



Asset Management Journey

S24-
SHARPENING ASSET MANAGEMENT STRATEGIES FOR
WATER UTILITIES



Denzel Jones
Business Analyst

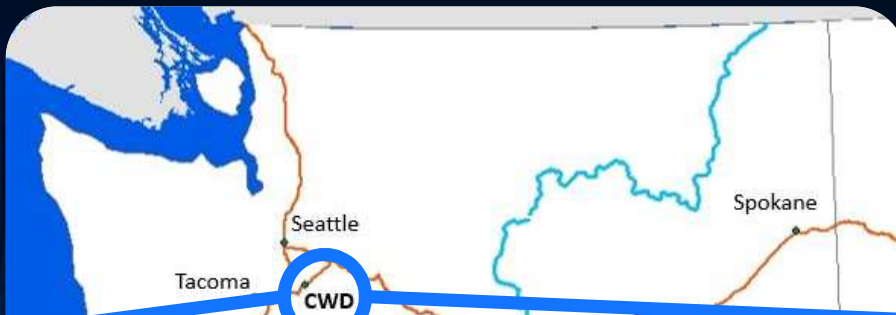


Tom Keown
General Manager

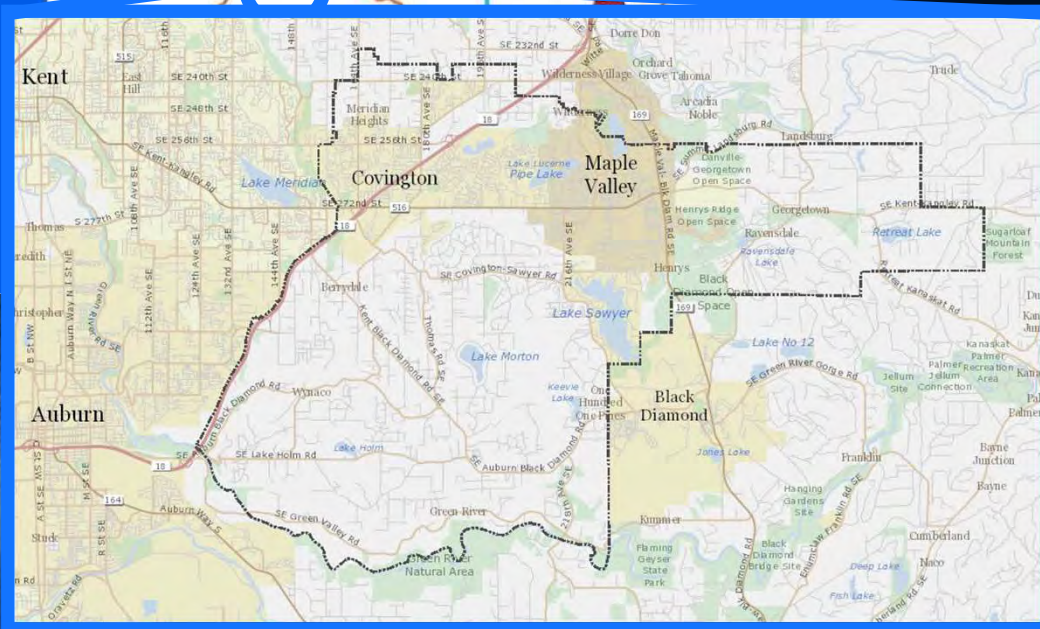


Covington
WATER DISTRICT

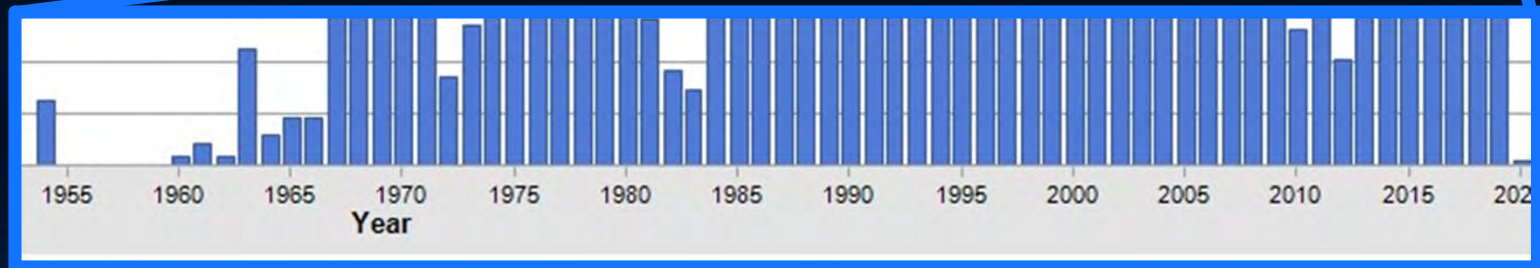
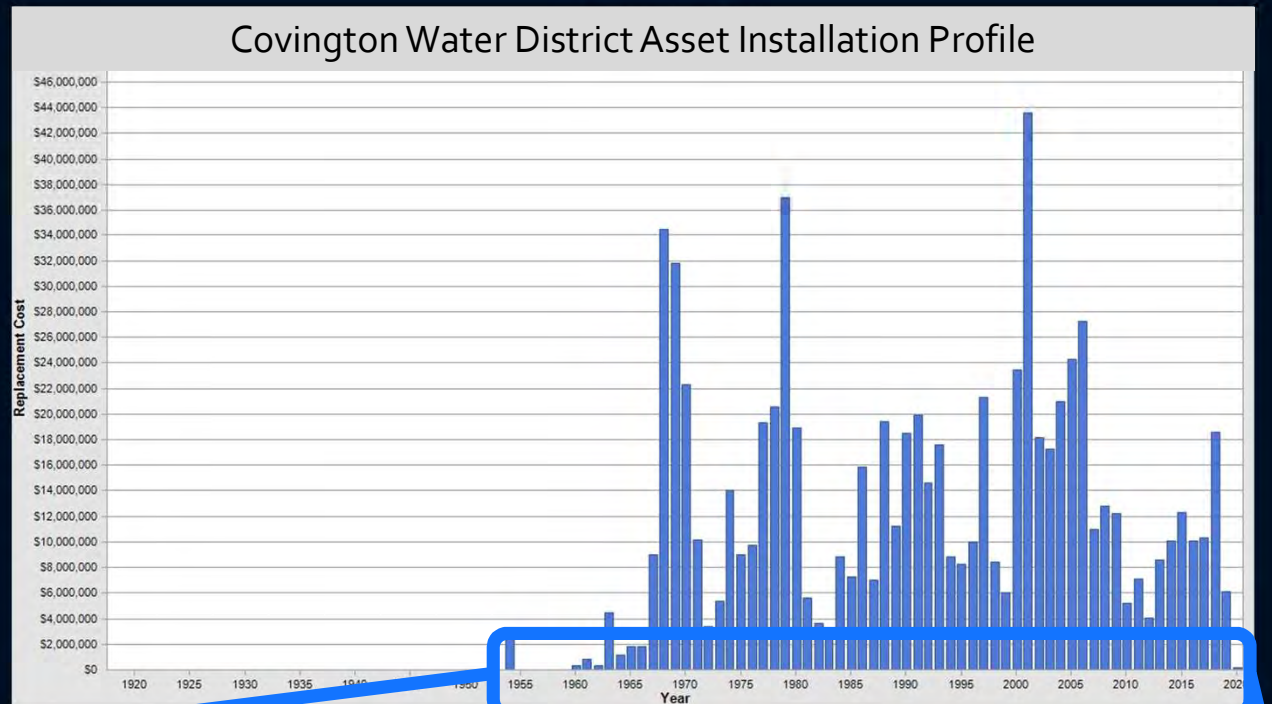
Covington Water District



- Founded in 1960
- Provide clean, safe and reliable water to a 55-mile area in South King County, serving a population of over 50,000 through 19,000+ connections
- Responsible for about 90,000 water assets, including 322 miles of transmission and distribution pipe.
- 2022 Production: 2.004 billion gallons
- 2022 Average Daily Demand: 5.54 MGD



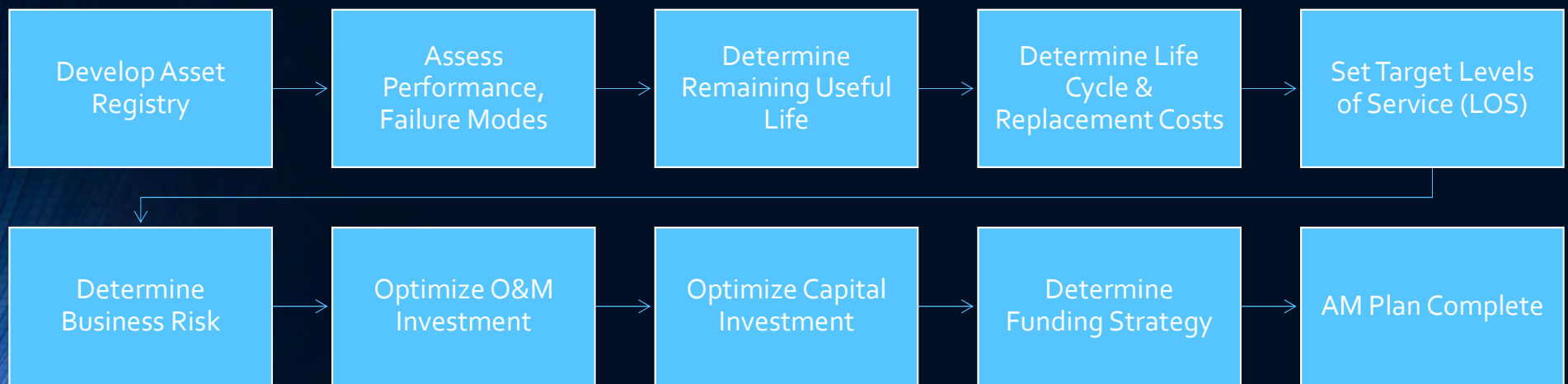
Our Mission:
To serve quality water with excellent customer service, commitment to strategic and emergency planning, fiscal responsibility, regulatory compliance, stewardship and partnerships.



