Council Meeting
June 11–12, 2019
Portland, Oregon

Tuesday, June 11, 2019

Chair Jennifer Anders called the meeting to order at 1:32 p.m. All Council Members were in attendance. No replacement has been named for Member Tim Baker.

Reports from Fish and Wildlife, Power and Public Affairs committee chairs: Guy Norman, chair, fish and wildlife committee; Richard Devlin, chair, power committee; and Jeffery Allen, chair, public affairs committee.

Fish and Wildlife Committee

Member Guy Norman, committee chair, reported on four items:

- Once the Council approves the Fish and Wildlife Program draft amendments, there will be a 90-day public input period. The Council will hold consultation hearings — two in each state — with the public and with Fish and Wildlife managers most likely from late July to late October.
- The committee heard a comprehensive presentation from Upper Columbia United Tribes about fish passage and reintroduction upstream of Chief Joseph and Grand Coulee Dams. They are on the full Council's agenda for later today.
- There was an overview of the North Pacific Anadromous Fish Commission annual meeting and workshop. It was held over eight days last month. The commission made up of countries in the north Pacific. The International Year of the Salmon is a continuation of efforts for conservation and sharing science. Part of that is important for the scientific expedition on the Russian vessel, which provided a lot of new scientific information. The hope is that the research will continue to show where salmon are in the ocean.

- The committee heard from staff and NOAA on a Columbia Basin habitat research, monitoring and evaluation strategy. The Council asked staff to develop a strategy that is focused on evaluating the effectiveness of habitat projects. It's become a coordinated project with federal agencies, NOAA and BPA with the hope to mesh with Council's categorical review associated with habitat and NOAA's BiOp with mitigation for the hydro system. The plan will go for regional review between August and March. That will give time for input from state and tribal managers before it's completed.

Power Committee

Member Richard Devlin, committee chair, reported on six items:

- The committee reviewed a Power Plan process flowchart and they are at the very beginning of the process.
- Dr. David Rupp gave an overview of climate change's impacts on electricity demand and supply. He will be giving a presentation to the full Council today. Member Devlin said it's one of the better presentations they've seen on climate change impacts.
- They talked about Power Plan Processes. The impact of climate change will probably be greater on supply than upon demand. Models do not show a decrease in winter load, which continues to grow due to population growth. Summer loads grow as well, but with less certainty, Member Devlin said.
- The committee heard from staff about energy efficiency supply curves. There was a look at forecasted loads outside the region as well as forecasted energy prices. Both are pertinent to the Power Plan and evaluating resource adequacy.
- Next time they plan to look at estimating System Adequacy Requirements.

Public Affairs Committee

Member Jeffery Allen, committee chair, reported that the group will meet today at meeting's close.

1. **Presentation on Energy Trust of Oregon, Inc. Five-Year Strategic Plan**

Charlie Grist, conservation resources manager, introduced Mike Colgrove, executive director, Energy Trust of Oregon (ETO). Colgrove described what the organization does and who it serves:

- It's an independent, nonprofit organization;
- It supports investments in energy efficiency and access to renewable energy;
- ETO serves 1.6 million customers of PGE, Pacific Power, NW Natural, Avista and Cascade Natural Gas in Oregon, and 70,000 customers of NW Natural in Washington — Idaho Power doesn't participate;

- It provides information and cash incentives for residential, commercial and industrial sectors;
- It is overseen by an independent board and three advisory councils (conservation, renewable energy and diversity); and
- The ETO is accountable to the Oregon Public Utility Commission (OPUC).

The ETO's 2019 annual budget is $202 million, most of it for electric efficiency. It is funded by a portion of the 3% public purpose charge for electric utility customers and utility tariffs approved by the OPUC. Since 2002, it has received and invested $1.8 billion in funding, serving more than 700,000 homes and businesses with energy efficiency programs and small-scale renewable projects.

Colgrove showed a chart of ETO's annual electric savings. The jump in 2008-2009 is due to the supplemental funding that was authorized. In 2017, there was a record savings of 60 aMW. The savings dipped a bit last year, but was still high at 54 aMW. He said ETO delivers savings at 2.8 cents per kWH, which is less expensive than what utilities are getting. The success shows the challenges to the organization posed by the maturation of the LED lighting market. Assuming a federal law stands next year, LEDs and CFLs will be the only types of lighting that customers can buy in stores. Once that happens, we'll be moving away from incentives in the residential market, he said. They still see a lot of opportunity in the commercial space, but it's transitioning too.

Last year was a record year of savings for natural gas customers with 7.5 million annual therms of savings, which comes in at a levelized cost of 26.4 cents per therm.

