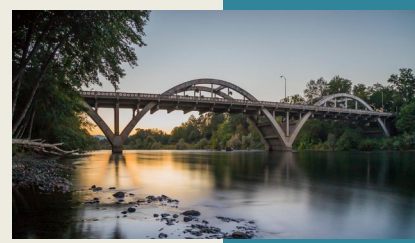




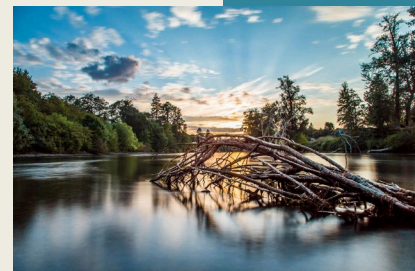
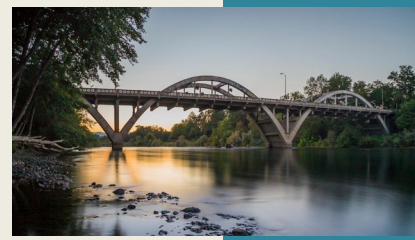
WA6207 Treatment Plant Replacement Update





Subject and Summary

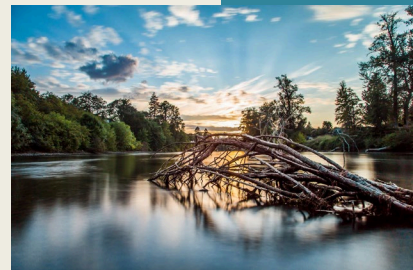
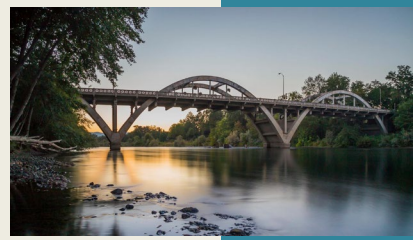
- Provide an update on Phase 1a services, technology selection, budget constraints, and project options
- Relationship to Council Goals:
 - Maintain, Operate and Expand our Infrastructure to Meet Community Needs
 - Build a replacement water treatment plant***





Background

- On September 15, 2021 City Council unanimously approved Phase 1a services with Slayden and Carollo to begin technology selection for the replacement water treatment plant
- Phase 1b services will be considered at a future meeting
 - Phase 1b services would include detailed design and value engineering workshops to ensure a best value project
- Following Phase 1b services the City Council will consider the Guaranteed Maximum Price (GMP) and whether or not to complete the construction of the much needed replacement water treatment plant





Background

- Three workshops were scheduled to begin the process of determining viable technologies for the Grants Pass project

TSW 1

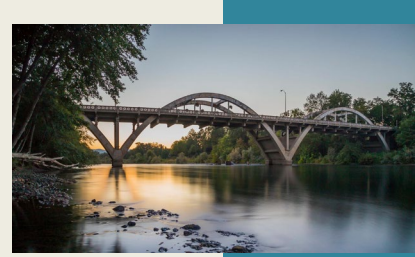
- WTP Performance Requirements
- WTP Operations Requirements
- Desired Treatment Outcomes
- Water Quality and Treatment Tools

TSW 2

- Non-Economic Criteria & Weighting
- Develop Viable Process Flow Schematics
- Select preferred process flow alternatives (up to 4)

TSW 3

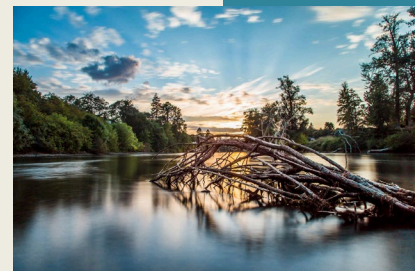
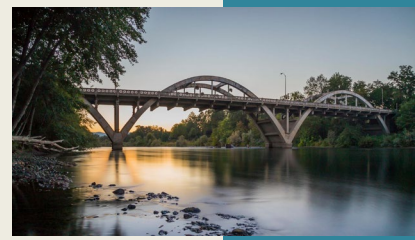
- Evaluate process flow alternatives with
 - Layouts
 - Staffing
 - Costs
 - Non-Economic criteria





Treatment Selection Workshop 1

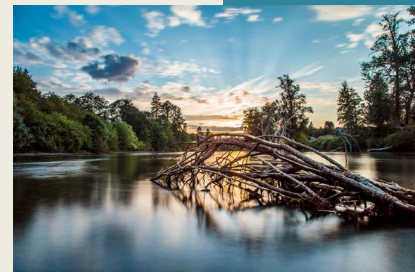
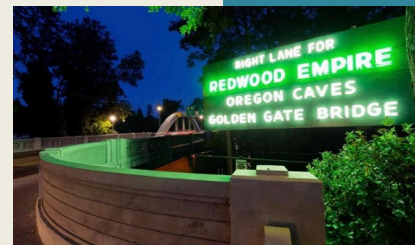
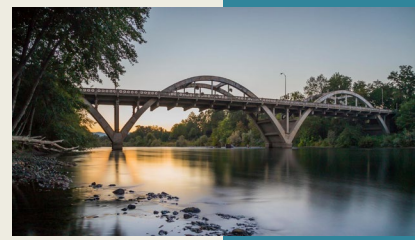
- Treatment Selection Workshop 1 (TSW 1) was held on October 24
 - TSW1 focused on Treatment plant capacity and levels of service and redundancy
 - How much water and at what rate
 - Hours of operation
 - Operator requirements
 - How much operations space, number of pumps, size of clearwells
 - Water quality goals
 - How clean the water should be – beyond meeting current regulations





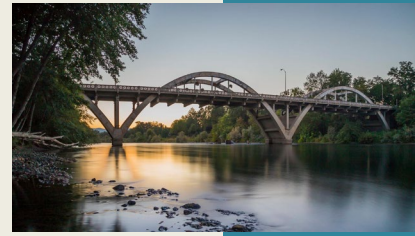
TSW 1 (cont'd)

- Outcomes from TSW1 included:
 - Plant sizing: 22.5 million gallons per day peak capacity vs. 20 million gallons per day firm capacity (summer)
 - Firm capacity of 10 million gallons per day in the winter
 - 24 hour per day operation unattended was high on the list of desirability
 - Redundancy requirements – fully installed vs. spare unit on the shelf
 - Chemical types and storage volume requirements
 - What operations could possibly remain at the current site (in addition to the intake structure)
 - Potential treatment techniques to combat current and future water quality concerns