Asset Management Framework

1. What is the current state of our assets?

2. What is our required level of service?



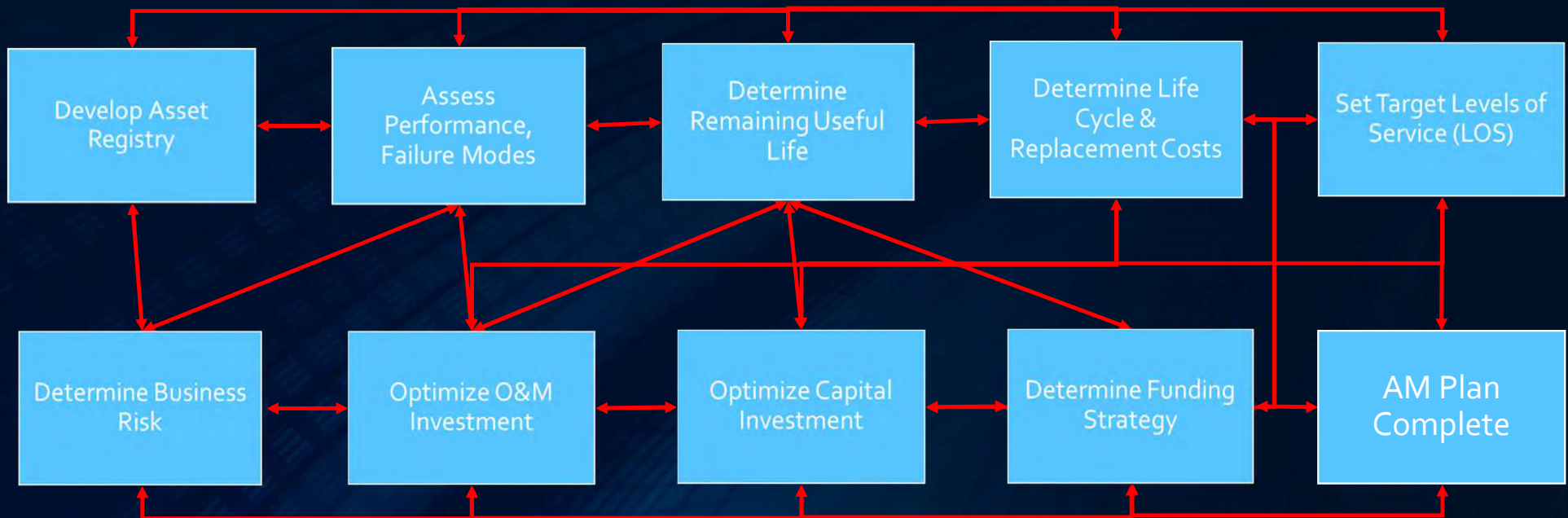
3. Which assets are critical to sustained performance?

4. What are the best O&M and CIP investment strategies?

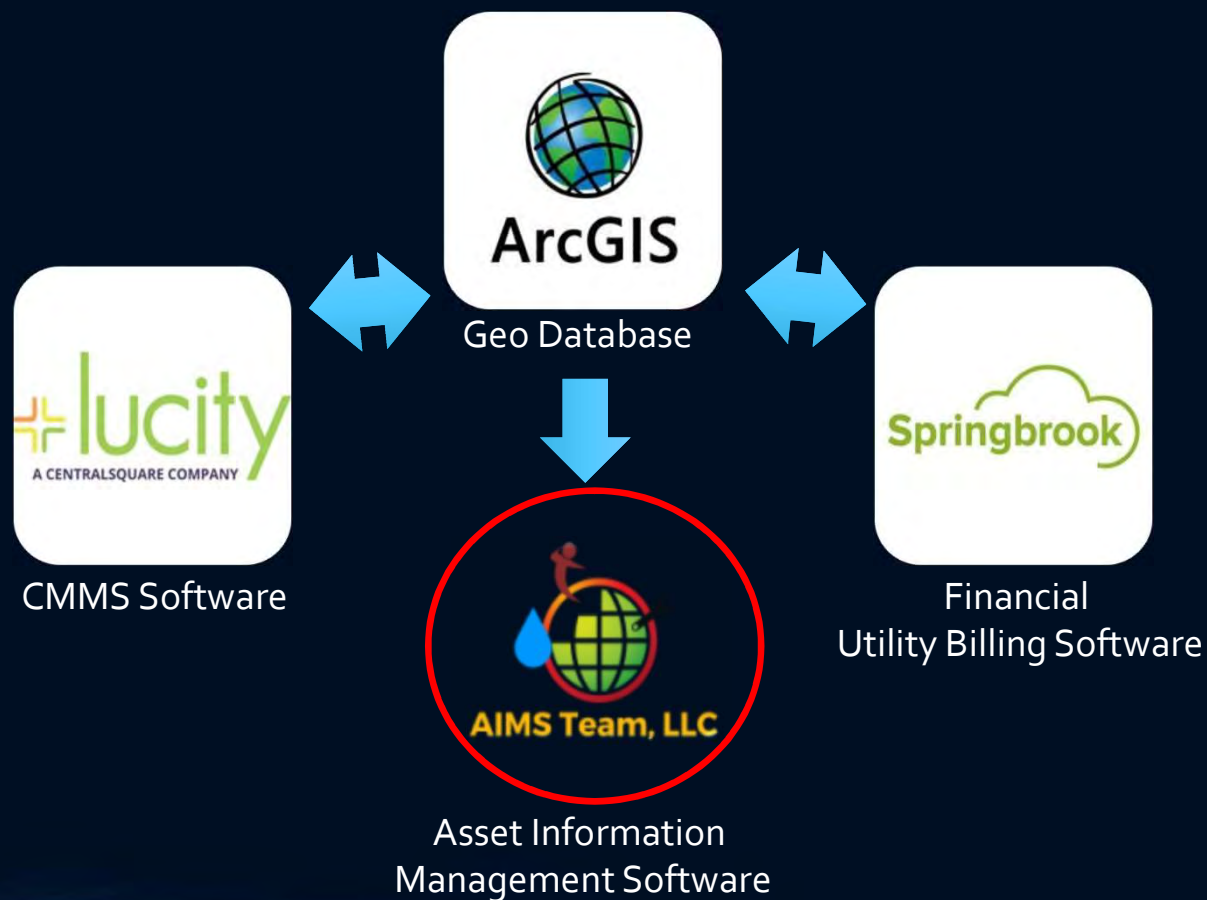
5. What is my best long-term funding strategy?

The path isn't always a straight line.

"No plan survives first impact"



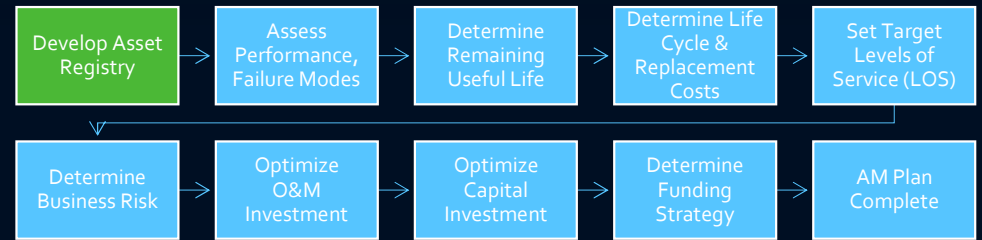
Covington Water District's Asset Management Systems



What is the current state of our assets?

Asset Management Plan Statistics

Model Year: **2023**
 Number of Lucity Assets: **89,675**
 Number of Lucity Assets Qualified for AMP Inclusion: **86,405**
 Number of Lucity Assets Synchronized into AMP: **86,353**
 Number of Assets With AMP Parameter Discrepancies: **356**
 Number of Validated Assets: **86,194**
 Number of Model Ready Assets: **86,112**
 Number of Assets With Model Results: **86,112**



Asset Hierarchy

open all | close all

Reload Add Level Delete Level

- BLDG0008 - Headquarters Building H (7)
 - Electric Power System (1)
 - Turbine Building (4)
 - Booster Pumping
 - Tank 2 Booster Pump Station (2)
 - Sugarloaf Estates Booster Pump Station
 - Tank 3 Booster Pump Station (2)
 - Tank 5 Booster Pump Station (2)
 - Tank 6 Booster Pump Station
 - Distribution System
 - Control Valves (56)
 - Interties
 - Water Hydrants (2508)
 - Lateral HY (2516)**
 - Foot Valves (2488)
 - Water Meters (24669)
 - Water Pipes
 - Water Valves (7124)
 - Water Vaults (70)
 - Vehicles and Mobile Equipment (32)
 - Water Storage
 - Headquarters Tanks (6)
 - Tank 2 (3)
 - Tank 3 (8)
 - Tank 4 (5)
 - Tank 5 (7)
 - Tank 6 (8)
 - Tank 7 (6)
 - Sugarloaf Estates (6)
 - Sugarloaf Mountain (8)

