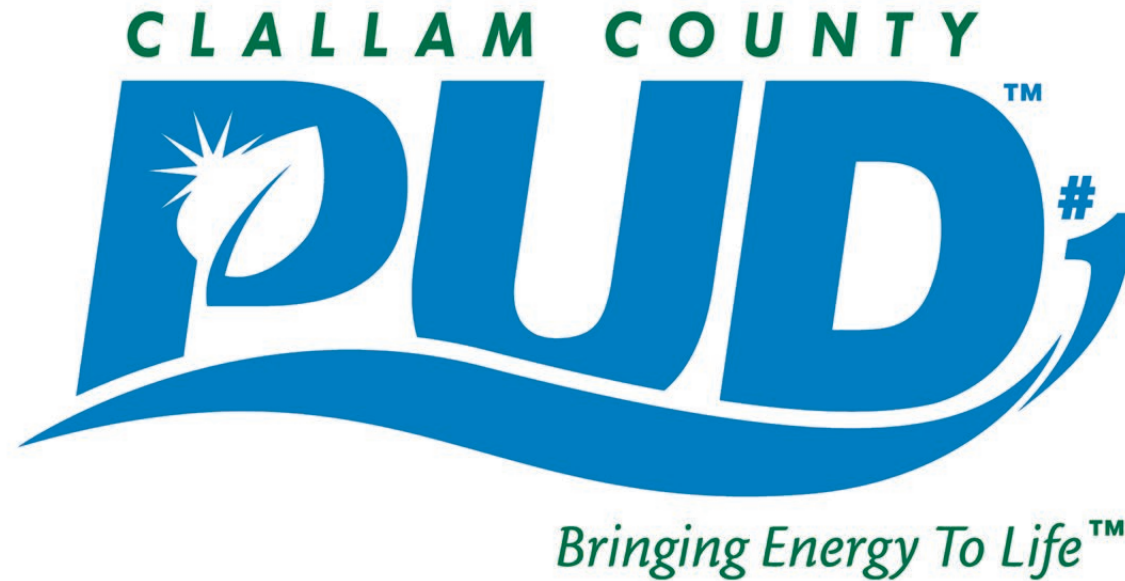


Water Department CIP and Cost of Service



ASCE 2021 REPORT ON NATIONAL WATER INFRASTRUCTURE: C- RATING

- TYPICAL WATER MAIN LIFESPAN: 50-100 YRS
- 27% INCREASE IN WATER MAIN BREAK RATES BETWEEN 2012 AND 2018.
- SMALLER UTILITIES CAN HAVE UP TO TWICE AS MANY PIPE BREAKS THAN LARGER UTILITIES, IN PART BECAUSE SMALLER UTILITIES OFTEN HAVE MORE MILES OF PIPE PER CUSTOMER AND HAVE A SMALLER CUSTOMER BASE FROM WHICH TO COLLECT REVENUE, RESULTING IN LESS FUNDS FOR REPAIR AND ASSET MANAGEMENT.
 - PUD HAS 33 CUSTOMERS PER MILE OF WATER MAIN VS. 264 NATION AVG.
- BY 2019 UTILITIES WERE REPLACING BETWEEN 1% AND 4.8% OF THEIR PIPELINES PER YEAR ON AVERAGE (EQUAL TO 1.5 MILES TO 7.2 MILES PER YEAR AT PUD).

