is pictured left). The project has proven to be more challenging than originally expected. Installation is tentatively scheduled for January. Once the tree is installed, we will host an art show and reception highlighting not only the donor tree, but also other student art work displayed in the building.

### **RECREATION ADVISORY COMMITTEE:**

The Recreation Advisory Committee met on Thursday, November 16, 2017. The notes from that meeting are attached as Attachment 1.



## **RECREATION PROGRAM UPDATES:**

- Playgroup-Serving 25-30 Families per day on Tuesday, Thursday and Fridays at the Activity Center. Playgroup will be hosting photos with Santa on December 16<sup>th</sup> for all ages at the Teen Center.
- Kids Club After School Program- Currently serving 90-95 kids per day. 65-70 per day at Dows and 20-25 at Morris
- Jiu Jitsu-Current session will end Nov. 30<sup>th</sup> and the class will take a break through the holidays and start up again in January.
- Tot-Letics-the next session will begin in January and will focus on Soccer.
- Drop in Pickleball-currently hosting 12-15 players per day on Wednesday mornings and Friday evenings.
- Beginning Pickleball Class-Class began this week and has 8 people in the class. It is on Monday evenings. We are still accepting registration for this class.
- Adult Futsal-is hosting 6 teams this season and will run through December 6<sup>th</sup>.
- Drop in Basketball-Continues to have 25-30 participants per Sunday evening.
- Youth Basketball League-Currently accepting registration for 3<sup>rd</sup>-12<sup>th</sup> grade girls and boys. Also seeking referees and team sponsors.
- Jr. High Dance—the November Jr. High Dance, on Friday, November 17, 2017. The dance hosted 250 students.

## **OTHER UPDATES:**

- Staff met with the Safe Routes to School Program staff regarding grant funds the Healthy Communities Division of County Public Health has received to provide pedestrian and bicycle safety, education and encouragement activities to local schools, after school programs and summer programs. Several program options were presented by the Safe Routes to School Program staff including pedestrian and bicycle safety education at the after school program and summer day camp, as well as a bicycling club in which county staff will coordinate and supervise bike rides within the community with program participants, providing loaner bicycles to those youths who do not have one. There were a variety of program offerings and District staff will be working with county staff to coordinate these activities in our programs over the coming months.
- Staff continues to work on collecting data to inform the Parks & Recreation Master Plan update. Community Workshops for gathering have been scheduled as follows:
  - November 29, 2017 5:30pm-7:00pm at Azalea Hall
  - December 19, 2017 6:00pm-7:30pm at the Teen & Community Center
  - January 10, 2018 5:30pm-7:00pm at Azalea Hall
  - February 1, 2018 6:00pm-7:00pm at Azalea Hall
  - February 12, 2018 5:30pm-7:00pm at Azalea Hall

## **Attachments:**

- Attachment 1 – RAC Meeting Notes 11-16-2017

**Thursday, November 16, 2017**

**6:30pm**

Recreation Advisory Committee Meeting

NOTES

**Members Present:** Bill Prescott, David Coelho, Johnny Calkins, Charlie Caldwell, Jeff Dunk, Chad Sefcik, David Couch, John Kulstad

**Members Absent:** Addison O'Hanen,

**Guests:** Eric Agliolo, Patrick Green (both of McK. Little League)

**Meeting Notes:**

Communications:

- Staff reported hiring of new Park Maintenance Worker, Michael Buck who started on Nov. 16<sup>th</sup>.

Public Comment:

- Eric Agliolo asked about the vacant RAC seats, and the possibility of having a representative of McK. Little League fill the seat. Staff gave directions on how to apply and described the expectations of RAC membership.

McKinleyville Little League

- Eric Agliolo spoke on behalf of McK. Little League and reported that he and other MLL board members would be meeting the last week of November to develop a proposal for the 2018 HSS use agreement between MCSD and MLL.
- Staff requested he also gather dates from the MLL board for meeting with District Staff to discuss the 2018 agreement.
- Eric Agliolo submitted expense documentation to Staff for the consideration of credit toward use fees for the 2017 field use.

Master Plan Update Process:

- Staff presented the schedule of public input meetings for gathering information for the Master Plan update.
- Member J. Kulstad suggested that providing accurate financial information in terms of the General Fund, Measure B, and the debt service timeline for the Teen Center would be useful in providing the public a realistic picture of MCSD's Parks & Recreation Dept. capacity.