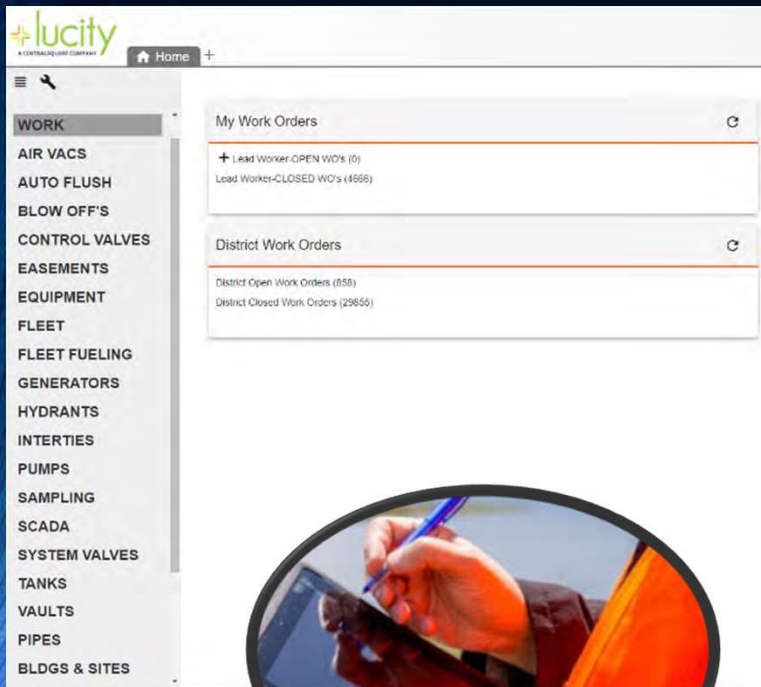
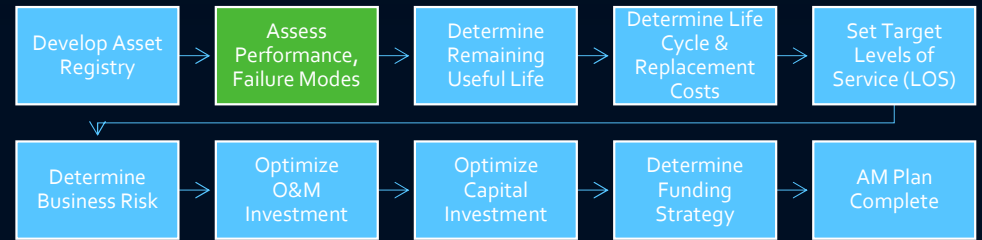
Folder Contents: Lateral HY (ID=156)

Contents AMP Report AMP Administration

| # | Asset ID | Asset Name | Asset Class | Asset Area | Lucity Table | Lucity ID |
|----|----------|-----------------|-------------|------------|--------------|-----------|
| 1 | LHY00001 | Lateral Hydrant | PIPE | 660 | WTPIPE | 14145 |
| 2 | LHY00002 | Lateral Hydrant | PIPE | 660 | WTPIPE | 14146 |
| 3 | LHY00003 | Lateral Hydrant | PIPE | 660 | WTPIPE | 14147 |
| 4 | LHY00004 | Lateral Hydrant | PIPE | 660 | WTPIPE | 14148 |
| 5 | LHY00005 | Lateral Hydrant | PIPE | 660 | WTPIPE | 14149 |
| 6 | LHY00006 | Lateral Hydrant | PIPE | 660 | WTPIPE | 14150 |
| 7 | LHY00007 | Lateral Hydrant | PIPE | 660 | WTPIPE | 14151 |
| 8 | LHY00009 | Lateral Hydrant | PIPE | 660 | WTPIPE | 14152 |
| 9 | LHY00010 | Lateral Hydrant | PIPE | 660 | WTPIPE | 14153 |
| 10 | LHY00011 | Lateral Hydrant | PIPE | 660 | WTPIPE | 14154 |
| 11 | LHY00012 | Lateral Hydrant | PIPE | 660 | WTPIPE | 14155 |
| 12 | LHY00013 | Lateral Hydrant | PIPE | 660 | WTPIPE | 14156 |
| 13 | LHY00014 | Lateral Hydrant | PIPE | 660 | WTPIPE | 14157 |
| 14 | LHY00016 | Lateral Hydrant | PIPE | 660 | WTPIPE | 14159 |
| 15 | LHY00017 | Lateral Hydrant | PIPE | 660 | WTPIPE | 14160 |
| 16 | LHY00018 | Lateral Hydrant | PIPE | 660 | WTPIPE | 14161 |
| 17 | LHY00019 | Lateral Hydrant | PIPE | 660 | WTPIPE | 14162 |
| 18 | LHY00020 | Lateral Hydrant | PIPE | 660 | WTPIPE | 14163 |
| 19 | LHY00021 | Lateral Hydrant | PIPE | 660 | WTPIPE | 14164 |
| 20 | LHY00022 | Lateral Hydrant | PIPE | 660 | WTPIPE | 14165 |
| 21 | LHY00023 | Lateral Hydrant | PIPE | 660 | WTPIPE | 14166 |

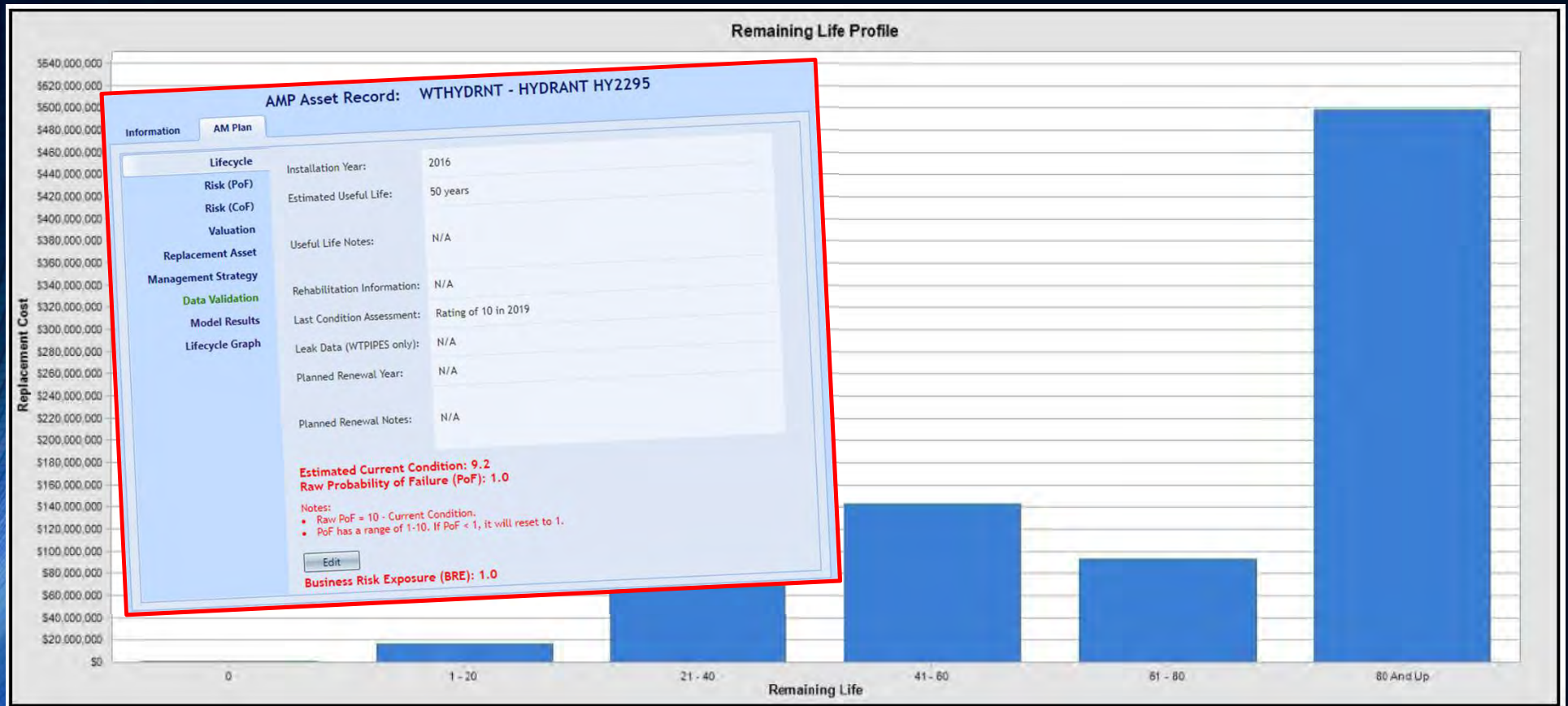
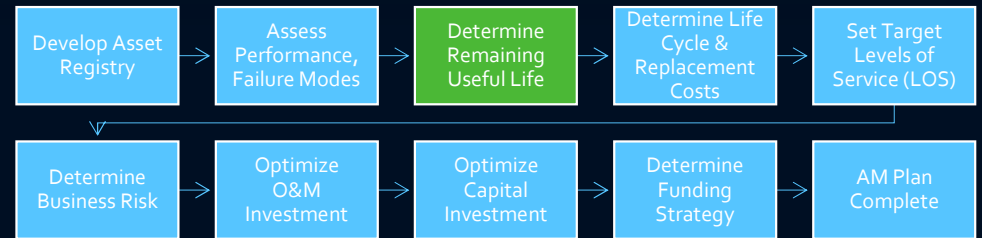
Page: 1 of 51 Go Page size: 50 Change Item 1 to 50 of 2516

What is the current state of our assets?

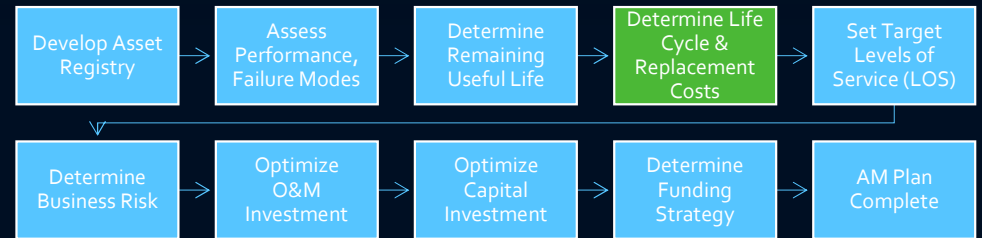


| Condition Ratings | | | | | |
|-------------------|---|---|--|---|--|
| Rating | 1 | 2 | 3 | 4 | 5 |
| Condition | Excellent | Good | Fair | Poor | Failing |
| Definition | New or refurbished asset, exceeds operational performance requirements. | Always meets operational performance requirements. | Usually meets operational performance requirements. Out of service only for short periods. | Inefficient; becoming ineffective, obsolete. Not meeting operational performance requirements. | Failing, not capable of sustaining required performance. |
| Operability | Always available for operations. | Practically always available for operations. | Functioning with occasional interruption of service. | Periodic breakdown. Out of service for moderate periods, somewhat difficult to return to service. | Essentially inoperable. Continuous and recurrent breakdowns. |
| Maintainability | Easily maintained. | Easily maintained with mainly PM, minimal attention required. | PM with increasing corrective maintenance. | Downtime is excessive, difficult to return to service. | Extensive downtime duration; Practically impossible to return to service. Parts no longer available. |
| Maintenance Type | PM Only | PM with some minor repair. | PM with growing number of minor corrective work orders. | PM's not sufficient to keep in operation. Corrective work orders increasing significantly. | Corrective maintenance is frequent with repeated patterns of failure. Close monitoring |

What is the current state of our assets?