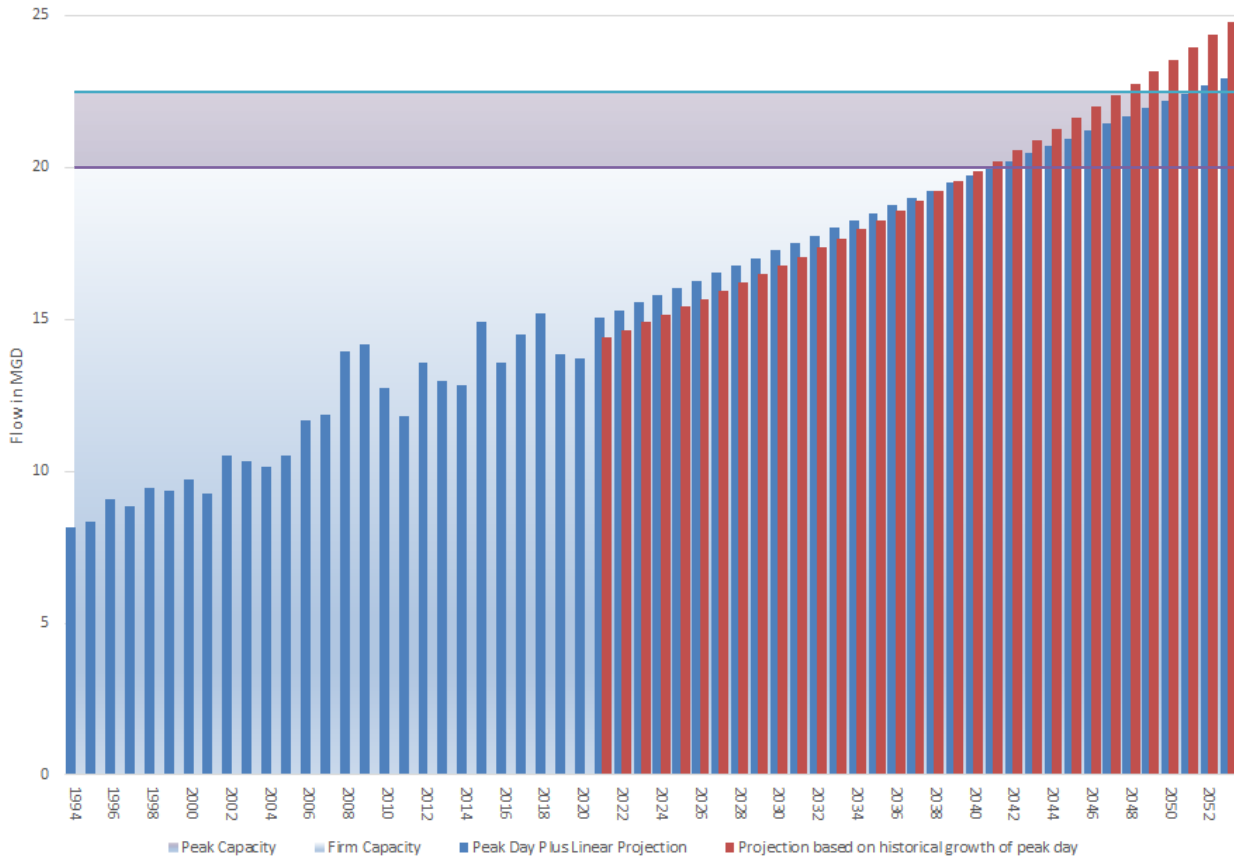


Capacity analysis

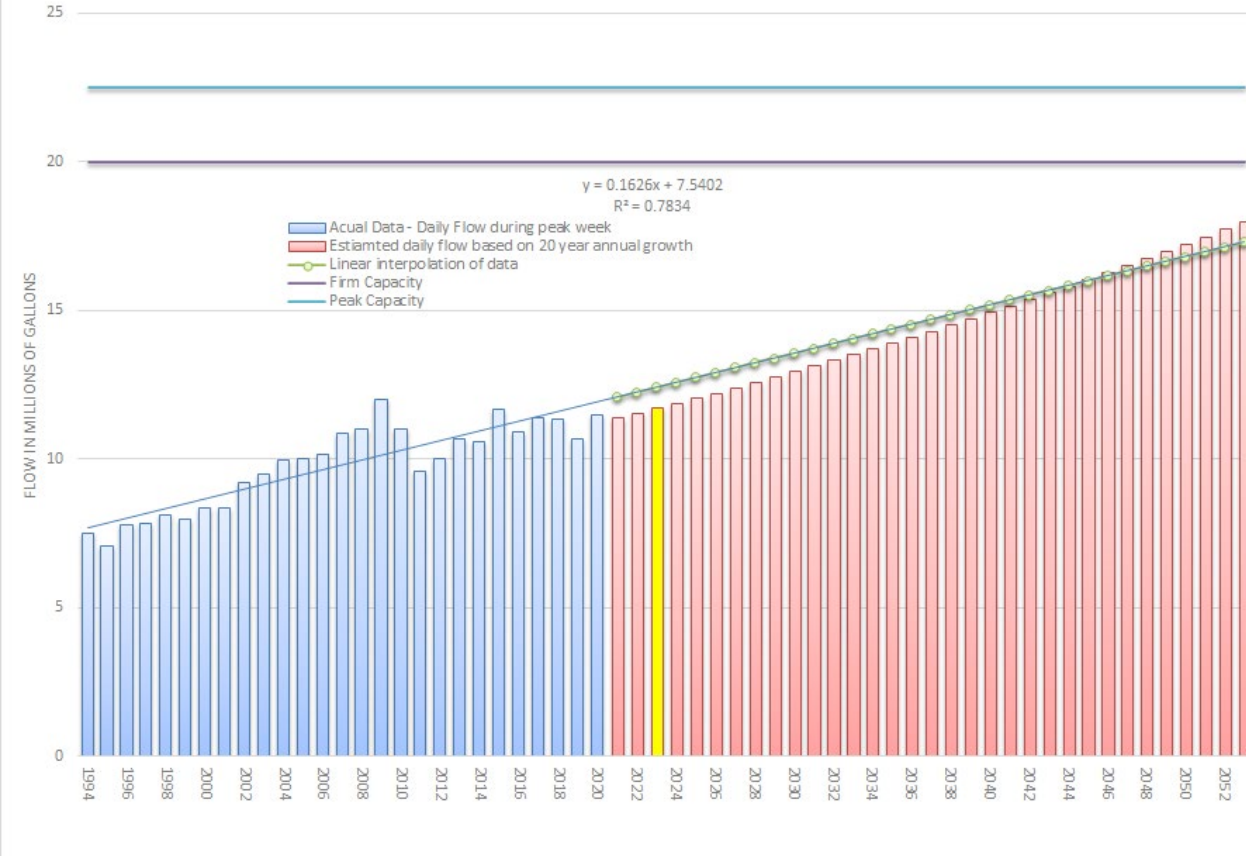


- Staff performed additional analysis to ensure that capacity assumptions met current and future community needs

Peak Day vs Plant Capacity



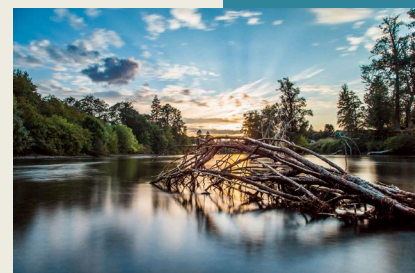
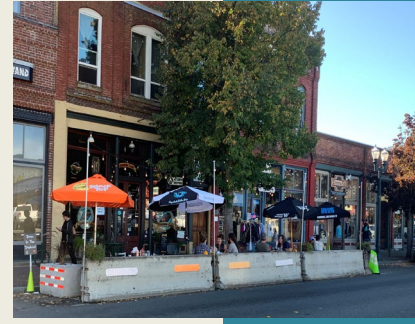
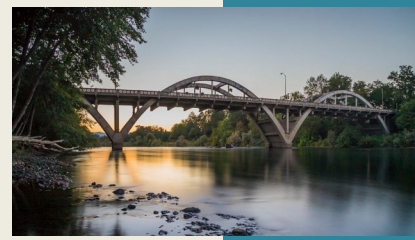
Average Daily Flow (Based on peak week flows)





