



The following questions have been posed by Commissioners prior to the scheduled Board Meeting on November 2, 2021. Staff responses are included below and are sorted by Agenda topic.

2022 Proposed Budgets and Prices (HART)

Why are we proposing to reduce the charges to Willamette Water Company and not others?

RESPONSE: *The differences among the allocation of costs for the respective wholesale customers are largely a function of changes in costs relative to the differences in usage profiles for average and peak usage year to year, as reflected in the COSA. The proposed change in Willamette Water Company now more closely aligns with the Water Districts. Per the terms of the contract, prices have historically been adjusted based on COSA results for both Water and Electric contract customers. In addition to a COSA, Water wholesale contracts also require Board approval. The results of the 2022 budget COSA and rate proposal are summarized below.*

Customer	Current (all-in costs / kgal)	Proposed (all-in costs / kgal)	Notes:
Water Districts	\$3.23	\$3.30	Increase consistent with other classes due to higher overall costs
Willamette Water Co.	\$4.09	\$3.98	Higher cost due to customer and usage differences but lower differential than in prior analysis due to differences in relative peak and average usage. This more closely aligns WWC with other districts.
Veneta	\$1.55	\$1.75	Increased due to higher base level vs. excess demand

Do the figures on the city comparator chart represent SUB’s in-process raising of water rates by 5% and electric rates by 2%?

RESPONSE: *No, the comparator graphs include EWEB existing, EWEB proposed, and comparator existing rates as they are published and in effect today. Going forward we can look to provide anecdotal indications of other comparators and anticipated rate changes.*

COSA: How much does EWEB pay for CILT? What relative % does that equal of our average customer? Does Springfield Utility Board pay a CILT?

RESPONSE: *EWEB pays 6% Contribution in Lieu of Taxes (CILT) on electric retail sales and an additional fixed contract amount of \$825,000 for electric wholesale sales. For 2022, the Electric Utility budgeted \$13.2 million in CILT payments to the city of Eugene. CILT is only levied on electric revenues. The average residential electric customer, using 1,050 kWh per month, will pay approximately \$6.57 in CILT as part of their \$117 monthly electric bill. Springfield Utility Board, like many utilities, pays 3% which is consistent with the minimum Oregon Statute.*

Pricing: “2022 BGR Price for Medium General Service Customers: \$0.003 (was \$0.013) per kilowatt hour, 2022 BGR Price for Large General Service Customers: \$0.000 (was \$0.010) per kilowatt hour”. There is a reduction in both incentives. The second one is now zero, does that basically mean we will get rid of this incentive? How many customers use this? Will their incentive now be reduced, or are some locked in for a time?

RESPONSE: The Business Growth & Retention (BGR) Price was developed several years ago with the intent of benefiting existing customers by providing an incentive for business growth. The structure was established by dividing the difference between wholesale and retail market prices and “splitting the difference” between the participants and EWEB’s customer owners. Therefore, if market prices increased (i.e. there was less benefit to split) then the incentive would be reduced or eliminated. This was an important aspect of the program development to avoid potential subsidies between customers classes. The rate is established annually, and customers are only locked in one year at a time.

One customer is currently participating in the program and two have taken advantage of it since inception. Customer Relationship Managers offer the program when applicable and while there are a few potential candidates, there are no firm commitments at this time.

Table 5 Forecast of Water Utility Revenue Requirement Shortfall by Price Class for 2022-2024 Test Periods: Why is there such a major shortfall by 2024?

RESPONSE: The primary driver for the revenue requirement shortfall by price class is capital spending to replace aging infrastructure as well the development of a second treatment plant. The second treatment facility is creating the majority of the price pressure in 2023 and 2024.

EWEB HQ Property Solicitation Process (LAWSON/KAH)

Weren't we going to get a memo that outlined the process that 4J used? I recall that Commissioner Brown said there was already a blueprint for how to deal with a similar situation and we expressed interested in seeing how they did it.