What is the current state of our assets?



| Asset Type | Replace Cost | Rehab Cost |
|---------------------------|--------------------|--------------------|
| Automatic Transfer Switch | \$24,000 | \$0 |
| CONTROL VALVE | \$54,000 | \$150 |
| Exterior Lighting | \$45,000 | \$0 |
| Fencing | \$160,000 | \$0 |
| Forklift | \$30,000 | \$0 |
| Generator | \$150,000 | \$0 |
| HVAC | \$70,000 | \$0 |
| HYDRANT | \$185,000 | \$4,000 |
| METER | \$0 | \$10,600 |
| Motor | \$140,000 | \$0 |
| Motor Control Center | \$220,000 | \$0 |
| Panel | \$10,000 | \$0 |
| Panelboard | \$40,000 | \$0 |
| PIPE | \$317,592 | \$0 |
| ROOF | \$15,000 | \$0 |
| SCADA Field Devices | \$50,000 | \$0 |
| Security | \$110,000 | \$0 |
| Switch | \$110,000 | \$0 |
| Switchboard | \$15,000 | \$0 |
| SYSTEM VALVE | \$1,900 | \$0 |
| TANK | \$0 | \$4,800,000 |
| Transformer | \$355,000 | \$0 |
| Treatment Equip CL2 | \$94,500 | \$6,250 |
| Treatment Equip Filters | \$20,000 | \$0 |
| Treatment Equip NAOH | \$55,500 | \$0 |
| Vehicle | \$565,000 | \$0 |
| Grand Total | \$2,837,492 | \$4,821,000 |

AMP Asset Record: WTHYDRNT - HYDRANT HY2295

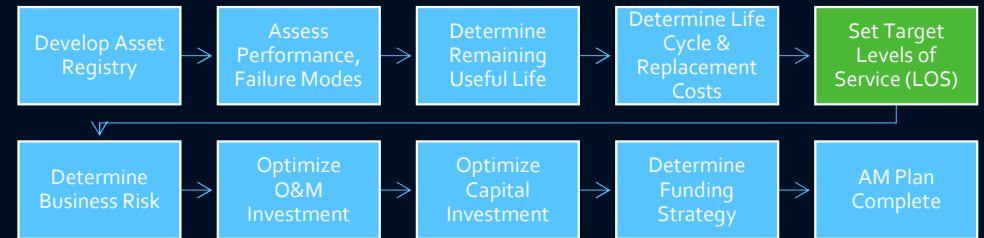
Information | AM Plan

- Lifecycle
- Risk (PoF)
- Risk (CoF)
- Valuation
- Replacement Asset
 - Replacement Cost: \$5,000.00
- Management Strategy
 - Rehabilitation Cost (% of Replacement Cost): 20 %
- Data Validation
- Model Results
- Lifecycle Graph

Edit

Close Window

How Do We Determine Our Required Level of Service?



Step 1: Customer Strategic Outcomes

Established who our stakeholders are and the desired community outcomes. Determine which CWD core value aligns with the community outcome. Determine the desired strategic outcomes to align with community outcomes and core values.

Step 2: Levels of Service Standard

Determine customers expectations and desired level of service (cLOS) for strategic outcomes. Align desired customer outcomes to a level of service (LOS). Determine whether this is a proposed LOS or a current LOS monitored by CWD.

Step 3: Performance Measures & Responsibility

Determine KPI for each LOS; what CWD provides and how it is measured. Understand how to measure and the data sources needed to measure each KPI. Determine stakeholders impact of not maintaining LOS. Determine who at CWD is responsible for each LOS

Step 4: Cost Implication

Determine the cost implication of maintaining each LOS. Determine current O&M and Capital costs to maintain LOS. Determine any addition O&M or Capital costs needed to maintain LOS.

Step 5: Asset Level

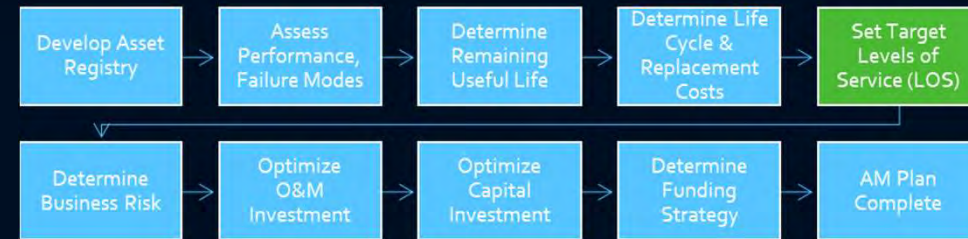
Determine which assets are required to maintain each LOS. For each asset detail the performance indicators required of the asset to meet the LOS.

What is required of our assets now and in the future?



Performance Triggers and Actions for Asset-Level Performance Measures

| LOS # | Monitoring Frequency | Performance Trigger | Actions on Performance Trigger |
|----------------|--|---|--|
| 1.1.1.1, 1.1.4 | Assets related to KPI's are continuously monitored by CWD SCADA System. LOS Owner will address asset level performance triggers immediately. | See APPEND FOR ASSET LEVEL PERFORMANCE TRIGGERS | <p><i>Actions on asset level performance triggers are highly dependent on the entire asset portfolio related to meeting this LOS.</i></p> <p>LOS Owner should address an individual asset performance trigger as needed ensuring the overall LOS can be maintained. LOS Owner should notify Operations Manager to ensure AIMS is updated to reflect change in asset condition.</p> |



Performance Index and Actions for Benchmarking Scale Performance Measures

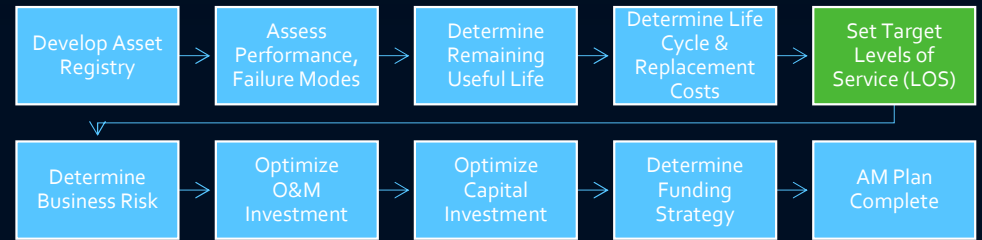
| LOS # | Monitoring Frequency | Performance Index | Actions on Performance Index |
|--|--|-----------------------------|--|
| 1.1.2, 1.1.3, 1.1.5, 3.2.1, 3.2.2, 3.2.3, 3.2.4, 3.2.5, 3.2.6, 3.2.7 | Annually these Levels of Service should be benchmarked against the latest version of the AWWA Utility Benchmarking Survey, or similar. | 25 th Percentile | Continuous improvement measures should be considered to <u>maintain</u> current LOS performance level. |
| | | Median | Continuous improvement measures should be considered to <u>improve</u> current LOS performance level. |
| | | 75 th Percentile | Continuous improvement measures should be implemented to <u>improve</u> current LOS performance level. |






| Customer Level of Service Expectation | LOS # | Technical Level of Service (LOS) Statement | Performance Measure Monitoring Type | Performance Measure | Performance Statement |
|---|-------|---|-------------------------------------|--|---|
| | 3.2.3 | Maintain sufficient financial liquidity to meet normal operating and contingent obligations | Benchmarking Scale | Debt Service Coverage Ratio 1.61 | Covington Water District is in the 25 th Percentile based on AWWA Utility Benchmarking Survey |
| | 3.2.4 | Maintain sufficient financial liquidity to meet normal operating and contingent obligations | Benchmarking Scale | Days of Working Capital 1319 Days | Covington Water District is in the 25 th Percentile based on AWWA Utility Benchmarking Survey |
| | 3.2.5 | Ensure the District maintains a financial base sufficient to provide a consistent level of District services | Benchmarking Scale | Operating Ratio 77.31% | Covington Water District is in the 25 th Percentile based on AWWA Utility Benchmarking Survey |
| | 3.2.7 | Ensure the District maintains a financial base sufficient to provide a consistent level of District services | Benchmarking Scale | O&M Cost of \$307.60 for Potable Water | Covington Water District is in the 50 th Percentile based on AWWA Utility Benchmarking Survey |
| Rates are fair | 3.1.1 | Perform rate studies annually to determine if rate adjustment needed, COSA periodically to determine if connection charges adjustment needed. Rate Study performed annually, Cost of Service Study at least every 5 years | Closed Question | Yes | Covington Water District performs the necessary studies to determine if changes are needed. |
| | 3.2.2 | Ensure the District maintains a financial base sufficient to provide a consistent level of District services. Maintain and preserve existing infrastructure and capital assets. | Benchmarking Scale | Return on Assets 2.24% | Covington Water District is in the 25 th Percentile based on AWWA Utility Benchmarking Survey |
| | 3.2.6 | Ensure the District maintains a financial base sufficient to provide a consistent level of District services | Benchmarking Scale | Water Service Affordability Ratio of 1.86% | Covington Water District is in the 25 th Percentile based on AWWA Utility Benchmarking Survey |
| Billing is accurate and timely | 3.1.2 | Meter boxes are cleared for access and manual meter reads are taken every 5 years and compared to electronic reading. | Quantitative Measurement | 2021 Fiscal Year 6220 Meters | Covington Water District check and maintain > 5000 meters |
| CWD provides information about our water | 2.2.1 | Publish CCR Report as regulated by DOH | Closed Question | Yes | Covington Water District has published the CCR Report |
| CWD provides accountability for fiscal activities | 2.1.1 | Provide notification to allow for rate payer comment on Annual Budget prior to board approval. | Closed Question | Yes | Covington Water District provides notification to allow rate payers' comment on the Annual Budget before board approval |
| CWD responds to public record requests | 2.1.2 | Respond within 10 business days to 100% of public records requests | Closed Question | Yes | Covington Water District responds within 10 business days to 100% of public records requests. |

What is our required level of service?