Treatment Selection Workshop 2

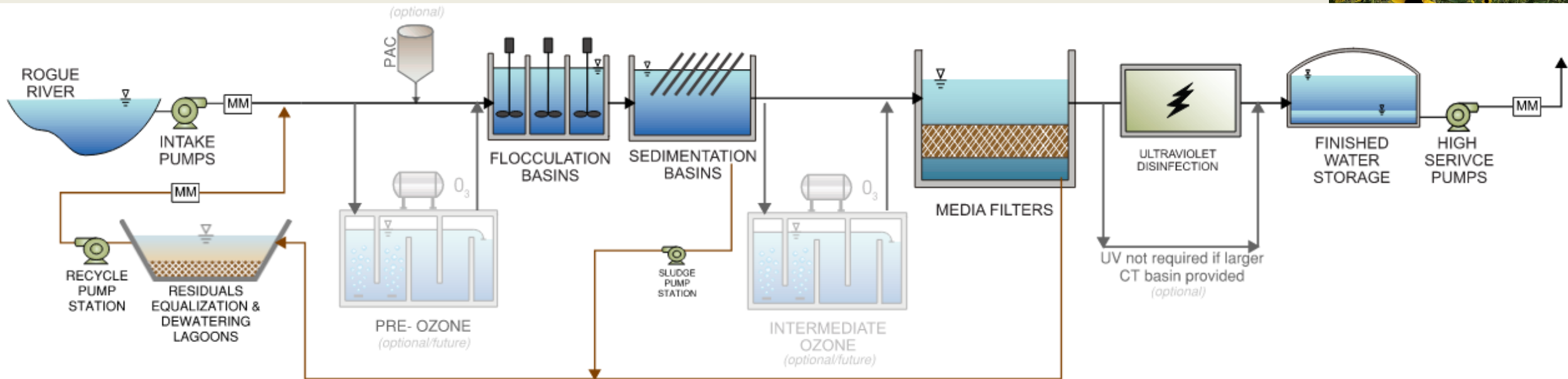
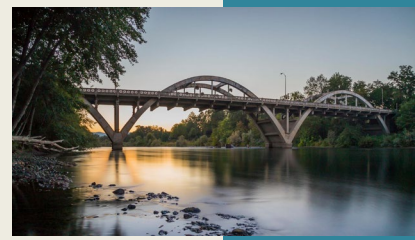
- Treatment Selection Workshop 2 (TSW 2) was held on November 9
 - This was to select up to 4 treatment trains to fully price and bring to Council for consideration
 - The team worked with interactive pricing worksheets to examine both conventional and membrane technology options
 - Also considered technologies previously eliminated including ballasted flocculation
 - This included developing non economic evaluation criteria for Council consideration
 - Items like energy intensity, operator and public safety, flexibility of process to adapt to future regulations





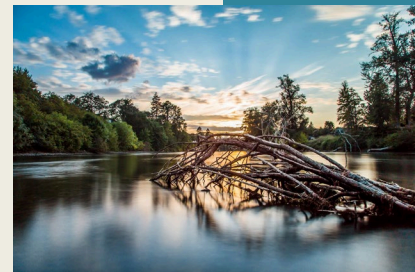
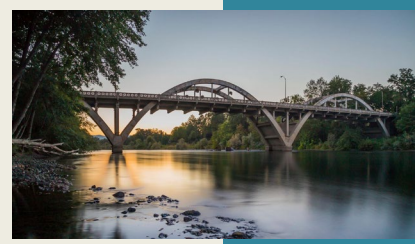
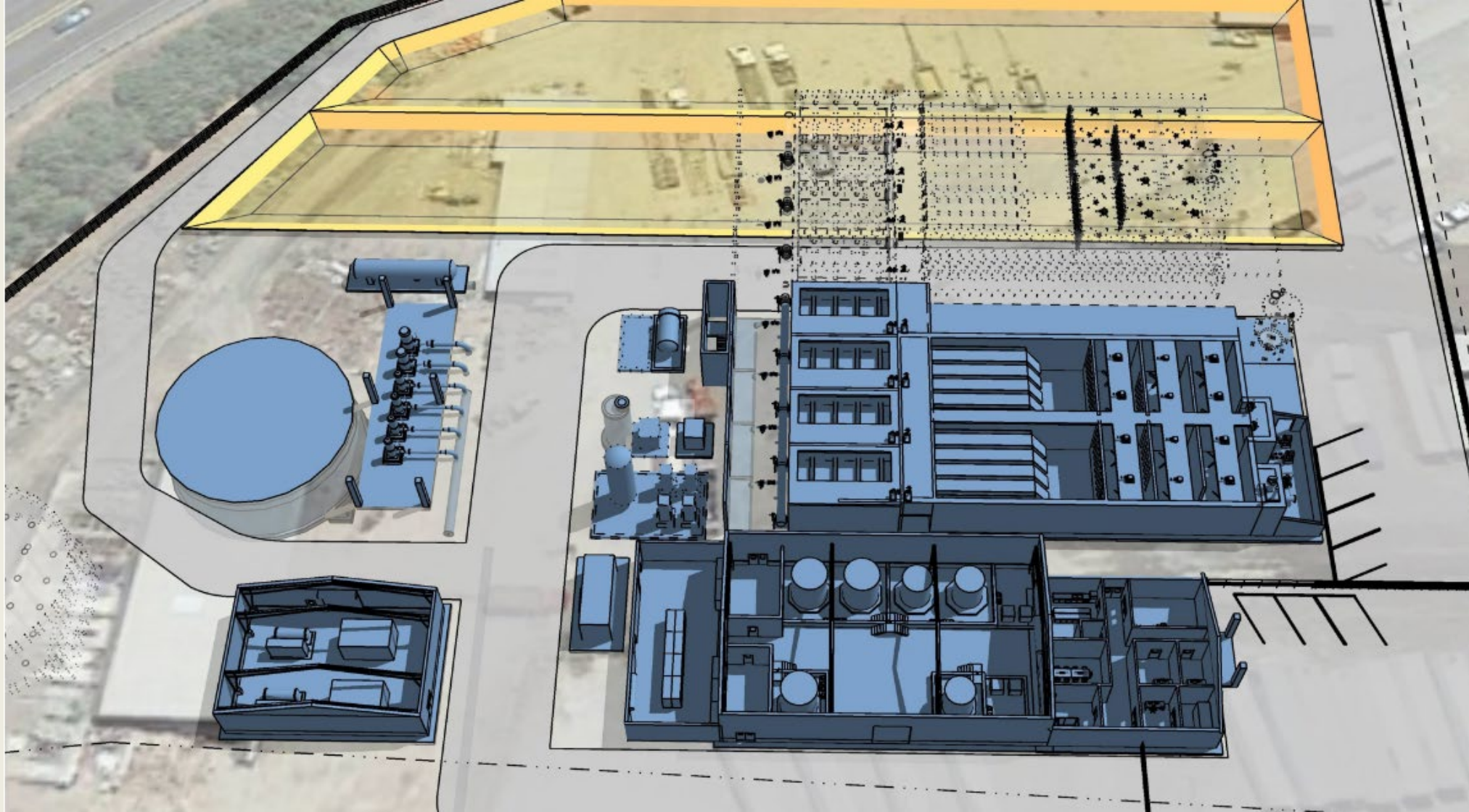
TSW 2 (cont'd)