RESPONSE: The 4J School District used a Request for Proposals (RFP) process, such as the second option described in the Board’s backgrounder (Option to Focus on Real Estate Market at Large). As an example, Commissioners can visit 4J’s website to [view a comprehensive collection of documents related to the acquisition of the Civic Stadium properties](#), including the RFP, proposals, previous property disposition process, and more. Based on Commissioners’ preferred approach, Management will prepare draft documents modeled after the school district’s successful framework, this information will be provided to the Board in January for feedback and refinement.

Electrification Impact Analysis Report - Final Results from Phase 2 (LAWSON/CAPPER)

"New building electrification is outside the scope of the analysis" - What does this mean if the City of Eugene adopts a policy that states all new residential housing must be electric only? If I'm reading it correctly, part of the analysis hinges on participants choosing to electrify. If the City mandates electric only in all new housing, then that cost is just incorporated into the total cost of the home, and it makes that decision moot.

RESPONSE: The Electrification Impact Analysis Studies focused on electric conversion of existing natural gas buildings rather than new construction because it represents a larger, more-impactful segment (approximately 20,000 Single-Family and Multi-Family Dwellings), and the pace of new construction is difficult to estimate. However, if we use past trends, between 2010 and 2021 EWEB added an average of 838 new connections (residential and commercial) per year with a maximum of ~3,000 in one year. Should the City of Eugene mandate all new construction be electric, assuming 838 new standard heat pump connections per year, we would estimate an annual peak load increase of approximately 1% each year as a result. Further, any increase in new build construction or appliance costs would likely be passed along to consumers.

Lifecycle Cost of HP HVAC Adopted in 2021: I don't understand how the EWEB Ratepayer would bear burden of about \$2000 per HVAC unit. Also, why do the ratepayer and society bear the burden of the electricity supply costs?

RESPONSE: For a single-family dwelling looking to electrify with a standard performance heat pump in 2021 there are estimated Electricity Supply Costs of approximately \$2,000 which is the cost to the utility to serve that customer with marginal electricity, generation capacity, transmission capacity and distribution capacity. The sum of these energy and capacity costs are added together as “electricity supply costs”. The EWEB Ratepayer perspective could also be called the “Utility perspective”, and so the net benefit to the utility is the difference between the revenue collected from the

customer (electric bills) and the cost to serve that customer's energy use (electricity supply costs). The society perspective includes electricity supply costs because it tries to show both avoided natural gas infrastructure as a benefit compared to electricity supply costs to serve that electrification. The society perspective can be helpful for understanding how efficient it is for an electric utility to supply the energy compared to a natural gas utility supplying the same amount of energy.

Lifecycle Cost of HP HVAC Adopted in 2021: How are you valuing the benefit of avoided emissions for society? Why doesn't the ratepayer get a benefit of avoided emissions? Why is the "Electric Bill (energy)" a benefit to the ratepayer? Why is its size the same as the cost to the participant?

RESPONSE: To estimate the value of emissions reductions, the model used the social cost of carbon as adopted in the Washington Clean Energy Transformation Act and adjusted for an assumed inflation rate of 2%. The resulting social cost of carbon forecasted prices from \$80/MTCO_{2e} in 2021 to \$155/MTCO_{2e} in 2040. The utility/ratepayer perspective does not include the carbon reduction benefits because EWEB currently does not have a financial cost for carbon that it pays on the customer's behalf. However, if EWEB was assessed a carbon tax in the future, then the carbon reduction would have a financial benefit to EWEB because EWEB would have to pay a carbon tax on electricity. The Electric Bill is the same size/dollar amount because it is an exchange of value between the participant and ratepayer. The participant pays the cost of the electric bills, the ratepayer (or utility) perspective receives the bills as revenue.

"It should be noted that direct incentives from EWEB ratepayers to participant to electrify were not measured as an explicit variable for this analysis." Why not?