Asset Class: Hydrants

This asset class comprises: **2.79%** of the Covington Water District's asset registry

This asset class has a replacement value of: **\$12,350,000**


Asset Count
This section evaluates the total number of assets in the asset class. This evaluation includes total assets in asset registry, total validated assets, total model-ready assets, and total model results. The total number of validated assets are assets that have been updated in AIMS in preparation for modeling. Model-ready assets have had replacement cost information and management strategies applied. Total model results reflects the number of assets that have been incorporated into future funding models.

| Total Assets in Asset Registry | Total Validated Assets | Total Model Ready Assets | Total Model Results |
|--------------------------------|------------------------|--------------------------|---------------------|
| 2479 | 2471 | 2471 | 2471 |

Asset Condition
This section evaluates the current condition of assets for this asset class. Condition assessments are performed by field staff during periodic operations and maintenance activities for this asset class. Below is the matrix used by field staff for condition assessments. The pie chart below indicates the overall condition of this asset class. The tabular data aligns replacement cost to each condition rating.


| Condition | Excellent | Good | Fair | Poor | Very Poor |
|-------------|------------------|---------------------|------------------------|----------------------|---------------------|
| Structure | no deterioration | minor deterioration | moderate deterioration | severe deterioration | total deterioration |
| Operation | no problems | minor problems | moderate problems | severe problems | total problems |
| Maintenance | no problems | minor problems | moderate problems | severe problems | total problems |
| Life Cycle | no problems | minor problems | moderate problems | severe problems | total problems |

Asset Class by Condition Rating



Condition Text:
● 1_Excellent
● 2_Good
● 3_Fair
● 5_Failing

| Condition Rating | % of Grand Total | Replacement Cost |
|------------------|------------------|---------------------|
| 2_Good | 74.63% | \$9,250,000 |
| 1_Excellent | 17.18% | \$2,125,000 |
| 3_Fair | 5.32% | \$660,000 |
| 5_Failing | 2.86% | \$315,000 |
| Total | 100.00% | \$12,350,000 |



Covington Water District Operations Department

Home Page

REPORT NAVIGATION

- Home
- Air Vacs
- Blow Offs
- Expense
- Excavation
- Fleet
- Hydrants
- Labor Hours
- Treatment
- Valves
- Water Loss - CWD
- Water Loss - SLWS
- Water Quality - CWD
- Water Quality - SLWS

Open Work Orders

788

Closed Work Orders

29.48K

Avg Work Orders Closed/Year


3.68K

Year

All ▼


Status of All Open Work Orders

● New Work Order ● In progress ● Needs Assistance ● WO On Hold ● Needs Review



Work Orders Closed by Year

● Count of Work Order # ● Hours



| Year | Count of Work Order # | Hours |
|------|-----------------------|-------|
| 2014 | 1.5K | 29K |
| 2015 | 8.3K | 28K |
| 2016 | 25K | 6.7K |
| 2017 | 4.2K | 24K |
| 2018 | 3.0K | 27K |
| 2019 | 4.0K | 28K |
| 2020 | 1.8K | 1.4K |

All Open Works by Lead Worker

| | |
|----------------|-----|
| To Be Defer... | 387 |
| Tom Huizen... | 178 |
| Dale Benson | 81 |
| Dale Benson | 46 |
| Tyler Howard | 36 |
| Cameron H... | 18 |
| Jeffrey Greer | 14 |
| Chris Wilson | 7 |
| Andrew Car... | 6 |
| Austin And... | 3 |
| Matt Zager | 3 |
| Terry Camp... | 3 |

Total Work Orders by Asset #

| System ID | Count |
|-----------|-------|
| SS00019 | 929 |
| SITE012 | 360 |
| SITE014 | 358 |
| SITE008 | 357 |
| SITE009 | 357 |
| SITE003 | 350 |
| SITE011 | 350 |
| SITE013 | 346 |
| SITE010 | 334 |
| SITE001 | 327 |
| SITE016 | 324 |
| SITE015 | 314 |
| SITE018 | 293 |
| SITE012 | 280 |

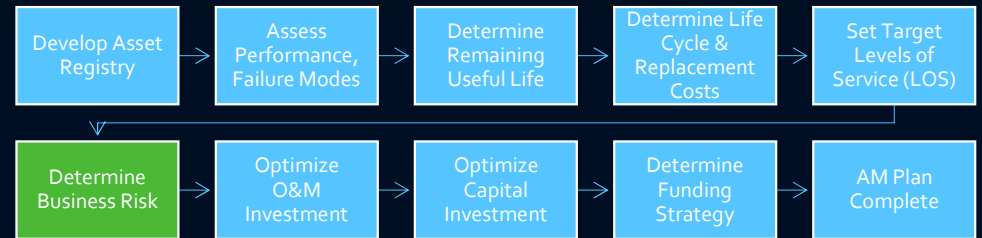
WO's Created by Operator

| W/O Created By | Count |
|------------------|-------|
| PM | 16364 |
| | 10460 |
| Tyler Howard | 481 |
| Chris Wilson | 331 |
| Andrew Carson | 263 |
| Cameron Hermesen | 217 |
| Jeff Greer | 209 |
| Matt Rosso | 174 |
| Tom Huizenga | 158 |
| Chris Guest | 152 |
| Todd Tandeccki | 131 |
| Austin Anderson | 117 |
| Brian Kump | 101 |
| Josh Tardora | 92 |

WO's Closed by Operator

| Lead Worker | Count |
|------------------|-------|
| Chris Guest | 4666 |
| Andrew Carson | 3225 |
| Chris Wilson | 2548 |
| Jim Moe | 2009 |
| Jeffrey Greer | 1937 |
| Brian Kump | 1769 |
| Craig Hurley | 1526 |
| Tyler Howard | 1506 |
| Cameron Hermesen | 1313 |
| Allan Gosnell | 1011 |
| Austin Anderson | 1004 |
| Todd Tandeccki | 921 |
| Tom Huizenga | 812 |

Which assets are critical to sustained performance?



AMP Asset Record Details

AMP Asset Record: WTHYDRNT - HYDRANT HY2295

Information | AM Plan

Lifecycle

Risk (PoF) **Estimated Current Condition: 9.2**
Raw Probability of Failure (PoF): 1.0

Risk (CoF)

Valuation

| PoF Adjustment Factors: | |
|-------------------------|------------|
| Environment (1-2) | Use (0-2) |
| 1 | 1 |
| Notes: N/A | Notes: N/A |

Total PoF Adjustment Factor: 1

Final PoF: 1.0

Note: Final PoF = Raw PoF * Total PoF Adjustment Factor. PoF has a range of 1-10.

Business Risk Exposure (BRE): 1.0

Edit

Close Window

AMP Asset Record Details

AMP Asset Record: WTHYDRNT - HYDRANT HY2295

Information | AM Plan

Lifecycle

Risk (PoF)

Risk (CoF) Raw Consequence of Failure (CoF): 1
Notes: N/A

Valuation

Replacement Asset

Management Strategy

| CoF Mitigation Factors: | | |
|----------------------------|-------------------------------|------------------|
| Redundancy (0-1) | Containment (0-1) | Diversion (0-1) |
| 1 | 1 | 1 |
| Notes: N/A | Notes: N/A | Notes: N/A |
| Spares vs. Lead Time (0-2) | Emergency Response Plan (0-1) | Monitoring (0-1) |
| 1 | 1 | 1 |
| Notes: N/A | Notes: N/A | Notes: N/A |

Total CoF Mitigation Factor: 1

Final CoF: 1.0

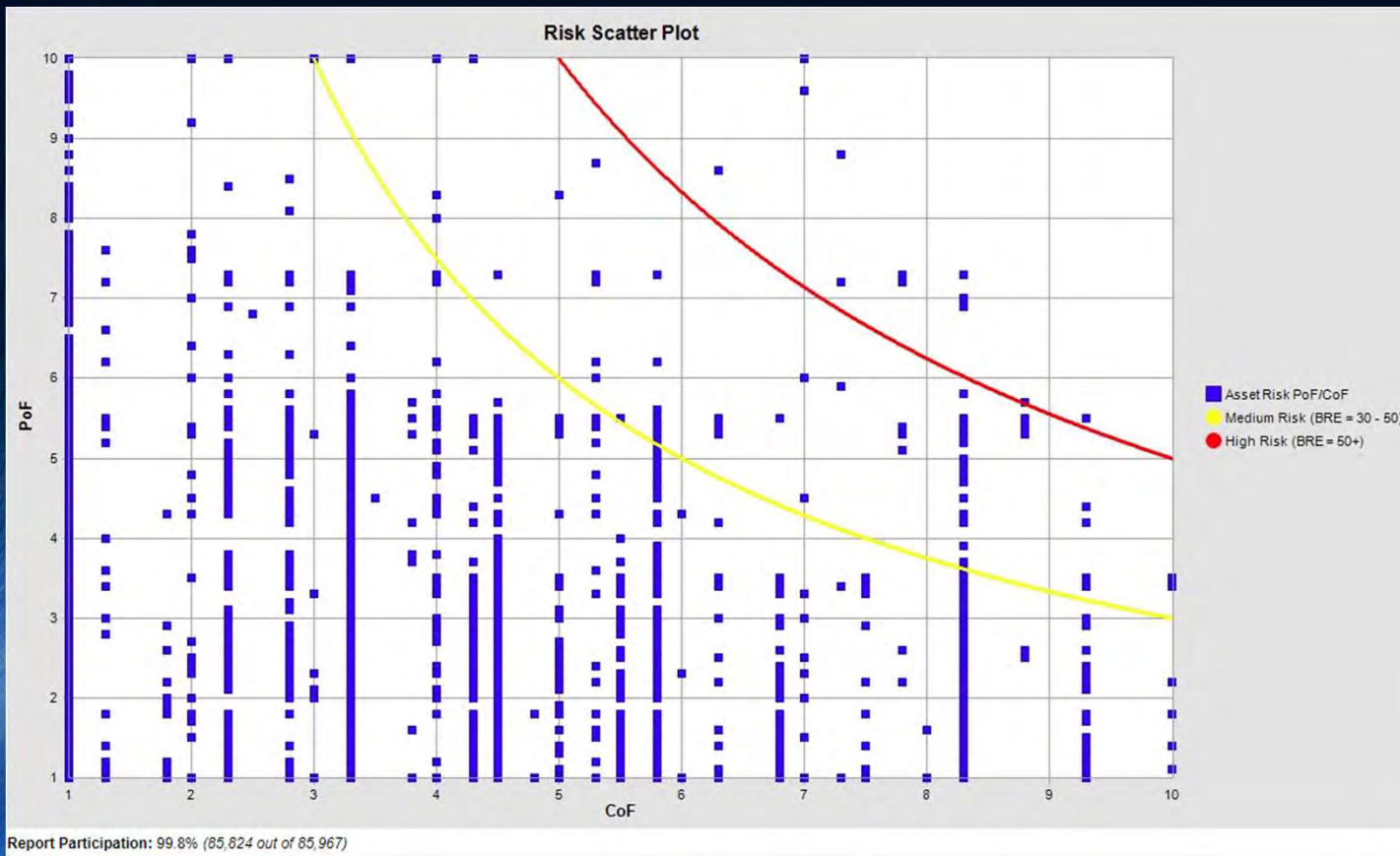
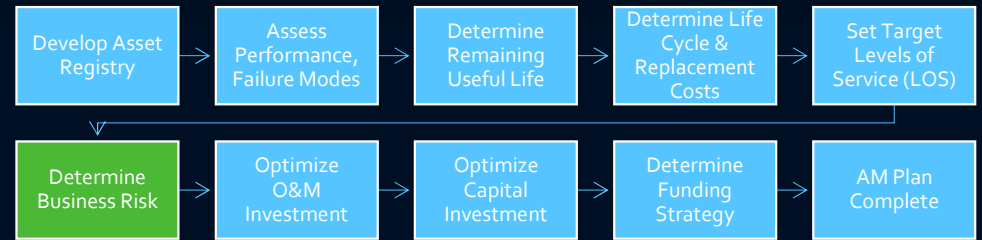
Note: Final CoF = Raw CoF * Total CoF Mitigation Factor. CoF has a range of 1-10.