Review of Quimby Act and existing Funds

- Staff presented a fact sheet on the Quimby Act and outlined what is currently in each of the funds held at the County available for MCSD use.
- Member J. Dunk, thought it would be useful to see the history of each fund in terms of growth and use over time.

Smoking in MCSD owned Parks

- Member C. Sefcik requested to discuss the possibility of making MCSD Parks "Smoke Free" places.
- Members discussed the issue and shared experiences in parks and public spaces in Arcata that are "Smoke Free"
- Member J. Dunk stated that "Parks are for public enjoyment and are to promote health and well being, smoking is anti-thetical to health and well being."

- It was determined that an action item, to recommend to the MCSD Board the passing of an ordinance making all MCSD Parks and Facilities “Smoke Free”, will be on the next RAC agenda

#### Recreation Program Updates:

- Playgroup-Serving 25-30 Families per day on Tuesday, Thursday and Fridays at the Activity Center. Playgroup will be hosting photos with Santa on December 16<sup>th</sup> for all ages at the Teen Center.
- Kids Club After School Program- Currently serving 90-95 kids per day. 65-70 per day at Dows and 20-25 at Morris
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- Drop in Basketball-Continues to have 25-30 participants per Sunday evening.
- Youth Basketball League-Currently accepting registration for 3<sup>rd</sup>-12<sup>th</sup> grade girls and boys. Also seeking referees and team sponsors.

#### Review of Actions at Last MCSD Board mtg.:

- Staff reviewed the approval of the changes to the MCSD Rules and Regulations pertaining to the Parks system.

#### AdHoc Committee Reports:

- Hewitt Ranch—Nothing new to report, J. Kulstad suggested that the property may be conducive to a low ropes challenge course.
- Skate Park—C. Caldwell gave an update on the current work of the HSPC in terms of re-design of the McKinleyville Skate Park and also in terms of the other work the Collective is doing in other communities in Humboldt County.
- School and Washington Property—Chad Sefcik reported that it looks good
- River Property—no report
- Fischer Ranch Estuary project—J. Calkins reported that trails design has been submitted. Staff reported that HCOE and RCAA are working to create an EdVentures map and activity for the Estuary trail.
- BMX-Nothing new to report

#### Agenda Items for December Meeting:

- McKinleyville Little League
- Parks & Recreation Master Plan Update process
- Smoke Free Parks & Facilities

#### Adjournment:

- Moved by J. Calkins, 2<sup>nd</sup> C. Caldwell
- Adjourned at 7:48pm

# McKinleyville Community Services District

## BOARD OF DIRECTORS

December 6, 2017

TYPE OF ITEM: **INFORMATION**

**ITEM: F.2.D**                      **General Manager's Report for the December 2017 Meeting**

**PRESENTED BY:**              **Gregory Orsini, General Manager**

**TYPE OF ACTION:**              **Information Only**

**A summary of activity for the month of November 2017**

**Cost Savings Related to District Activities** – The following is a review of some of the recent cost savings opportunities District staff identified for the previous month:

- |  |         |
|--|---------|
| • Early Sign up for CSMFO Conference for Finance Director's Professional Development | \$155   |
| • Discount from Jackson & Eklund for Accounting Services                             | \$325   |
| • Discounts on office supplies   | \$80    |
| • Pickle ball Program Administration by Volunteers                                   | \$273   |
| • Rental Property Repairs Completed in House   | \$8,075 |
| • WWMF Recirc. Prevention Valve Repair Opposed to Replacement                        | \$8,550 |
| • SWAP   | \$1,856 |
| • Northern Humboldt Employment Services  | \$3,358 |

Total cost savings for **November** are \$22,672

***The cumulative cost savings for the District to date from July 1, 2017 is \$81,448***

District staff are recognized and commended for their continued efforts in looking for cost savings, the use of internal labor and grant opportunities that result in real savings for the District, ratepayers, and the community.

Because of the General Manager's Schedule and an illness, the week the agenda was prepared; his report will presented verbally during the Board Meeting on December 6.