RESPONSE: EWEB incentives were not modeled as an independent variable or sensitivity in section 10 "Modeling Sensitivities and Financial Impacts" because EWEB incentives can be utilized as tools to influence the financial benefits or costs of electrifying. These tools are tactical decisions, so they are not included in basic assumptions. In Section 9.4.2 "Impact of EWEB's Residential incentives", there is a discussion and chart which illustrates how incentives change financial benefit cost ratios under the Base Case assumptions.

Changes to Benefit Cost Ratios Given Tested Sensitivities Building Measures for Participants 2030 Chart: Are the assumed rate changes used the ones finance has been modeling for us or something else? Seems like a high RNG percent blend would result in lower switching value compared to a high NG price, why is the not the case? The electric rate increase assumptions used in this study are different than the rate projections provided by finance because the electrification model assumes annual rate increases to be the same each year. This is a more simplistic modeling assumption compared to Finance's actual rate projections which change each year based on revenue requirements.

RESPONSE: Both the High RNG percent blend and the High Natural Gas Commodity Price assumptions improve the financial benefits of electrifying. Increasing the blend of RNG in the natural gas supply does lower the carbon benefits of electrification, but it actually increases the financial benefits of electrifying because more RNG increases the price of natural gas (RNG is expensive and drives up natural gas rates the more you add to the system). High Natural Gas commodity prices also increase natural gas rates, which make electrifying a more affordable choice and improve financial benefits for participants.

LDV Managed Vs Unmanaged Charging Load: isn't the point of "Managed" load to reduce the size of the spikes and spread them out to keep them below the normal unmanaged peak. Why is managed peak higher than unmanaged?

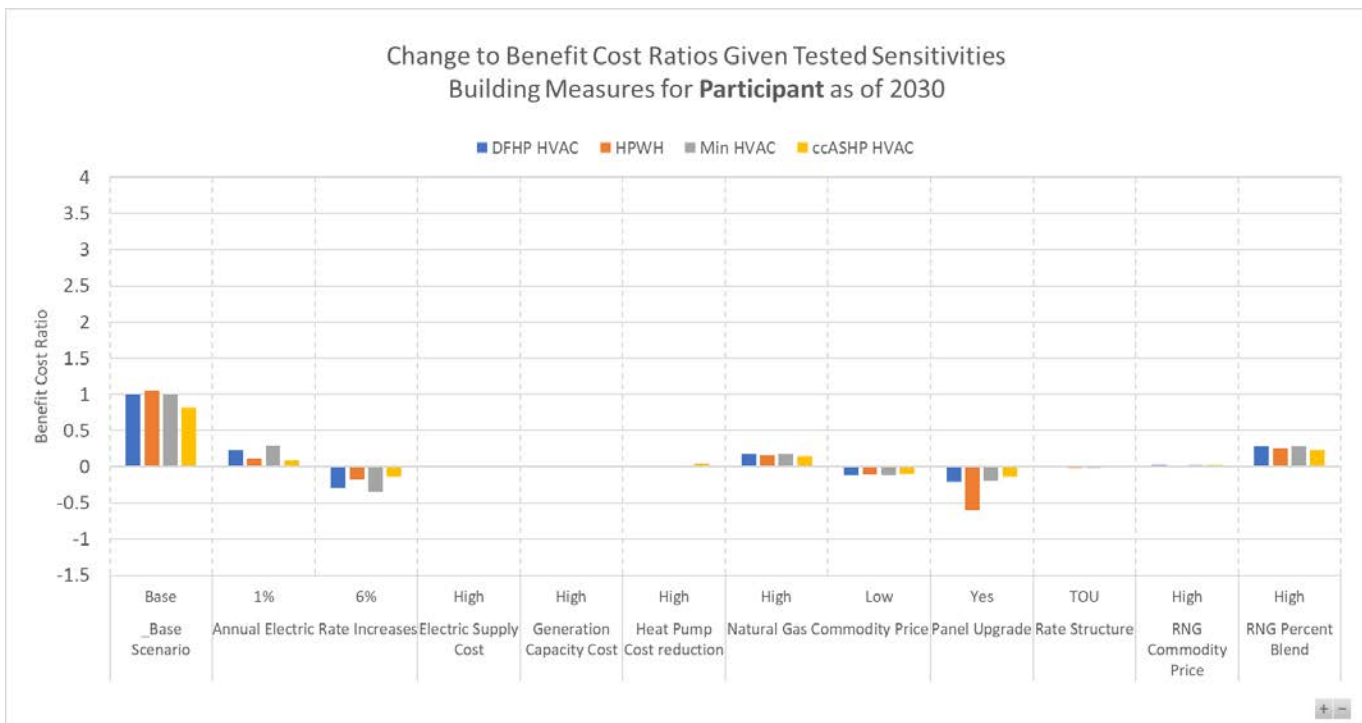
RESPONSE: Yes, the non-coincident load impact of managed charging is 1.3 kW per EV, which is higher than the unmanaged impact of 1 kW per EV. The timing of the peak is what's important to manage. This is because managed vehicles are intentionally delaying their charging start times until non-peaking periods (after 10PM), to mitigate the impact to EWEB's existing system peak load. In other words, managed vehicle charging load is concentrated during a single (off-peak) periods to better utilize existing system infrastructure (a benefit to EWEB ratepayers), whereas unmanaged charging is less concentrated, but adds to EWEB's existing system peaks. So, while the managed EV charging peak is higher, it is less impactful because of the timing relative to all other electric loads.