- Various options were discussed along with potential budget and water quality impacts
- Conventional Treatment Train





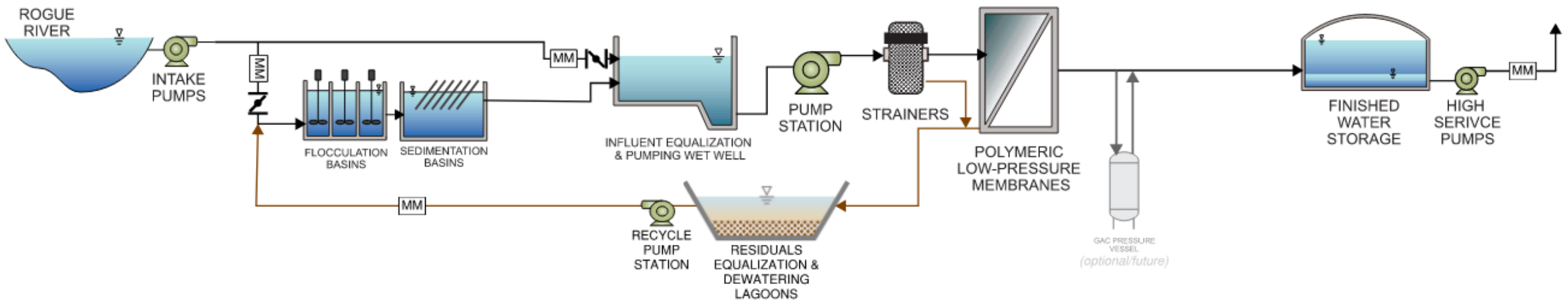
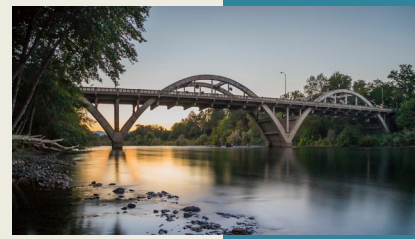
TSW 2 (cont'd)





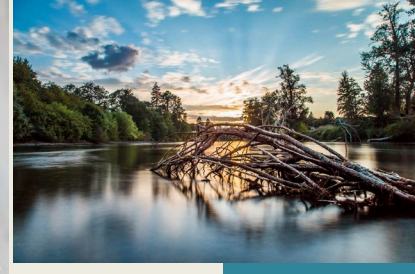
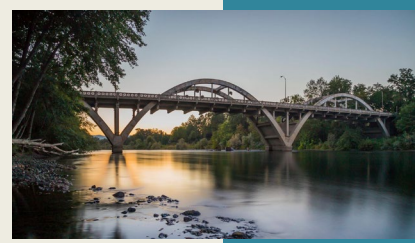
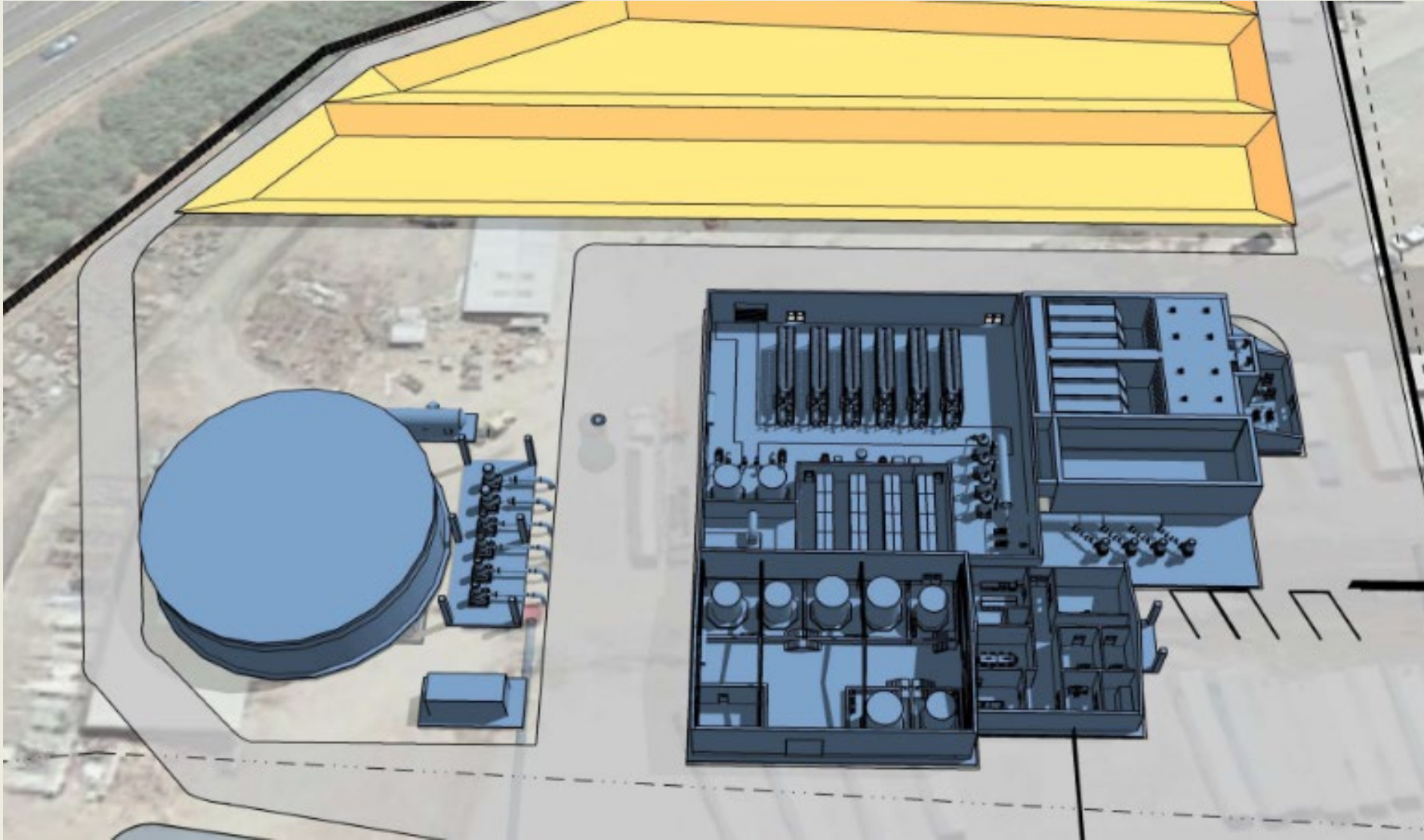
TSW 2 (cont'd)