Business Risk Exposure (BRE): 1.0

Edit

Close Window

Which assets are critical to sustained performance?



| Total | Risk Level |
|--------|------------|
| 110 | High |
| 645 | Medium |
| 85,069 | Low |
| 85,824 | Total |

Business Risk Exposure = Risk Impact x Probability



AMP REPORT FOR:

PIPE

All

Asset Risk Profile

This asset class contains

41

HIGH RISK ASSETS

High PoF Assets

4880

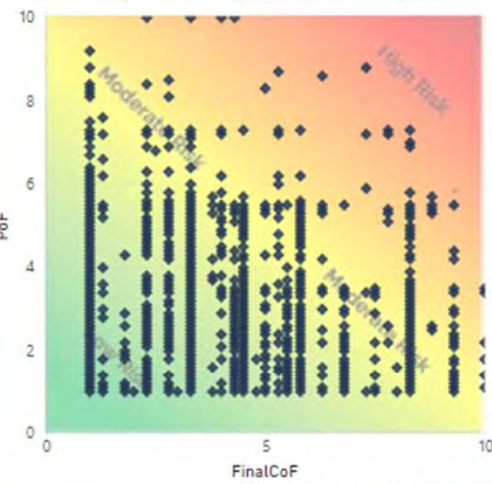
High CoF Assets

2596

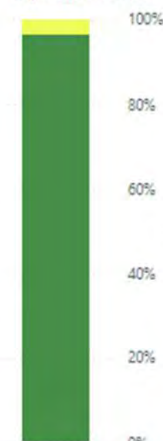
% of Low Risk Assets in Asset Class

99.39%

Probability and Consequence of Failure Matrix



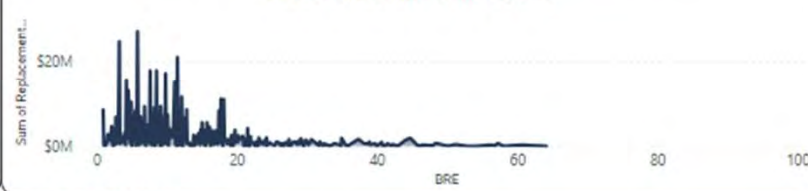
Business Risk Exposure Score



Asset Risk Rankings

| AssetID | AssetName | PoF | Final CoF | BRE | Replacement Cost |
|---------|------------|------|-----------|-------|------------------|
| WM8159 | Water Main | 8.80 | 7.30 | 64.20 | \$329 |
| WM5501 | Water Main | 7.30 | 8.30 | 60.60 | \$145,692 |
| WM8938 | Water Main | 7.30 | 8.30 | 60.60 | \$93,748 |
| WM8939 | Water Main | 7.30 | 8.30 | 60.60 | \$60,976 |
| WM9439 | Water Main | 7.30 | 8.30 | 60.60 | \$14,387 |
| WM533 | Water Main | 7.00 | 8.30 | 58.10 | \$48,481 |
| WM10568 | Water Main | 6.90 | 8.30 | 57.30 | \$3,142 |
| WM10570 | Water Main | 6.90 | 8.30 | 57.30 | \$22,848 |
| WM10571 | Water Main | 6.90 | 8.30 | 57.30 | \$2,499 |
| WM10573 | Water Main | 6.90 | 8.30 | 57.30 | \$6,140 |
| WM10574 | Water Main | 6.90 | 8.30 | 57.30 | \$66,009 |
| WM8536 | Water Main | 6.90 | 8.30 | 57.30 | \$9,389 |
| WM8538 | Water Main | 6.90 | 8.30 | 57.30 | \$85,716 |

Asset Replacement Cost by BRE



Insights

Top All

We didn't find any insights. [Learn more about Power BI insights](#)

ⓘ This feature is in preview. [Learn more about Power BI insights](#)





Covington Water District Meter Consumption Summary

Filters

Total Dollars Billed YTD by Rate Type

Billable Consumption

\$783,097.28

Total Dollars Billed YTD

\$783,097.28

Total CCFs Billed YTD

141,553

Dollars Billed by Rate Tier YTD

| cons_level | Sum of amount | Sum of consumption |
|--------------|---------------------|--------------------|
| 1 | \$126,372.4 | 45,133 |
| 2 | \$82,464.16 | 20,877 |
| 3 | \$73,772.65 | 12,303 |
| 4 | \$500,488.07 | 63,240 |
| Total | \$783,097.28 | 141,553 |

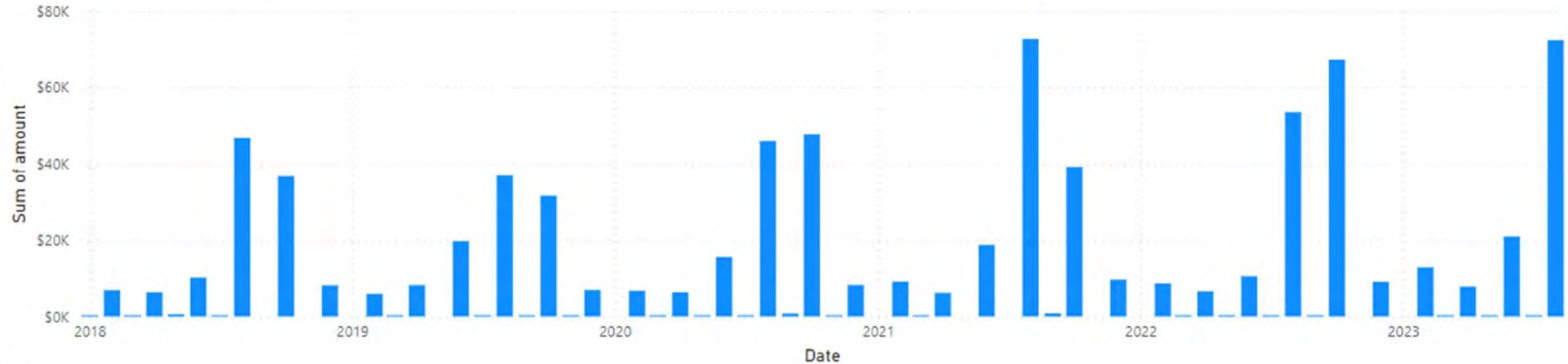
1/1/2018 9/1/2023

Rate Category

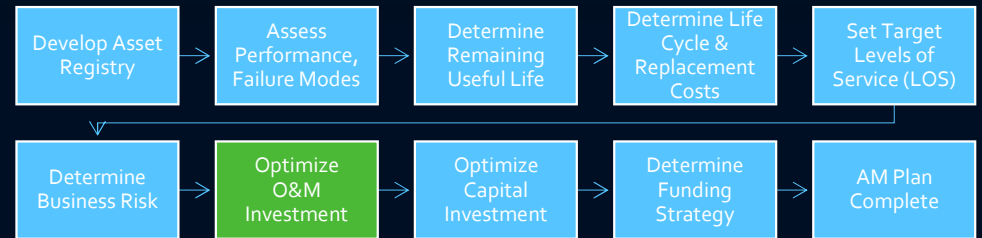
Water Sales - Sugarloaf

Dollars Billed by Rate Type

Rate Type ● Billable Consumption



What are the best O&M investment strategies?