The paragraph halfway down Page 17 says “For example, per E3’s analysis, California electric rates could increase 20% - 40% by 2050, depending on the scenario, while natural gas rates could increase by 300%”. Then the charts on page 22 show the price of natural gas rising at the same rate as electricity between now and 2050 - under both base case and aggressive carbon reduction scenarios. Can you help me understand why these two statements don't agree?

RESPONSE: “The Challenge of Retail Gas in California’s Low Carbon Future” authored by E3 and University of California, Irvine was written for the California Public Utility commission and was intended to illustrate the financial challenges of decarbonization of the natural gas sector and provide support for the RNG price assumptions in EWEB’s study. California electricity rates are already significantly higher than EWEB’s, so a 20%-40% increase is relative to CA’s already high electricity rates. For example, Oregon has an average rate of 8.8 cents/kWh compared to California’s average of 18 cents/kWh (<https://www.eia.gov/electricity/state/>). Our study does not make these same % increase assumptions for rate trajectories as this California study, but instead looks at underlying supply costs which may cause upward rate pressure for both electricity and natural gas in EWEB’s service territory. Under the Aggressive Carbon Reduction (ACR) scenario, we assumed high generation capacity costs over 5 times higher than what EWEB pays today, which would cause EWEB’s rates to increase at a higher pace than Base Case. The ACR scenario assumed that natural gas rate increases would be driven by higher RNG blending, higher RNG supply costs and high natural gas commodity costs (all of which were explicit variables in the model). We did not explicitly model any natural gas rate increases that might occur as a result of a declining natural gas customer base (spreading infrastructure costs over a declining customer base), which may be one additional driver of the differences between our study and the California study.

Recognizing that our study’s findings are sensitive to these assumptions, we tried to show how each of these modeled assumptions impacted Benefit Cost Ratios in section 10.2.1, so that a reader could see how the findings would be different using different assumptions.

From 10.2.1.



This study doesn't evaluate upstream emissions from any of the energy sources. Do we have a sense for what the impact might be if we looked at upstream emissions from all energy sources? Is it fair to say that doing so would further favor electrification of homes?