- Membrane Treatment Train





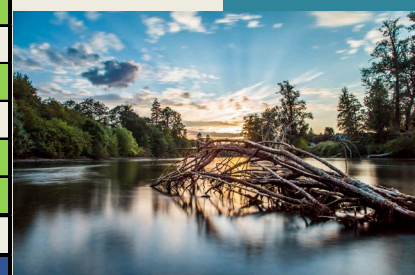
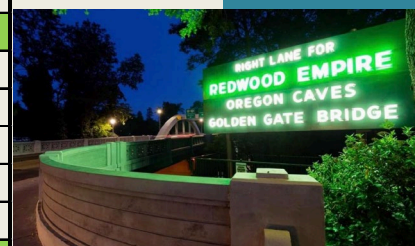
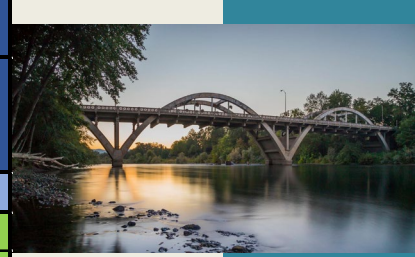
TSW 2 (cont'd)





- Conventional treatment plant costs exceeded the \$65,000,000 target for engineering and construction
 - NOTE: excludes key features that the team were hoping to implement to provided better water quality and future regulatory compliance

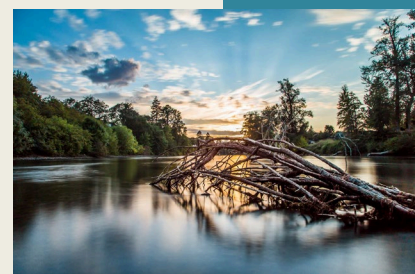
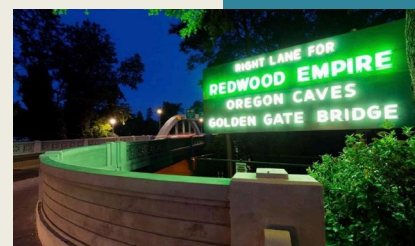
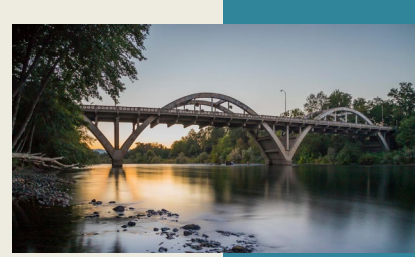
Conventional Treatment			
Module Number	Module Name	Include in Option	Total Capital Cost (All In \$)
Conventional			
A1	RW Pump Station	1	\$ 3,867,617
A1a	RW Pump Station Electrical (No Ozone)	1	\$ 397,459
A2	RW Standby Power	1	\$ 486,678
A3a	RW Pipeline - ALT 1	0	\$ 6,652,309
A3b	RW Pipeline - ALT 2 (ODOT)	1	\$ 5,526,959
A4	WTP Standby Power	1	\$ 2,376,704
A5	FW Piping	1	\$ 2,912,328
A6	Yard Piping	1	\$ 4,149,645
A7	Plant Drain PS	1	\$ 450,202
A8	Electrical	1	\$ 2,108,061
A9	Admin	1	\$ 3,244,371
A10	Finished Water Pump Station, Surge Tank - BG CW	1	\$ 5,770,014
A11	Chemical Building and CO2	1	\$ 7,171,308
F1	Flash Mix and Floc/Sed with Plates (22.5 mgd)	1	\$ 8,548,340
F2a	Ozone Generation	0	\$ 11,527,029
F2b	Ozone Contactor	0	\$ 2,711,431
F3	Filters	1	\$ 7,967,686
F4a	Clearwell, CT basin (below ground) 1.3 MG	0	\$ 5,770,727
F4b	Clearwell, CT basin (below ground) 0.5 MG	1	\$ 2,855,988
F5	WWEQ and PS (large)	0	\$ 1,726,422
F6	Flash Mix and Ballasted Flocculation	0	\$ 8,916,968
G1	Gravity Thickener	0	\$ 2,477,177
G2	Mechanical Dewatering Building	0	\$ 4,801,488
G3	Geobag Pad	0	\$ 644,887
G4	UV	1	\$ 2,273,253
G5	Powdered Activated Carbon	0	\$ 773,543
G7	Lagoons	1	\$ 4,645,087
G8	Pre-Sed	0	\$ 595,416
X1	Site Unsuitable Material Cleanup	1	\$ 1,422,126
X2	Site Finishes - RW PS & Plant	1	\$ 1,091,868
Total Capital Cost			\$67,265,693





- Membrane options also exceeded budgeted funds
 - Without key features that the team were hoping to implement to provide better water quality and future regulatory compliance

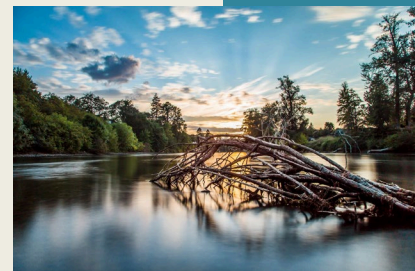
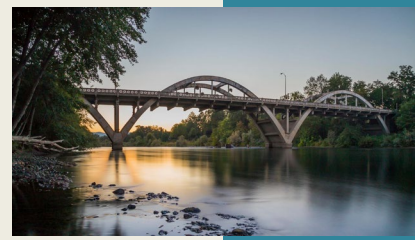
Membrane Treatment (No Pre-treatment)			
Module Number	Module Name	Include in Option	Total Capital Cost (All In \$)
Membranes			
A1	RW Pump Station	1	\$ 3,867,617
A1a	RW Pump Station Electrical (No Ozone)	1	\$ 397,459
A2	RW Standby Power	1	\$ 486,678
A3	RW Pipeline - ALT 1	0	\$ 6,652,309
A3	RW Pipeline - ALT 2 (ODOT)	1	\$ 5,526,959
A4	WTP Standby Power	1	\$ 2,376,704
A5	FW Piping	1	\$ 2,912,328
A6	Yard Piping	1	\$ 3,790,819
A7	Plant Drain PS	1	\$ 450,202
A9	Admin	1	\$ 3,244,371
A10	Finished Water Pump Station, Surge Tank - AG CW	1	\$ 4,827,996
A11	Chemical Building and CO2	1	\$ 6,704,389
M1	Sand Separator	0	\$ 954,623
M2	Membrane Influent EQ, Pumping, etc.	1	\$ 1,743,490
M3	LP Polymeric Membranes - no pre-tx	1	\$ 25,202,038
M4	LP Polymeric Membranes - with pre-tx	0	\$ 28,305,144
M5	Hybrid Membranes	0	\$ 31,071,904
M6a	Clearwell, CT basin (above ground) 1.0 MG	1	\$ 3,473,734
M6b	Clearwell, CT basin (above ground) 0.5 MG	0	\$ 1,862,218
M7	WWEQ and PS (small)	0	\$ 603,445
M8	Packaged Clarifier	1	\$ 1,463,428
G1	Gravity Thickener	0	\$ 2,477,177
G2	Mechanical Dewatering Building	0	\$ 4,801,488
G3	Geobag Pad	0	\$ 644,887
G4	UV	0	\$ 2,041,909
G6	GAC Pressure vessels	0	\$ 11,242,422
G7	Lagoons	1	\$ 3,915,524
G9	Pre-Sed	1	\$ 595,416
X1	Site Unsuitable Material Cleanup	1	\$ 1,422,126
X2	Site Finishes - RW PS & Plant	1	\$ 1,194,621
Total Capital Cost			\$73,595,898