Covington Water District Management Strategy Editor

| # | Strategy Name | Description | Number of Possible Rehabilitation Events | Post-Rehabilitation Condition | Renewal Trigger - Condition | Renewal Trigger - BRE | Renewal Trigger - Age | Number of Associated Assets |
|----|--|---|--|-------------------------------|-----------------------------|-----------------------|-----------------------|-----------------------------|
| 1 | Fire Hydrant Strategy-1 | Post (>=) 2001 install date. Rehab every 20 years. | 4 | 9.0 | 1.0 | | | |
| 2 | Fire Hydrant Strategy-2 | 1974 - 2000 install date. Rehab every 25 years. | 2 | 9.0 | 3.0 | | | |
| 3 | Fire Hydrant Strategy-3 | 1960 - 1973 install date. Replace based on lead porting at end of useful life. | 0 | | 1.0 | | | |
| 4 | Run to End of Useful Life - BASIC | | 0 | | 0.0 | | | |
| 5 | CL2 Generator | Rehab on trigger condition. | 5 | 9.0 | 5.0 | | | |
| 6 | Control Valves | Rehab valve every 5 years. | 9 | 9.0 | 1.0 | | | |
| 7 | System Valves < 12" | Replace valve when condition exceeds recommended torque values. | 0 | | 1.0 | | | |
| 8 | System Valves >= 12" | Rehab valve when condition exceeds recommended torque values. | 1 | 9.0 | 1.0 | | | |
| 9 | Water Meter-1 | Run to end of useful life for meters 0.625 to 2.0 inches. | 0 | | 0.0 | | | |
| 10 | Water Meter-2 | Rehab for meters greater than 2.0 inches. | 5 | 9.0 | 1.0 | | | |
| 11 | Water Tank - Steel | Re-coating interior and exterior. | 3 | 9.0 | 3.0 | | | |
| 12 | Wells | Cleaning and re-development | 3 | 9.0 | 3.0 | | | |
| 13 | Run to End of Useful Life | Run to end of useful life with routine maintenance. | 0 | | 2.0 | | | |
| 14 | Ductile Iron Water Mains/Pipes | Replace all DI water mains every 120 years. This includes DI water mains and hydrant laterals | 0 | | 1.0 | | | |
| 15 | Fire Hydrant Laterals including valves | To evaluate the fire hydrant laterals and valves for 100 year replacement. | 0 | | 0.0 | | | |
| 16 | Run to End of Useful Life-Services | This strategy is to be used for Lateral Line of Service | 0 | | 0.0 | | | |
| 17 | Run to End of Useful Life-Electrical | This strategy is to be used for Electrical equipment. | 0 | | 1.0 | | | |
| 18 | Asbestos Cement Water Mains/Pipes | Replace all AC Pipe at end of life with Ductile Iron Pipe. | 0 | | 0.0 | | | |
| 19 | Cast Iron and PVC Water Mains/Pipes | Replace CI and PVC water mains every 100 years. | 0 | | 0.0 | | | |
| 20 | Brass and Copper Water Pipes | Replace all Brass and Copper pipes at the end of life with different type. | 0 | | 0.0 | | | |

AMP Asset Record Details

AMP Asset Record: WTHYDRNT - HYDRANT HY2295

Information | **AM Plan**

Lifecycle

Risk (PoF) Management Strategy: Fire Hydrant Strategy-1

Risk (CoF) Description: Post (>=) 2001 install date. Rehab every 20 years.

Valuation

Replacement Asset

Management Strategy

Data Validation

Model Results

Lifecycle Graph

Number of Possible Rehabilitation Events: 4

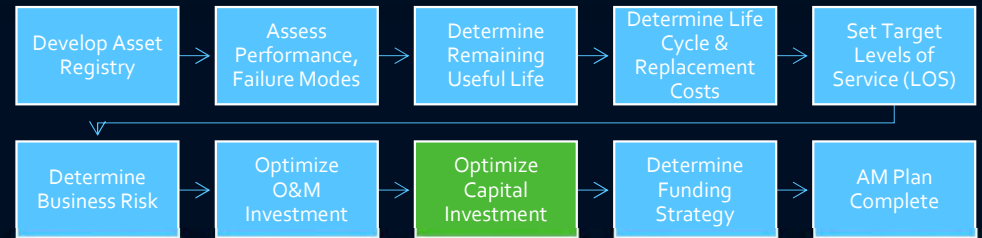
Post-Rehabilitation Condition: 9.0

Renewal Trigger - Age: 200

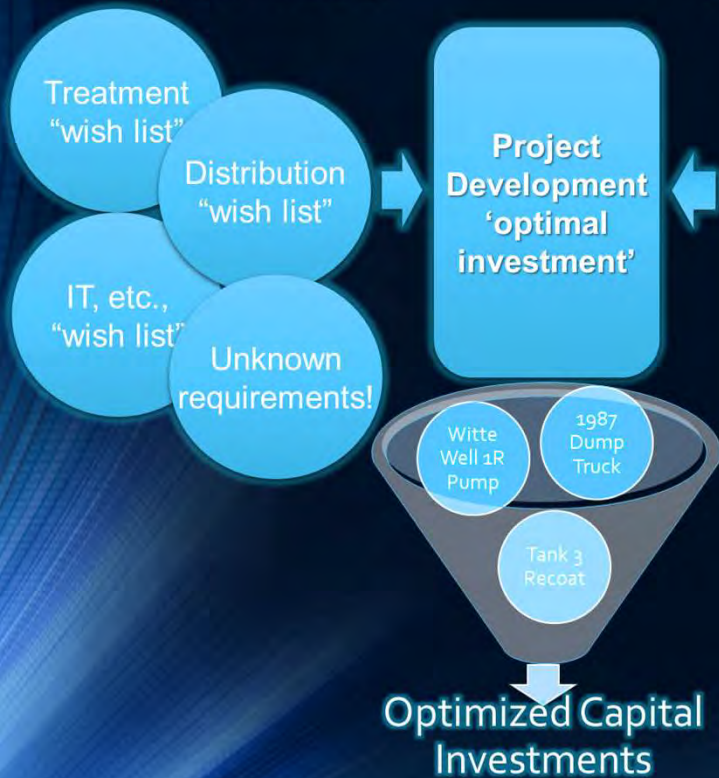
Renewal Trigger - Condition: 1.0

Renewal Trigger - BRE: 100

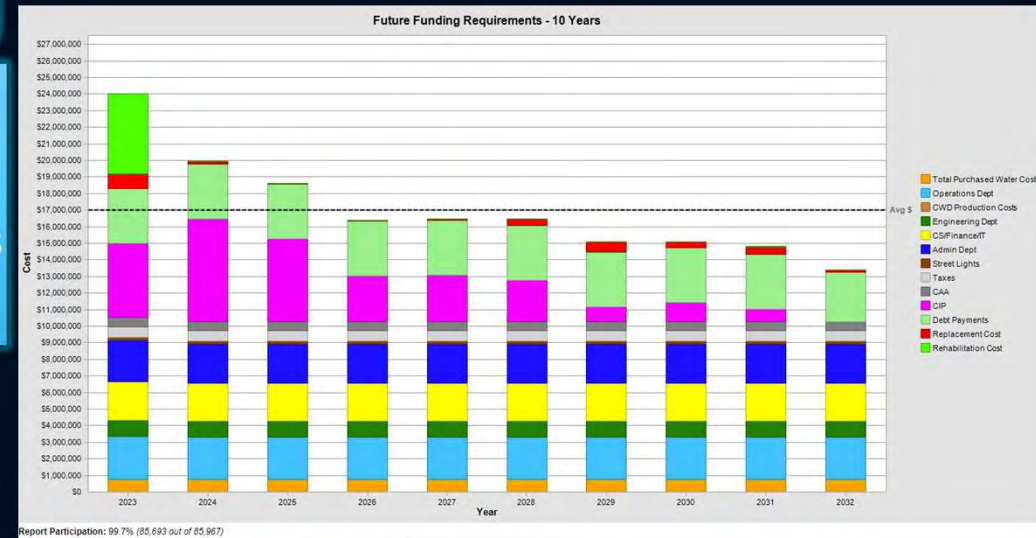
What are the best CIP investment strategies?