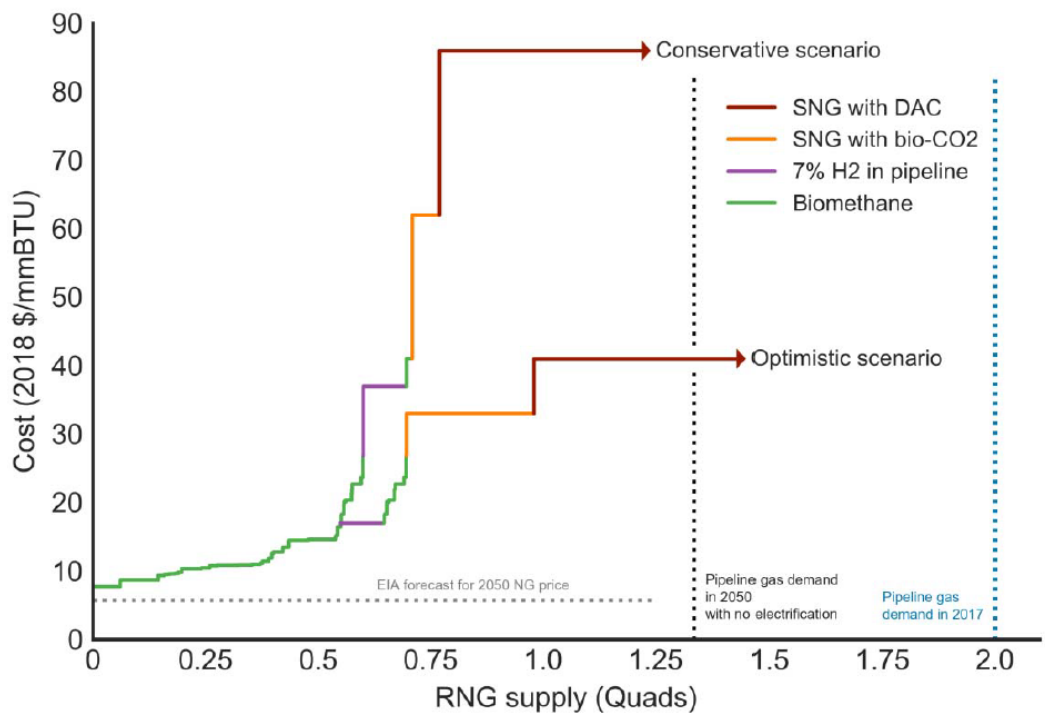
RESPONSE: Given that the upstream process involved in the current extraction of natural gas (sequestered carbon “fossil” fuel) does generate fugitive emissions at higher rates than other existing electricity generating alternatives, it is fair to conclude that there would be a greater carbon benefit if those low carbon electricity generating resources can

continue to meet demand. We didn't explicitly evaluate upstream emissions as a part of the study; our consideration was limited to direct, or Scope 1, emissions. The primary objective of the study was to evaluate and forecast the pace of electrification and the potential impacts to EWEB based on economic drivers, testing sensitivities, so as to include these variables in the load forecasts used in EWEB's upcoming Integrated Resource Planning process. The study was not intended to be a GHG or Carbon Reduction study and so the scope was narrowed to focus on electrification of specific end-uses.

We touched on the fact that the study assumes renewable natural gas (RNG) will be 15% of the natural gas by 2030 and 30% by 2050 (and 80% by 2050 in the aggressive carbon reduction scenario). You indicated NWN has committed to meeting these targets - have we seen any concrete plans for natural gas utilities to meet those kinds of targets? The Oregon Department of Energy (ODOE) [study](#) completed in 2018 suggests that, with some technology improvements, meeting some 22% of current natural gas use is possible with biogas, but it's not clear that producing all of that gas is cost effective. Do we anticipate the amount of biogas feedstock will increase significantly? Yes, methane can be synthetically manufactured from renewable electricity and captured carbon, but do we think this will be cost competitive with electricity for heating homes?