**Attachments:**

- Attachment 1 – WWMF Monthly Self Monitoring Report

**PHYSICAL ADDRESS:**

1656 SUTTER ROAD  
McKINLEYVILLE, CA 95519

**MAILING ADDRESS:**

P.O. BOX 2037  
McKINLEYVILLE, CA 95519



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**MAIN OFFICE:**

PHONE: (707) 839-3251  
FAX: (707) 839-8456

**PARKS & RECREATION OFFICE:**

PHONE: (707) 839-9003  
FAX: (707) 839-5964

R.W.Q.C.B. NORTH COAST REGION  
5550 SKYLANE BLVD., SUITE A  
SANTA ROSA, CA 95403

November 28, 2017

**RE: MONTHLY MONITORING REPORT**

Dear Justin:

Enclosed is the Monthly Monitoring Report for October 2017 for McKinleyville Community Services District Wastewater Management Facilities WDID NO. 1B82084OHUM, operating under Order Number WQ 2011-0008-DWQ.

The normal discharge of effluent was 30 days to Discharge Points 002, 004 and 005. The required monitoring and water quality constituents that were tested and reported were in compliance in October.

The requirement for BOD is 45 mg/L monthly average, and 65% removal for the weekly average with four weekly tests in October that represent five criteria. The BOD results for October are in compliance.

The requirement for TSS is 83 mg/L, for the monthly average with four weekly tests in October which represent one criteria. The TSS results for October are in compliance.

The requirement for Nitrate as Nitrogen in the effluent is a monthly average of 10 mg/L. One test was conducted in October and was in compliance.

Total Coliform Organisms MPN/100 ml. The Monthly Median not to exceed MPN of 23 and the daily maximum not to exceed MPN of 230. The reported results for the month of October are as follows. Median was <1.8 and a Maximum of <1.8. Five samples were collected in the month of October and were in compliance.

Monthly River Monitoring was conducted in October.

Quarterly and Semi-annual testing was conducted in October.

WWMF Upgrade Status: Upgrade is near completion. Contractor is currently working on punch list items along with trying to dial in the plant. Aquality has been contracted by Auburn to get the process to perform according to specifications. Weekly meetings have been conducted with District staff, contractors, engineers and the project manager. Contractors have 521 days to complete the project. They will be running over on the completion date and now have projected to be completed by first week of December 2017.



**McKINLEYVILLE COMMUNITY SERVICES DISTRICT  
WASTEWATER MANAGEMENT FACILITY  
EFFLUENT DISCHARGE DISPOSAL**

**OCTOBER 2017**

Discharge Monitoring	001	002	002	002	002	003	003	004	004	005	005	001
	M-INF	M-001	M-003	M-003	M-003	M-005	M-004	M-007	M-006	M-006	IRR	M-002
DATE	INFLUENT MGD	EFFLUENT MGD	MAXIMUM GPM	N.POND MGD	S.POND MGD	FISCHER MGD UPPER	FISCHER MGD LOWER	PIALORSI MGD	HILLER MGD	TOTAL MGD	RIVER MGD	
1	0.892	0.584	412		0.584					0.000	0.000	
2	0.831	1.104	2138			1.017			0.087	1.104	0.000	
3	0.811	0.978	1066			0.818			0.160	0.978	0.000	
4	0.815	0.998	1178			0.833			0.165	0.998	0.000	
5	0.804	1.006	2027			0.844			0.162	1.006	0.000	
6	0.790	0.932	895		0.397	0.526			0.009	0.535	0.000	
7	0.834	0.720	509		0.720					0.000	0.000	
8	0.885	0.712	502		0.712					0.000	0.000	
9	0.813	0.712	502		0.712					0.000	0.000	
10	0.811	0.829	2015		0.271	0.219			0.339	0.558	0.000	
11	0.799	0.943	1161			0.780			0.163	0.943	0.000	
12	0.805	0.949	1134			0.791			0.158	0.949	0.000	
13	0.741	0.786	807		0.509	0.221			0.056	0.277	0.000	
14	0.838	0.704	497		0.704					0.000	0.000	
15	0.880	0.701	496		0.701					0.000	0.000	
16	0.807	0.809	1050		0.260	0.460			0.089	0.549	0.000	
17	0.798	0.972	1138			0.818			0.154	0.972	0.000	
18	0.807	0.934	1701			0.773			0.161	0.934	0.000	
19	0.858	0.957	1143			0.790			0.167	0.957	0.000	
20	0.831	0.861	814		0.377	0.395			0.089	0.484	0.000	
21	0.855	0.196	484		0.196					0.000	0.000	
22	0.900	0.000	0							0.000	0.000	
23	0.829	0.537	1462			0.449			0.088	0.537	0.000	
24	0.798	0.985	942			0.816			0.169	0.985	0.000	
25	0.822	1.008	1038			0.843			0.165	1.008	0.000	
26	0.824	1.034	1062			0.864			0.170	1.034	0.000	
27	0.799	0.965	866		0.398	0.480			0.087	0.567	0.000	
28	0.835	0.727	510		0.727					0.000	0.000	
29	0.870	0.723	509		0.723					0.000	0.000	
30	0.827	0.939	1042		0.428	0.430			0.081	0.511	0.000	
31	0.774	1.047	1150			0.884			0.163	1.047	0.000	
TOTAL	24.691	25.352		0.000	8.419	14.051	0.000	0.000	2.882	16.933	0.000	
AVERAGE	0.823	0.818	976	0.000	0.000	0.669	0.000	0.000	0.000	0.546	0.000	
MAXIMUM	0.900	1.104	2138	0.000	0.727	1.017	0.000	0.000	0.339	1.104	0.000	
MINIMUM	0.741	0.000	0	0.000	0.196	0.219	0.000	0.000	0.009	0.000	0.000	
DAYS	31	30		0	16	21	0	0	21	21	0	
DAYS WITH NO DISCHARGE = 1												