Budget Implications

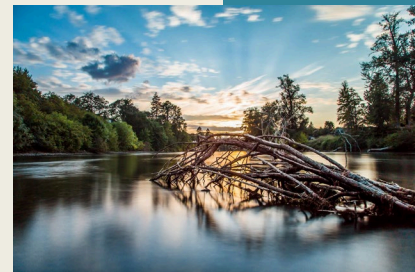
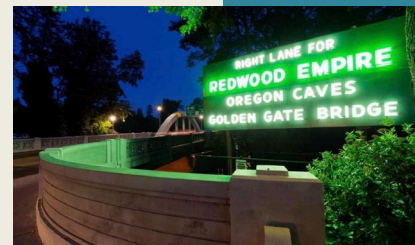
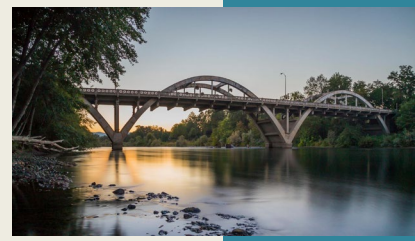
- Project WA6207 – Water Treatment Plant replacement has a budget of \$81,000,000
 - Estimated debt offering: \$56,100,000
- The rate structure adopted by Council in 2018:
 - Supports operations costs as currently projected
 - Allows for \$2,000,000 dollars per year in capital improvements
 - Less than ½ of the amount needed to support the currently adopted distribution system master plan
 - Supports \$56,100,000 in debt service at 3.5% interest
 - Debt service payments of ~\$3,050,000 per year
- Per Engineering News-Record (ENR) inflation since 2015 has increased 23%





Budget Implications

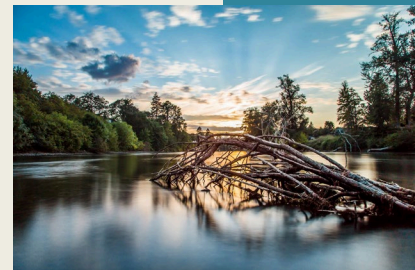
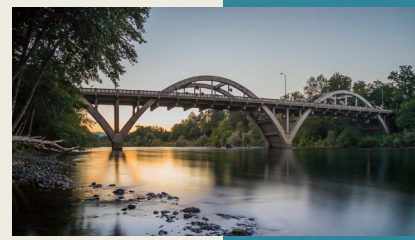
- \$7,116,580 has been spent to date on the project
 - Property acquisition: \$4,785,620
 - Relocation Expenses: \$258,454
 - Preliminary work/RFP Process: \$2,073,509
 - This includes three years of work with Council on delivery method selection, technology, RFP development, property identification
 - Includes work beginning in 2016 in support of the utility rate study





Budget Implications

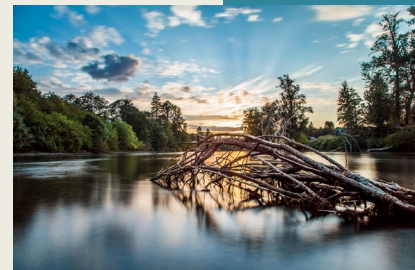
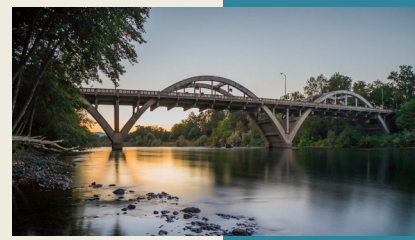
- Anticipated Future Expenses
 - Owners Representative/Construction oversight and special inspections: \$4,000,000
 - Design reviews, onsite construction manager, special inspections such as concrete, anchors, etc...
 - Internal Charges: ~\$1,700,000
 - This includes building permits/inspections/plan reviews, admin and GIS fees
 - Owners Reserve: \$0
 - Covers risks that were not anticipated
 - Usually would like to reserve 5% - 10% for this line
 - Remaining Phase 1 Services and Construction: ~\$68,000,000
 - Provides baseline conventional treatment option only





Solutions and Options

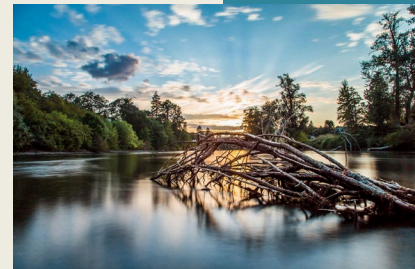
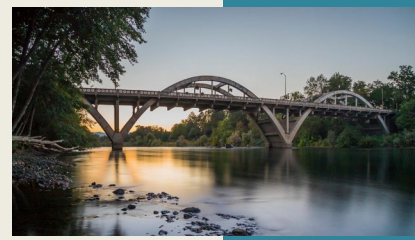
- On November 3, 2021 Council authorized staff to pursue a Building Resilient Infrastructure and Communities (BRIC) grant for pipeline and intake structure work
 - In the process of applying the pipeline was removed from the original application due to the perception that it could be a “stranded asset”
 - Working with consultants familiar with the program and State Office of Emergency Management staff have expanded the original scope of the grant application to include the entire project
 - This expanded application will be for \$50,000,000 – the maximum amount allowed by BRIC in a phased approach





Solutions and Options

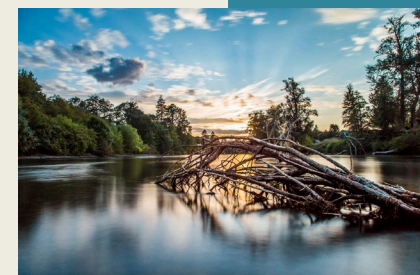
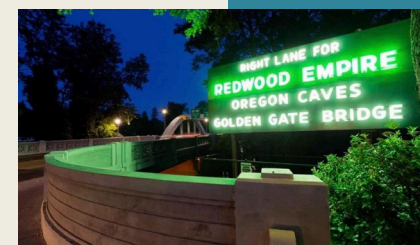
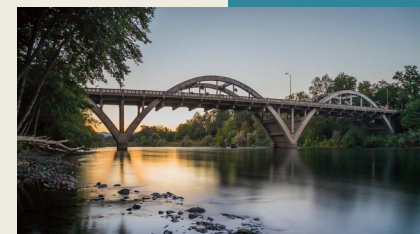
- The City has a very strong and compelling story to compete nationally for the BRIC grant
 - The existing water treatment plant is in the 100-year flood plain – BRIC is designed to move infrastructure that is vulnerable to disaster to safer locales
 - The existing water treatment plant is vulnerable to seismic events – BRIC is designed to make infrastructure needed to respond to a widespread emergency more resilient
 - The water filtration plant is the **ONLY** source of drinking water for the community and connection to an adjacent system is not feasible nor is the use of groundwater resources