RESPONSE: Our study assumed that the price of RNG would increase as the blend increased. The RNG price used in our electrification study assumed RNG prices from the Optimistic supply curve shown below. I believe the conservative supply curve and the size of the difference illustrates the uncertainty regarding the supply and assumed cost of the various sources of RNG. Additionally, hydrogen costs are expected to decrease significantly over the next decades, although will still be drive prices up compared to the inexpensive natural gas of today (<https://www.icf.com/insights/energy/economics-hydrogen-energy>). As for NWN, their plans state their commitment to decarbonizing through a variety of general "pathways" including conservation, efficiency, RNG, hydrogen, and offsets (<https://nwndestinationzero.com/>).

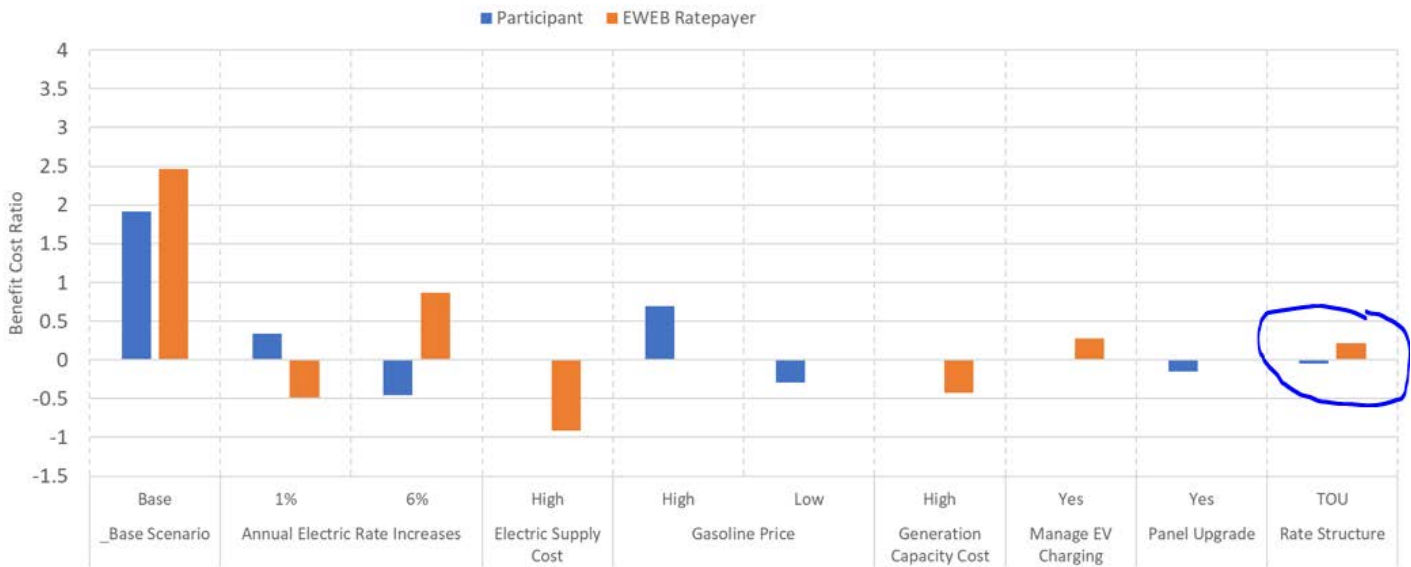
Figure B - California Renewable Natural Gas Technical Potential Supply Curve in 2050, assuming all biomass is directed to Renewable Natural Gas.



Row 3 on the chart on page 44 of the study suggests Time of Use rates will deter electrification. Can you explain why that is?