ASCE 2021 REPORT ON NATIONAL WATER INFRASTRUCTURE: C- RATING



**Drinking
Water**



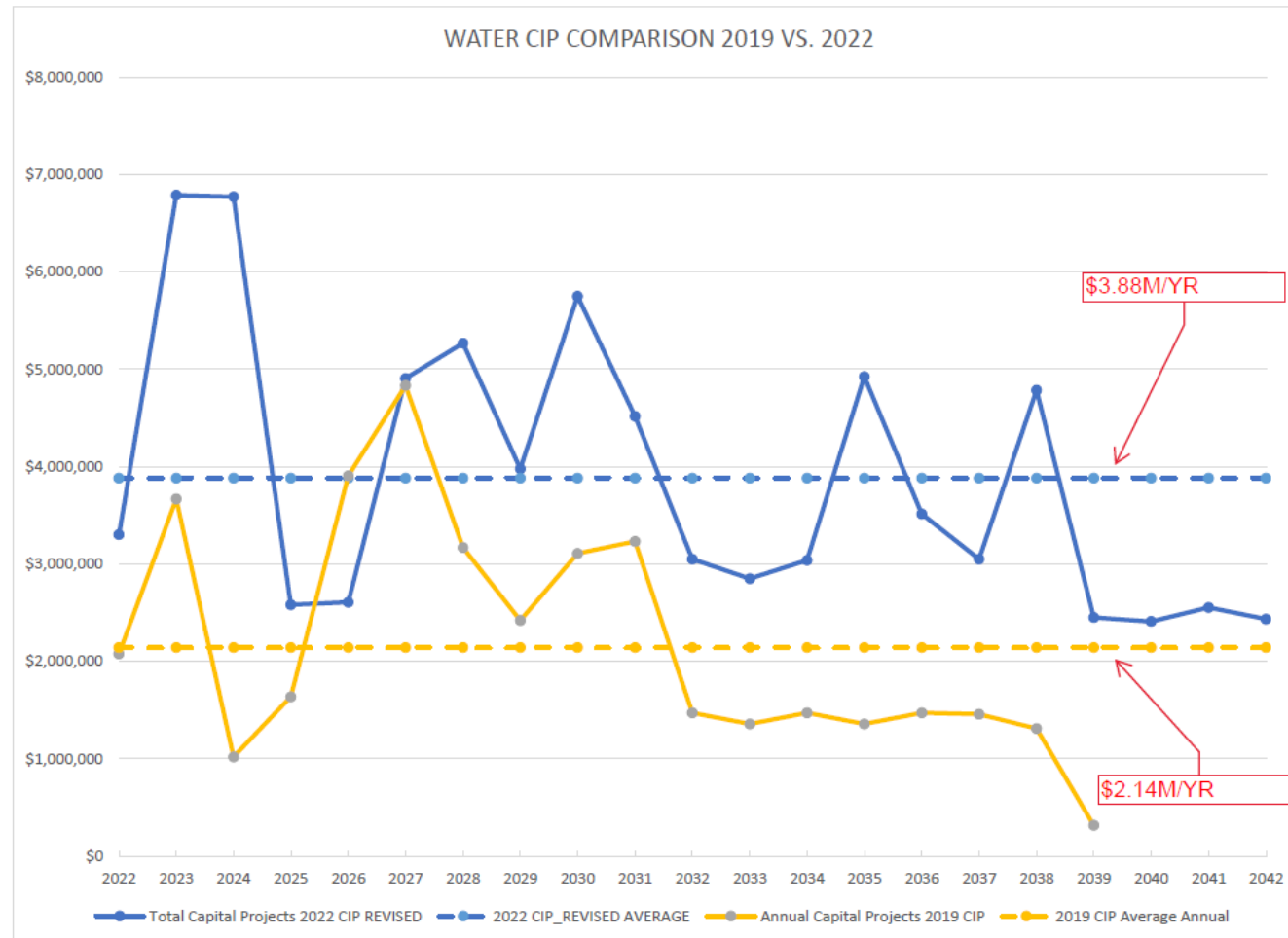
RECOMMENDATIONS TO RAISE THE GRADE

- Triple the amount of annual appropriations to the Drinking Water State Revolving Fund program and fully fund the Water Infrastructure Finance and Innovation Act program and the U.S. Department of Agriculture Rural Development programs.
- Utilities should implement asset management programs, tools, and techniques to evaluate asset condition and risk, and to prioritize capital and O&M decisions; states should provide funding, training, and technical assistance for asset management programs.
- Increase utilities' resilience by integrating smart water technologies such as machine learning software and real time data sensors into drinking water infrastructure systems.
- Eliminate the state cap on private activity bonds for water infrastructure projects to bring an estimated \$6 billion to \$7 billion annually in new private financing.
- Increase federal and local support to find, train, and retain the next generation of the drinking water sector workforce to help offset the large number of expected retirements.
- Utilities need to conduct revenue forecasting models to determine the necessary rate revenues that reflect the true cost of water that is needed to provide safe, reliable drinking water and more resilient infrastructure.
- Develop and fund affordability programs to ensure that low-income and vulnerable communities do not bear a disproportionate burden of rate increases.
- Support voluntary partnerships for small community water systems in need.