Solutions and Options

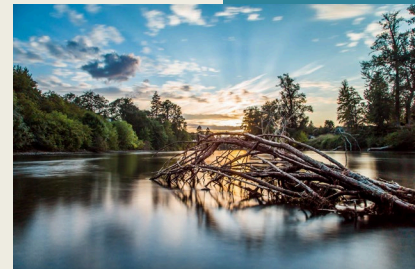
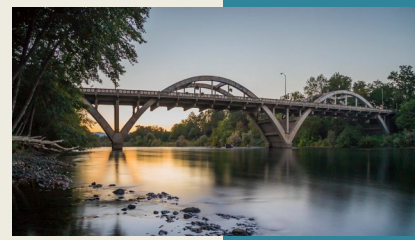
- In Fiscal Year 2020 application cycle 22 grants were awarded ranging in value from ~\$1.25 million to \$50 million
 - projects focused on protecting large and small community infrastructure, which helps ensure the continuity of vital services
 - benefits of these projects oftentimes extend to disadvantaged or underserved populations of larger communities, where access to health and human services, transportation and communications is a priority
- In Fiscal Year 2021 federal applicants will be competing for a share of \$919 million (\$500 million were awarded in 2020)





Solutions and Options

- Infrastructure Investment and Jobs Act (IIJA) is investing billions into infrastructure; over \$500,000,000 in Oregon in the next 5 years alone
 - These funds will be allocated through the State Drinking Water Revolving Loan Fund (SDWRLF)
 - Conversations between staff, Business Oregon and Oregon Health Authority Drinking Water Program have indicated the City is likely eligible for loans at 1% interest rates
 - At 1% interest the City could take on more borrowing without further increase to the rate structure



City of Grants Pass

Interest Cost Calculator

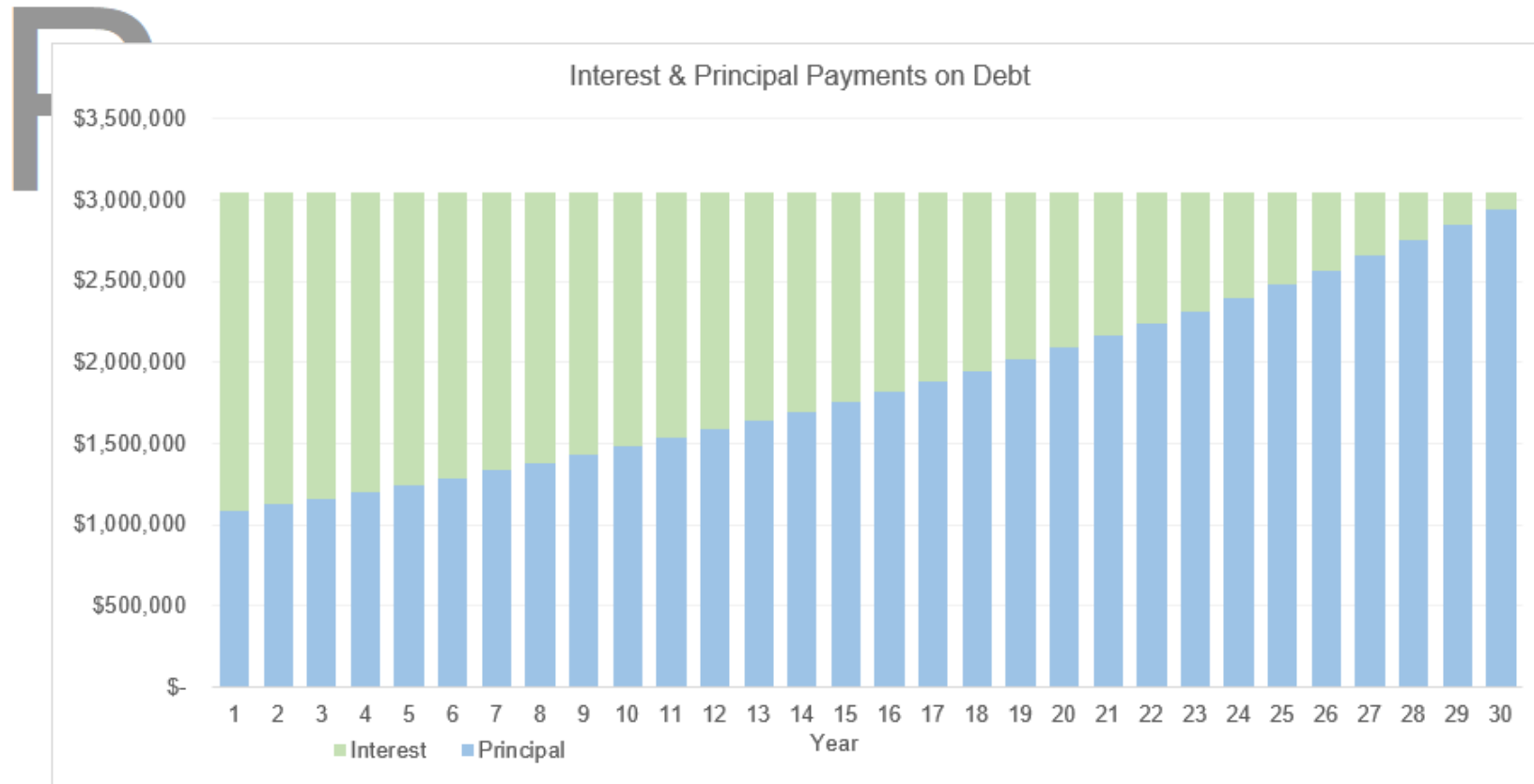
Inputs	
Issue Amount (\$)	\$ 56,100,000
Term (years)	30
Interest Rate (%)	3.5%

*

Summary	
Total Payments	91,506,951
Total Interest	35,406,951
Total Principal	56,100,000

Year	Total Payment	Interest	Principal
1	\$ 3,050,232	\$ 1,963,500	\$ 1,086,732
2	3,050,232	1,925,464	1,124,767
3	3,050,232	1,886,098	1,164,134
4	3,050,232	1,845,353	1,204,879
5	3,050,232	1,803,182	1,247,050
6	3,050,232	1,759,535	1,290,696
7	3,050,232	1,714,361	1,335,871
8	3,050,232	1,667,605	1,382,626
9	3,050,232	1,619,214	1,431,018
10	3,050,232	1,569,128	1,481,104
11	3,050,232	1,517,289	1,532,942
12	3,050,232	1,463,636	1,586,595
13	3,050,232	1,408,105	1,642,126
14	3,050,232	1,350,631	1,699,601
15	3,050,232	1,291,145	1,759,087
16	3,050,232	1,229,577	1,820,655
17	3,050,232	1,165,854	1,884,378
18	3,050,232	1,099,901	1,950,331
19	3,050,232	1,031,639	2,018,592
20	3,050,232	960,989	2,089,243
21	3,050,232	887,865	2,162,367
22	3,050,232	812,182	2,238,049
23	3,050,232	733,850	2,316,381
24	3,050,232	652,777	2,397,455
25	3,050,232	568,866	2,481,365
26	3,050,232	482,018	2,568,213
27	3,050,232	392,131	2,658,101
28	3,050,232	299,097	2,751,134
29	3,050,232	202,808	2,847,424
30	3,050,232	103,148	2,947,084
Total	\$ 91,506,951	\$ 35,406,951	\$ 56,100,000