RESPONSE: If electrification consumption occurs at times of high TOU rates, and is difficult for customers to mitigate, this can result in higher prices that creates an economic deterrent. The table on page 44 is a fairly simplistic illustration of each variable, so that particular variable is not very intuitive. Our model assumed a mix of charging behaviors and charging access and summarized that mix of charging behavior as a single, “average” driver. We know that some customers will be unable to avoid the higher tariff periods (perhaps due to lack of home charging access or only using level 1 charging), so the model does show a small increased cost to the “average” driver as the result of TOU rates (hence it is a very small deterrent on average). However, the reality of TOU implementation is much more complex than this model can illustrate and most customers will do their best to avoid higher costs. The good news is that the study also shows that the TOU is not very financially impactful (section 10.2.2) and would likely have almost no influence on if a customer would buy and EV or not.

Change to Benefit Cost Ratios Given Tested Sensitivities
Electric Vehicles for Participant and EWEB Ratepayer as of 2030



Are there any legal limitations on whether or how EWEB can promote fuel switching off of gas and onto electricity?

RESPONSE: Legal counsel is unaware of any legal issues related to the promotion of electrification or fuel-switching. However, there may be some contextual concerns with focusing only on gas conversions, ignoring oil and/or wood space heating. Incentivizing or promoting the conversion of non-electric to electric, in conjunction with conservation, energy efficiency and potential demand response potential is consistent with EWEB’s Strategic Plan and Board Policies, should pose little risk.

Quarterly Strategic & Operational Report for Q3 2021 (PRICE/KELLEY) There are many items that are below target due to the pandemic and wildfire, mainly capital projects, and AMI. Are we rethinking our overall timeline, or do we think we have the capacity to catch up? I realize this will differ among projects, but I'm asking for a general sense.

RESPONSE: With respect to Capital spending from the Quarterly Report, we do have the capacity to catch up. Here is more detail:

Electric: Due to a combination of staffing, wildfire, and supply chain issues, EWEB will see some project deferrals to 2022. However, no projects have been cancelled, so these costs are just rescheduled, not avoided. Two things EWEB is doing to adjust to these: resource management (restaffing vacancies with new tactics, engaging consultants), and changing our typical procurement planning (ordering equipment earlier). Examples to both – relying on design consultants for larger substation design and construction, ordering large construction equipment (fleet) now, and larger

equipment procurements well ahead of when they are needed (power transformers). Currently, signs are pointing to 2022 and beyond being on track.

Water: Overall we are projecting around a 90% annual investment levels vs. budget in both in Type 1 and Type 2 work. For Type 1 the underage is primarily due to some delays in Pump Station work. EWEB has made some recent decisions on these projects so that they can move forward and catch-up next year. For Type 2 it is really about the timing of the invoices for the multi-year E. 40th reservoir project. Presently, EWEB is projecting a shift from this year due to invoices hitting in January and February instead of December. Overall, the reservoir project is on track to being completed in 2023.

Consent Calendar

CONTRACTS

Stillwater Sciences, Inc. – for fish stranding study design, monitoring services, and development of the Trail Bridge Reservoir Fish Stranding Management Plan. (KELLEY) Why are we spending 2.7 million on a fish study, when there is currently no way for salmon to get above Trail Bridge until we build the trap and haul facility, which could be a while?

RESPONSE: This is a multi-year project that includes the development of a study plan, coordinating with Jacobs Engineering on the design of embankment modifications, and extensive on the ground monitoring. All aspects of the scope are required by our FERC license. The study plan is due in May of 2024, which is why this work is being initiated now. There is a significant time gap between development of the plan, per the deadline, and when fish will actually be present for the monitoring portion (post fish passage construction). Therefore, most of the expense will be in the latter years of the contract. For 2021, Stillwater will begin developing the study plan. Implementation of bank modifications was initially intended to occur during construction of the fish passage facilities, but that was written when a three-year drawdown was envisioned. That is no longer the case as the Trap and Haul can be constructed without a significant drawdown. The current thinking is bank modifications will occur during any drawdown that may be associated with sinkhole remediation. A minimum of five years of stranding monitoring is required after fish passage and all habitat enhancements are complete. Therefore, this \$2.7M contract will span many years. There will be additional contracting expenses associated with the design (Jacobs) and the construction (Wildish) of the embankment modifications.