BASIS OF CIP INCREASE BETWEEN 2019 AND 2022

- SIGNIFICANT INCREASE IN EXPENDITURES RELATED TO REPLACEMENT
 - REFOCUSING ON ASSET MANAGEMENT AND MAINTAINING OR IMPROVING RELIABILITY, LEVEL OF SERVICE AND SAFETY
 - REDUCE RISKS TO PUBLIC AND PRIVATE PROPERTY ASSOCIATED LEAKS
 - REDUCE LOST WATER AND MAXIMIZE EFFICIENT USE OF WATER RIGHTS
- REFOCUS ON ACHIEVING SOURCE OF SUPPLY AND STORAGE ADEQUACY IN 20 YR CIP
 - LARGE STORAGE AND SOURCE OF SUPPLY PROJECTS IN CLALLAM BAY/SEKIU, CARLSBORG AND EVERGREEN
- GUT CHECK ON REPLACEMENT COSTS
 - CHEAPER TO BUILD NEW MAINS THAN REPLACE EXISTING MAINS

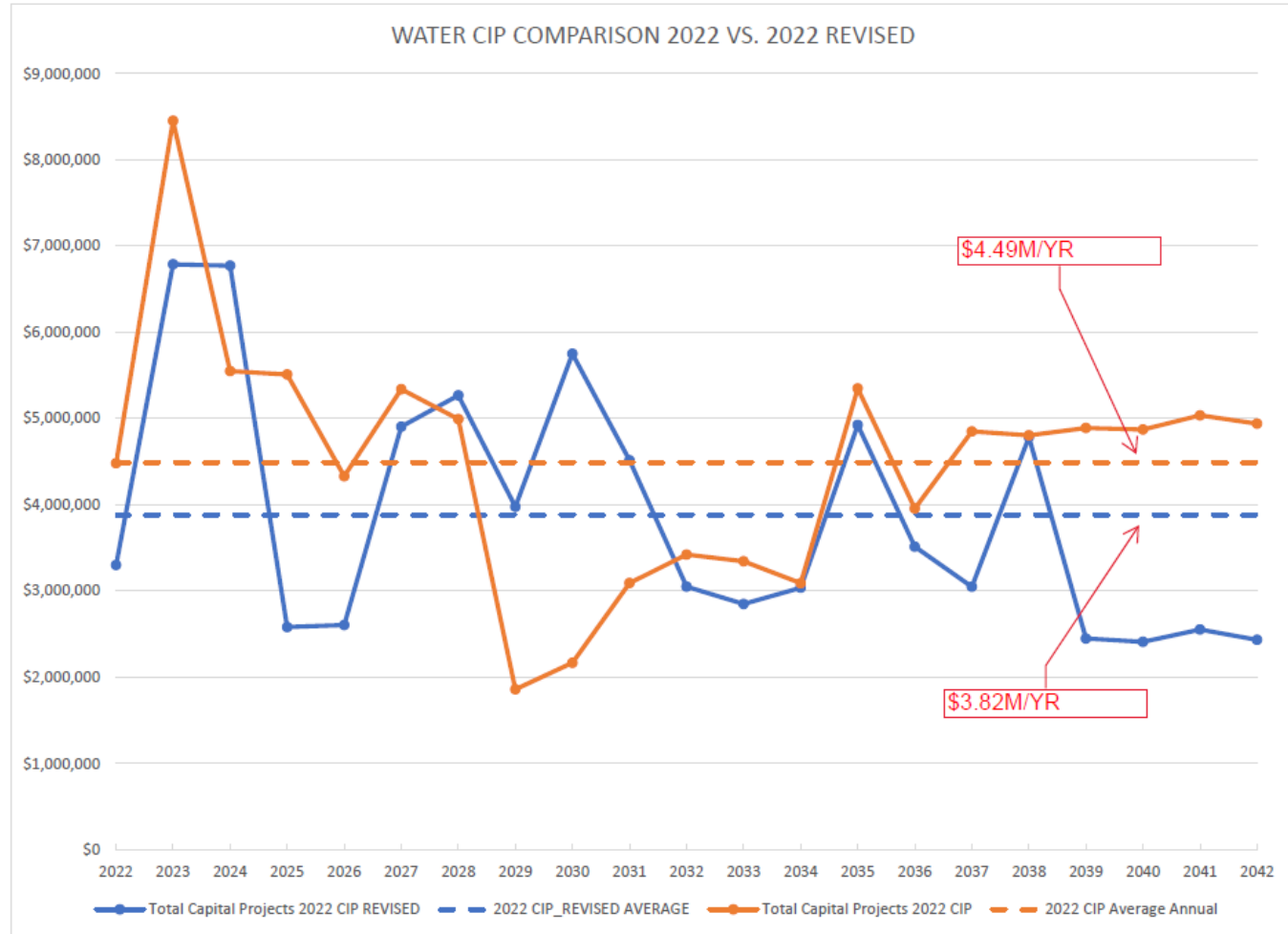
CIP INCREASE BETWEEN 2019 AND 2022



CIP INCREASE BETWEEN 2019 AND 2022

- 20 YR CIP INCREASE FROM \$44.97M TO \$81.53M
 - INFLATION: INCREASE \$44.97M BY ENR CONSTRUCTION INDEX → \$57.61M
 - CB/CQ COST INCREASE FROM \$2.5M TO \$7.8M
 - OTHER MAINS REPLACEMENT PROGRAM INCREASE FROM \$17.94M TO \$29.43M (2022-2039)
 - WSDOT CULVERT REPLACEMENT INCREASE FROM \$.47M TO \$1.35M (2019-2024)
 - CARLSBORG SYSTEM EXPANSION & WATER RIGHT (PH 1 & 2 \$3.56M)