McKINLEYVILLE COMMUNITY SERVICES DISTRICT  
WASTEWATER MANAGEMENT FACILITY  
MONITORING DATA

YEAR: 2017

MONTH: OCTOBER

DATE	INFLUENT FLOW/ M.G.D.		EFFLUENT FLOW/ M.G.D.		EFFLUENT MAXIMUM GPM	RIVER CFS	INFLUENT MONITORING		EFFLUENT MONITORING							3X5 TOTAL COLIFORM	
	INFLUENT FLOW/ M.G.D.	INFLUENT FLOW/ M.G.D.	EFFLUENT FLOW/ M.G.D.	EFFLUENT FLOW/ M.G.D.			B.O.D. mg/L	N.F.R. mg/L	pH	(C° ) TEMP	B.O.D. mg/L	NFR mg/L	AMMONIA	CL₂ RES.	RIVER CL₂ RES		SETTLABLE SOLIDS
1	0.892	0.584	412														
2	0.831	1.104	2138									7	5.4				<1.8
3	0.811	0.978	1066									7	5.0				
4	0.815	0.998	1178									7	5.1				
5	0.804	1.006	2027									7	4.9				
6	0.790	0.932	895							8	2.6	7	5.0			<0.1	
7	0.834	0.720	509														
8	0.885	0.712	502														
9	0.813	0.712	502														
10	0.811	0.829	2015									6	5.7				<1.8
11	0.799	0.943	1161									6	5.5				
12	0.805	0.949	1134									9	5.3				
13	0.741	0.786	807							6.8	ND	7	2.9			<0.1	
14	0.838	0.704	497														
15	0.880	0.701	496														
16	0.807	0.809	1050									6	2.7				<1.8
17	0.798	0.972	1138									6	3.3				
18	0.807	0.934	1701									7	3.2				
19	0.858	0.957	1143									5	3.0				
20	0.831	0.861	814							3.7	ND	4	3.0			<0.1	
21	0.855	0.196	484														
22	0.900	0.000	0														
23	0.829	0.537	1462									6	1.8				<1.8
24	0.798	0.965	942									5	2.8				
25	0.822	1.008	1038									4	2.7				
26	0.824	1.034	1062									3	3.0				
27	0.799	0.965	866							4.5	ND	3	3.1			<0.1	
28	0.835	0.727	510														
29	0.870	0.723	509														
30	0.827	0.939	1042									3	3.3				
31	0.774	1.047	1150									3	3.3				<1.8

SPILLS:

None to report

DATE	MONTHLY TESTS			BORON
	TDS	AMMONIA	NITRATE	
10/31/2017	320	5.2	1.5	240

Semi-Annual Tests		Value in ug/l
Bis phthalate		ND
alpha-BHC		ND
4,4'-DDT		ND
carbon tetrachloride		ND

Quarterly Tests		Value in ug/l
Dichlorobromomethane		ND
Bromform		ND
Chlorobromomethane		ND
Chloroform		ND

ACUTE TOXICITY

DATE	% Survival
	N/A
	N/A
	N/A

Rainbow Trout  
C. dubia

CHRONIC TOXICITY

TESTED	SURVIVAL
Minnow	N/A
C. Dubia	N/A
Algae	N/A
	TUG

Total Coliform	
Monthly	
MEDIAN	<1.8
Daily	
Maximum	<1.8

SIGNATURE: \_\_\_\_\_

REMARKS:

Indicates Permit Exceedance