Total Payments: \$91,506,951



City of Grants Pass

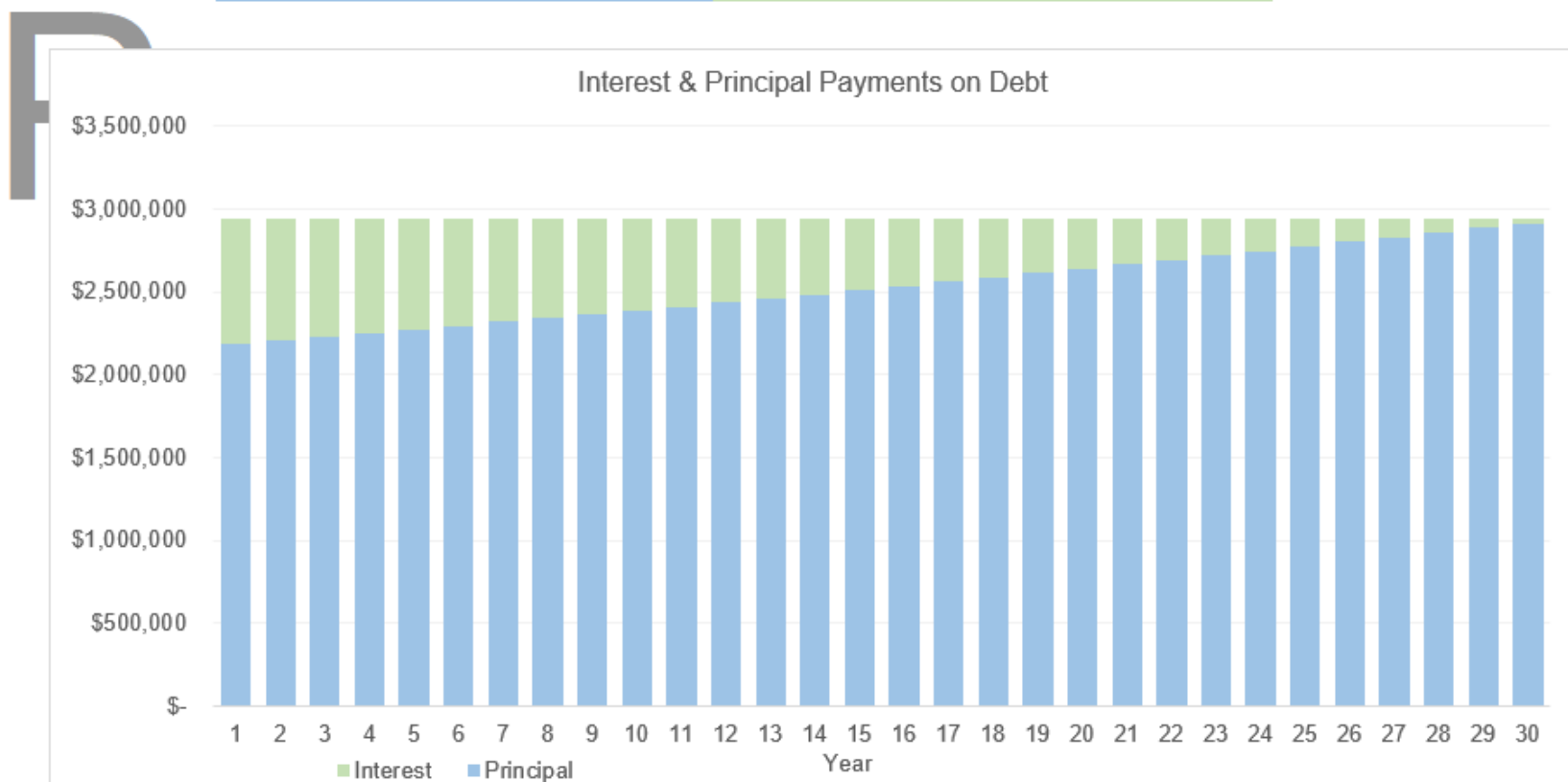
Interest Cost Calculator

Inputs	
Issue Amount (\$)	\$ 76,000,000
Term (years)	30
Interest Rate (%)	1.0%

Summary	
Total Payments	88,345,698
Total Interest	12,345,698
Total Principal	76,000,000

Year	Total Payment	Interest	Principal
1	\$ 2,944,857	\$ 760,000	\$ 2,184,857
2	2,944,857	738,151	2,206,705
3	2,944,857	716,084	2,228,772
4	2,944,857	693,797	2,251,060
5	2,944,857	671,286	2,273,571
6	2,944,857	648,550	2,296,306
7	2,944,857	625,587	2,319,269
8	2,944,857	602,395	2,342,462
9	2,944,857	578,970	2,365,887
10	2,944,857	555,311	2,389,545
11	2,944,857	531,416	2,413,441
12	2,944,857	507,281	2,437,575
13	2,944,857	482,905	2,461,951
14	2,944,857	458,286	2,486,571
15	2,944,857	433,420	2,511,436
16	2,944,857	408,306	2,536,551
17	2,944,857	382,940	2,561,916
18	2,944,857	357,321	2,587,535
19	2,944,857	331,446	2,613,411
20	2,944,857	305,312	2,639,545
21	2,944,857	278,916	2,665,940
22	2,944,857	252,257	2,692,600
23	2,944,857	225,331	2,719,526
24	2,944,857	198,136	2,746,721
25	2,944,857	170,668	2,774,188
26	2,944,857	142,927	2,801,930
27	2,944,857	114,907	2,829,949
28	2,944,857	86,608	2,858,249
29	2,944,857	58,025	2,886,831
30	2,944,857	29,157	2,915,700
Total	\$ 88,345,698	\$ 12,345,698	\$ 76,000,000

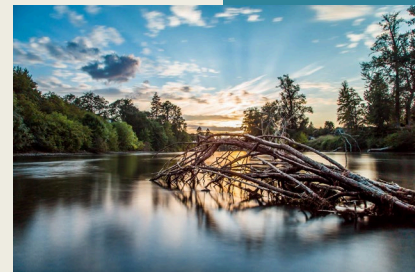
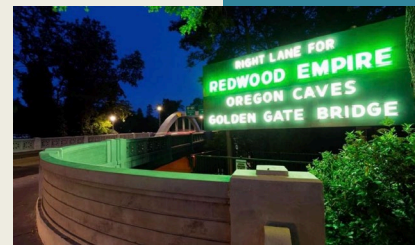
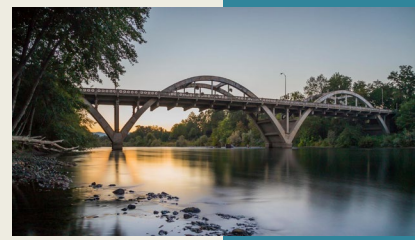
Total Payments: \$88,345,698





Solutions and Options

- It is recommended that Staff pursue as much funding through the SDWRLF as possible – up to ~\$76,000,000
 - Return to Council with technology selections that fit this revised budget
 - If \$76,000,000 is not available, borrow the maximum amount available and issue bonds on the remaining portion or seek other lower interest options
- It is recommended that Staff pursue up to \$50,000,000 in FEMA BRIC grants
 - This could allow Council to reduce the amount of borrowing and reduce fees to rate payers through a future rate reduction





Call to Action

- Call to Action Date: At Council discretion
- Alternatives:
 - Pursue up to \$76,000,000 in SDWRLF loans and return to Council with two technology options for selection and continue pursuing BRIC grant funding
 - Maintain \$56,100,000 in borrowing through SDWRLF and develop a technology option that will fit budget and continue pursuing BRIC grant funding
 - Pursue some other value of SDRLF loan amount