 - 2021 FEMA STORM (\$3.86M)
 - RECURRING CAPITAL (\$.19M/YR TO \$.41M/YR)

CIP REVISIONS IN 2022



CIP REVISIONS IN 2022

- CIP REVISIONS IN 2022
 - DECREASE 20 YR TOTALS FROM \$94.34 M TO \$81.53M
 - RE-STRATEGIZING PROJECTS
 - PHASED APPROACH TO LARGE CAPITAL PROJECTS
 - RIGHT SIZING STORAGE IMPROVEMENT PROJECTS
 - CONSOLIDATING SOURCE IMPROVEMENT PROJECTS TO MAXIMIZE GALLONS/\$

STRATEGIES FOR FUTURE CIP SAVINGS

○ IN HOUSE ENGINEERING TO LEAD WATER MAIN REPLACEMENT PROGRAM

- 15%-30% OF MAIN REPLACEMENT COSTS HAS HISTORICALLY BEEN 3RD PARTY ENGINEERING CONSULTATION.
- ANNUAL MAIN REPLACEMENT ENGINEERING COSTS (BEGINNING IN 2027)
 - ~\$2M → 22.5% → \$450,000
- ANNUAL COST FOR CIVIL ENGINEERING FTE (FULLY BURDENED LEVEL 23): \$160,323-\$260,508

○ IN HOUSE CONSTRUCTION CREW TO PERFORM WATER MAIN REPLACEMENT PROGRAM

- CURRENT AVG. COST FOR MAIN REPLACEMENT: \$1.58M/MILE
- ESTIMATED ANNUAL COST FOR 3 FTE CREW (FULLY BURDENED): \$530,400/YR
- AVG MATERIALS COST FOR 8" WATER MAIN: ~\$415,000/MILE
- BREAKEVEN POINT → 3,160 LF INSTALLED PER YEAR