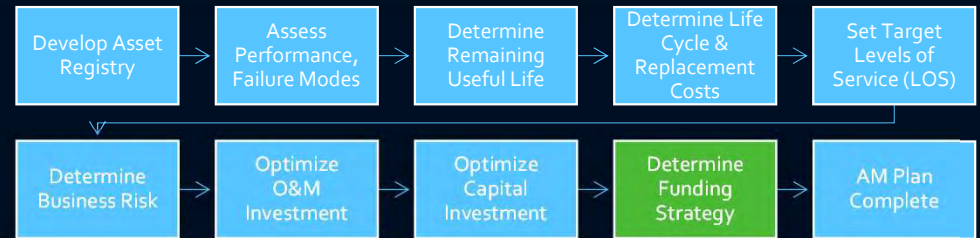
“Champion” model



“Structured” model

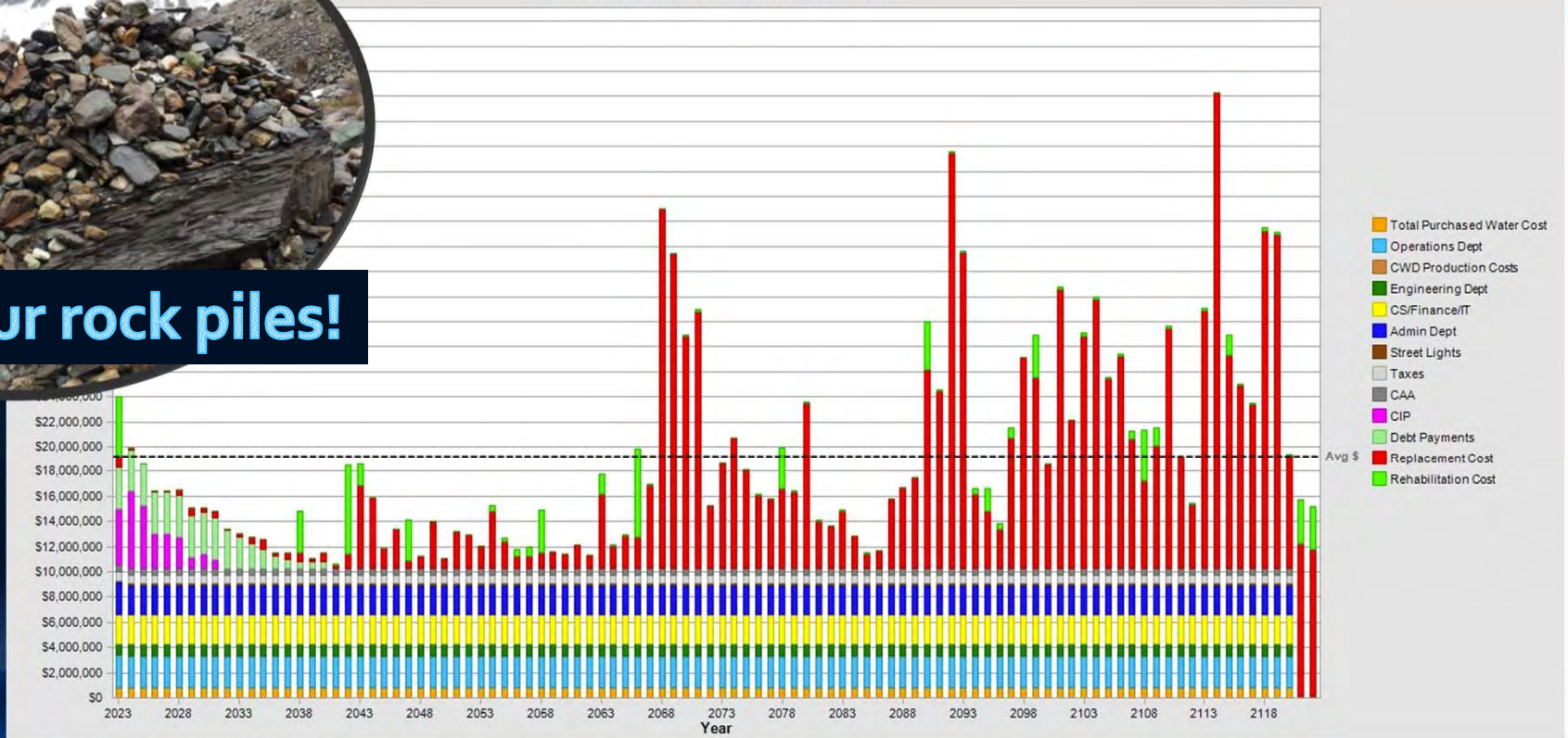


What is the best long-term funding strategy?



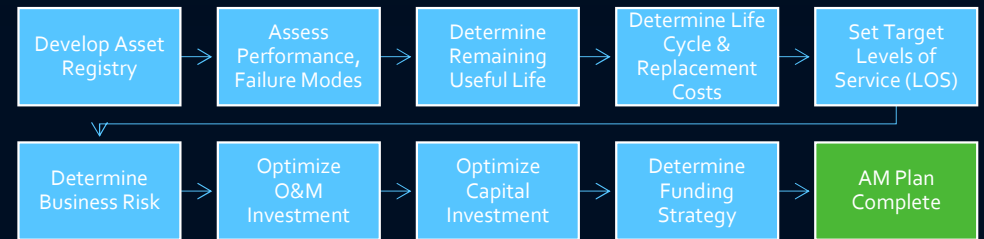
Know your rock piles!

Future Funding Requirements - 100 Years



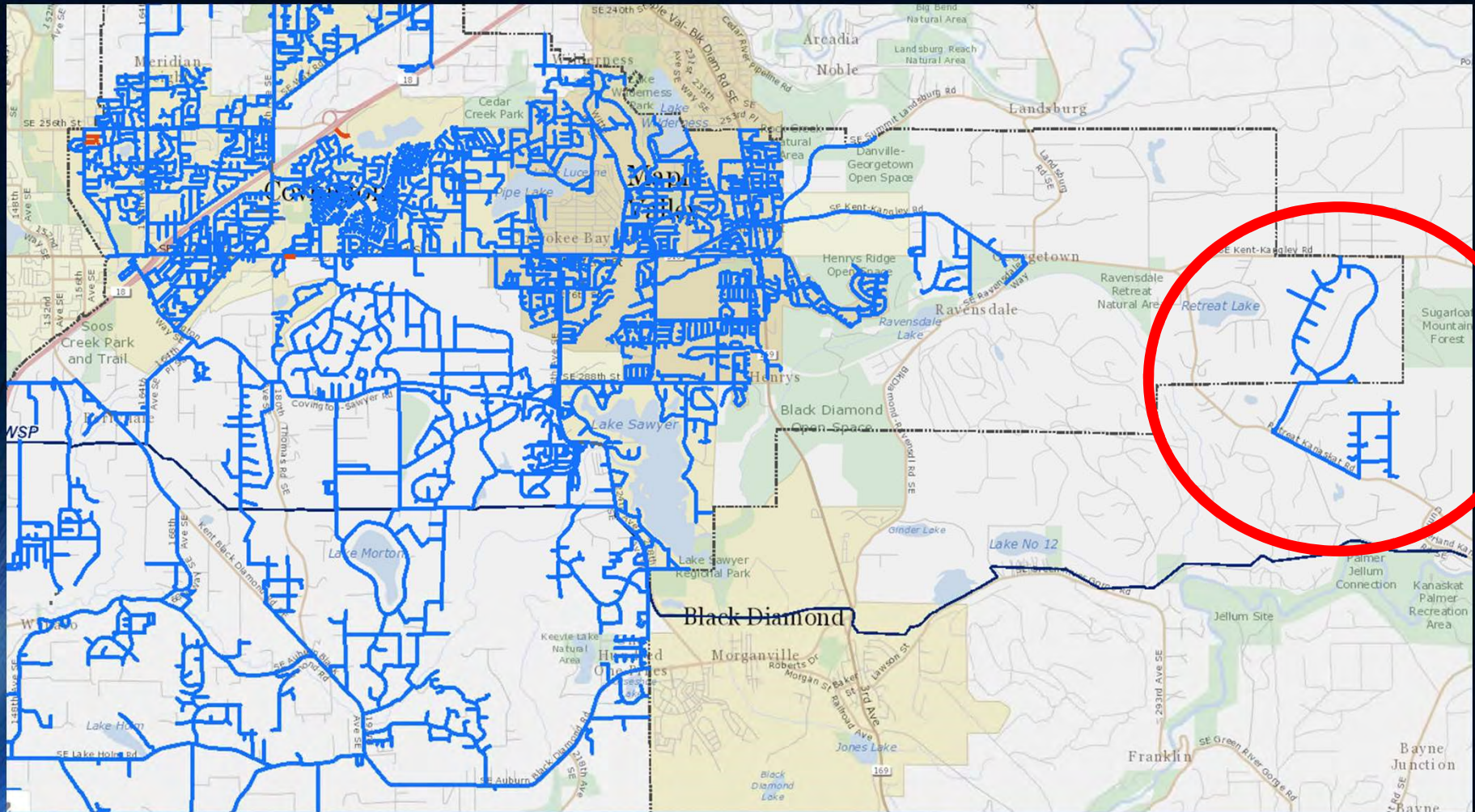
Report Participation: 99.7% (85,693 out of 85,967)

Covington Water District Asset Management Plan



1. What is the current state our assets?
2. What is our required level of service?
3. Which assets are critical to sustained performance?
4. What are the Best O&M and CIP investment strategies?
5. What is my best long-term funding strategy?

Sugarloaf Case Study





Covington Water District Meter Consumption Detail

1/1/2018 9/1/2023

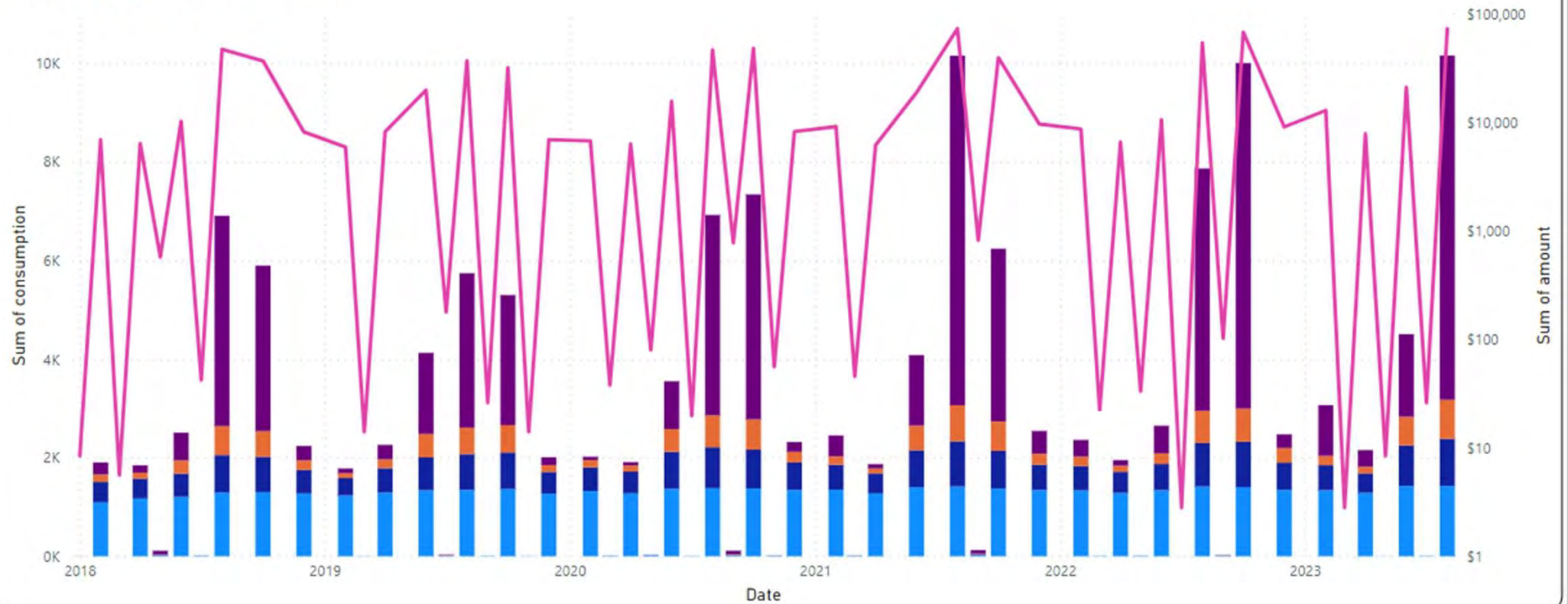
Rate Category

Water Sales - Sugarloaf

Filters

Consumption Details by Rate Tier

cons_level ● 1 ● 2 ● 3 ● 4 ● Sum of amount







Ultimate Solution:

- * New C-o tap to Tacoma supply line
- * Compose feasibility plan and recommendations for sizing based upon future demand



How do you sharpen your asset management strategies to go from good to great?





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