

# **RESOLUTION 2024-072 AND RESOLUTION 2024-073 PLUM CREEK WATER PURIFICATION FACILITY (PCWPF) EXPANSION PROJECT**

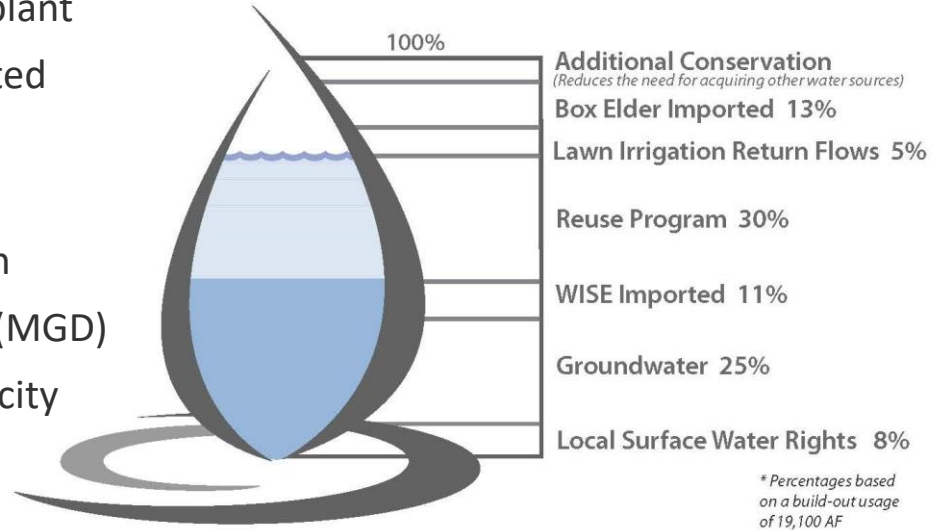
JULY 2, 2024



# PCWPF EXPANSION WP 2

## BACKGROUND

- Plant opened in 2013
- Original construction \$15M
- First renewable/surface water treatment plant
- Advanced treatment components completed 2021; \$31.5 M
- Created ability to reuse all water
- One of the most advanced plants in Nation
- Current capacity 6 million gallons per day (MGD)
- Expansion will add 6 MGD treatment capacity



# PCWPF EXPANSION WP 2

## BACKGROUND

- Awards
  - Best Regional Water/Environmental Project 2021 (Engineering News Record)
  - Water Treatment Plant of the Year 2021 (Rocky Mountain Section of American Waterworks Association)
  - Engineering Excellence Award 2022 (American Council of Engineering Companies)
- Tours
- Treats forever chemicals



Awards

# PCWPF EXPANSION WP 2

## KEY FEATURES

- Guaranteed Maximum Price Construction Management (GMPCM) project delivery
  - Preconstruction services awarded to Garney in December 2023
- Garney bids Work Packages (WP) and establishes Final Guaranteed Maximum Price (GMP)
  - WP #1 = long lead equipment packages/time critical underground work (May 2024)
  - WP #2 = Ozone system & membrane raw water feed and high service pumps
  - WP #3 = Remainder of project (April 2025)



General Site Plan



High Service Pumping

# PCWPF EXPANSION WP 2

## WP 2 KEY FEATURES

- WP #2 rebid Ozone equipment and vertical turbine (VT) pumps
- New Ozone (Pinnacle) & VT Pump bid pricing lower than WP #1
- Pinnacle's base bid includes 3 ozone generators. Bid alternate adds 2 replacement generators
  - Maintains operating efficiencies
  - More reliable and simpler to operate
  - US based (parts stocked)



Liquid Oxygen Storage



Ozone Generators



# PCWPF EXPANSION WP 2

## WP 2 KEY FEATURES

- WP #2 Rebid Cost Savings
  - VT Pump bid is \$180,372 less than WP #1
  - Ozone base bid is \$54,120 less than WP #1
- Proposed bid alternate to replace existing ozone generators with two new Pinnacle units
- Cost for 2 added Pinnacle ozone generators approximately \$677,000
  - Operating efficiencies equate to 10 year pay back
- Rebid savings + applied 5.8% contingency equal no change to overall GMP established at \$64,443,732



Stainless Steel Ozone Loop Reactor

# PCWPF EXPANSION WP 2

## WORK PACKAGE 2 SUMMARY

### Budget

- WP #2 Final GMP = \$6,739,585 (no contingency)  
(Ozone System and Pumping Equipment)
- Total expected project cost = \$74,088,258  
(Engineering, Construction, Permitting)

### Schedule

- Order Equipment Packages upon award
- Begin yard pipe construction winter 2024
- Overall project completion, Spring 2028



VT Pump install, 2012

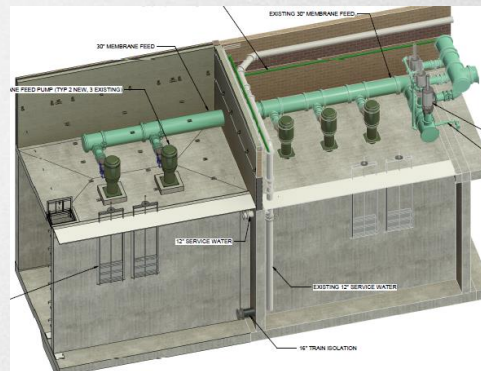
# PCWPF EXPANSION CM SERVICES

## CONSTRUCTION PHASE ENGINEERING BACKGROUND

- Burns & McDonnell Engineering (BMcD) awarded design through competitive process
  - Awarded design April 2023
  - \$2.5M for Design (85% complete)
  - Currently within budget
- BMcD Construction Phase services encompass all WP's



GAC system



New membrane feed pumps



# PCWPF EXPANSION CM SERVICES

## CONSTRUCTION PHASE ENGINEERING SUMMARY

### Engineer of Record

Burns & McDonnell Engineering

### Budget

- Construction Phase Engineering Services, \$3,824,954 + \$191,248 (5% contingency)=\$4,016,202

### Schedule

- October 2024 to Spring 2028



PCWPF under construction in 2012

# PCWPF EXPANSION WP2 AND CM

## RECOMMENDATIONS

- Castle Rock Water Commission
- Staff



# PCWPF EXPANSION WP2 AND CM

## PROPOSED MOTIONS

*“I move to approve the Resolution 2024-072 as introduced by title.”*

*“I move to approve the Resolution 2024-073 as introduced by title.”*

## ALTERNATIVE MOTIONS:

*“I move to approve the Resolution as introduced by title, with the following conditions: (list conditions).”*

*“I move to continue this item to the Town Council meeting on \_\_\_\_date to allow additional time to (list information needed).”*