Virginia Transformer Corporation for two 1500/2000 KVA 3 Phase Substation Regulators (KELLEY)
What is the plan for the other nine obsolete regulators?

RESPONSE: Depending on the timing, most of these regulators will become unnecessary as old transformers are replaced with new transformers with Load Tap Changes (LTCs).

National Metering & Technical Services, LLC – for meter technician services (1 year term). (KELLEY) Please clarify, are we going to pay \$448,000 for one journeyman electrician for just one year?

RESPONSE: Correct, the bid is for a single year commitment, including labor and equipment, with option to renew up to five years. The consent request describes our findings on the “Competitive Fair Price”. The bid was posted on OregonBuys for 17 days and didn’t receive a lot of attention. There aren’t a lot of contractors that provide journeyman meter technician services as these are traditionally in-house positions. UPA is the only other known contractor that provides install services, but their services are primarily related to AMI related mass deployment projects. According to their website, National Metering provides these journeyman meter technician services to many utilities such as:

- Portland General Electric
- N. Wasco County
- Blachley-Lane Coop
- Inland Power & Light (Spokane, WA)

It is accurate that this is a premium price compared to internal resources, however recruitments for this position have not been successful. Current backlogs as a result of the lack of internal resourcing are no longer manageable and are pushing up against key performance metrics around meter accuracy testing and compliance requirements. EWEB is seeking to close this gap through use of external resources while we continue to work on filling internal resources. To address recruitment challenges, we have:

- Engaged a recruiter though with limited success as the labor shortage vs demand is in imbalance.*
- Increased our budget for advertising and establishing relationships with Meter Schools that facilitate apprentices across the country.*
- Continue to offer a competitive signing bonus while investigating other incentive options such as covering housing/moving expenses, etc.*

GEI Consultants – for strategic analysis of Leaburg-Waltermville. (KELLEY) As with National Metering, this was a one-bid response, what is the mechanism for ensuring we are not overpaying for the services?

RESPONSE: *The timing of this project was a challenge for some of the potential bidders. This is the type of project that typically needs partnership with more than one firm to team up since there are so few that have all the needed expertise required under one roof. Sometimes where one firm was available, they couldn't find a partner firm with an open schedule. Though only one proposal was submitted, the review panel was satisfied with the submission and believes the consultants will meet expectations. As mentioned in the consent request, the firm is in the qualified pool of consultants and their partnership with Cornforth Consultants provides additional assurance as they have performed high quality work for EWEB in the past. Review of GEI's rates relative to the rates of consultants who are currently performing similar work for EWEB indicates that their staff costs and billing structure are comparable. Their overall scope and fee proposal is also consistent with EWEB's expectations for the necessary level of effort and cost to complete this specific work. The Project Manager will review GEI's work and invoicing with this comparable work in mind.*

Cooperative Agreements – General Question (PRICE) WECO Inc., dba Carson – for the supply of fuel under the Regional Fuel Supply Cooperative for Greater Oregon Fuel Cooperative (GOFC) members looks like a fantastic program to gain efficiencies of scale through buying power, has Purchasing done a review to see if there are other products that could benefit from this same type of partnering?

RESPONSE: *We do use Cooperative contracts where possible, particularly with the State, City of Eugene, and National Cooperatives such as NASPO, OMNIA Partners, Sourcewell and HGAC. Examples include vehicle and parts purchase, microwave components, copy machines and maintenance and IS equipment purchases to name a few. In addition, the Purchasing Team has met with members of the local Cooperative group to consider developing other Cooperative Contracts, the intention is to share the load between Public Agencies, receive better price and service through economies of scale, and receive more interest by vendors to respond to our solicitation. The City of Eugene was considering awarding contract for batteries a few years ago, other considered materials include lubricants, filters, tires, and OEM parts. As EWEB has transitioned to a vendor managed parts room, many of our contracting needs are covered under that contract.*