The ETO has incentives for hydro, solar, biogas, small wind and some geothermal, with the majority of projects under 2 MW.

Colgrove said he came to Oregon from New York three years ago because its natural reputation attracted him. He said the ETO is an innovative organization trying to reinvent itself and how it serves its customers in a changing industry.

He said a good example is manufactured homes where there is a lot of potential. ETO kicked off a pilot to replace manufactured homes. If you've spent any time in a park, you see some poor housing, he said. Doing renovation on some of the homes isn't feasible. The pilot program loops in other agencies to braid their weatherization funding with ETO's incentives where it's doable to take out a loan. Lower utility bills are helping to pay for the loans. There are about 10 projects underway in Northeast Portland and they are trying to find a way apply it to rural areas.

Colgrove explained ETO's benefits: it's stable, nonprofit, is connected to utility planning, is dual fuel, almost statewide and has direct customer connections. Other states have the

utilities administer programs. Two challenges are that there's a single source of funding and there are coordination issues with local, customer-owned utilities.

ETO and the Council enjoys good staff-to-staff collaboration. Grist is a member of the ETO's conservation council. Former Council Member Henry Lorenzen joined the board as well. He is the first board member who lives in Eastern Oregon.

The ETO uses the Regional Technical Forum as a sounding board for its savings analysis work. They provide annual RTF funding and serve as members of the RTF and its policy committee.

Regarding the Council's Seventh Plan, the ETO is one of the major cofunders with NEEA's load research effort and Colgrove is chair of the steering committee. Also, they have incorporated capacity value into their analysis for a number of years. Last, they are working hard to boost participation rates in certain markets.

Colgrove discussed ETO's Strategic Plan. ETO is on a five-year cycle. He talked about the growing environmental justice movement on how to prioritize equity when developing energy policy. Our goal is to deliver that least cost resource to our most-vulnerable populations, he said. The potential impact is significant.

Colgrove said they are taking a monitoring and engagement role on the passage of clean energy legislation. There's the potential adoption of a statewide carbon policy in Oregon, higher efficiency codes and standards in building codes, the prioritization of equity, and better support for distribution program planning as capacity becomes a more significant issue. We believe these changes will unfold slowly in the next few years, he said, but that the impact will be significant.

Beyond the next five years, we see some very different environments in terms of a carbon market and carbon pricing. Utilities are adapting to constraints on their systems and the pressure of reducing their greenhouse gas emissions. Natural gas utilities are facing adapting to a new role in a carbon-constrained future.

While we track emerging energy efficiency technologies, we're not expecting a new LED-type of breakthrough in the next five years, Colgrove said. NEEA seems to have a good grasp of what's out there. Overall, this new environment will be more difficult to achieve our savings targets. Our project sizes are becoming smaller. We've served a lot of large customers and we still have mid and smaller-sized businesses to work with, which means smaller savings per project. So it's a challenge to figure how to deliver our programs cost effectively.

As we look out over five years, there is still a lot of cost-effective savings to be obtained. When you consider the value stack of energy efficiency, it helps keep loads flat, improves indoor air quality and improves worker productivity.

Colgrove shared ETO's five focus areas:

1. Provide relevant programs, information and services for all customers;
2. Strengthen the value we deliver by linking clean energy to utilities responding to changing customer energy needs;
3. Provide objective information and analyses to support energy policies;
4. Maximize public benefits by leveraging additional funding; and
5. Enhance our ability to quickly and effectively respond to changes, needs and opportunities.

There will be stakeholder, customer and public outreach over the summer. The formal public comment period is June 24 – August 2. The board of directors will consider the final proposed plan at the ETO's October 16 public meeting.

2. Presentation on the Upper Columbia United Tribes submittal – Fish Passage and Reintroduction Phase 1 Report: Investigations Upstream of Chief Joseph and Grand Coulee Dams

Stacy Horton**,** policy analyst/biologist, said the Council's 2014 Columbia Basin Fish and Wildlife Program called for the development and submittal of this report. Horton introduced the panel: Sue Ireland, fish and wildlife director, Kootenai Tribe of Idaho: Randy Friedlander, fish and wildlife director, Colville Tribe; Brent Nichols, fisheries and water resources director, for the Spokane Tribe; DR Michel, executive director, Upper Columbia United Tribes (UCUT); Hemene James, council member, Coeur d'Alene Tribe; and Darnell Sam, council member, Colville Confederated Tribes.

Michel said he is a citizen of Colville Tribe. He talked about the makeup of UCUT and said they are seeking Council support for mitigating impacts of the hydroelectric system. He said there are opportunities to look at the system differently, including adding the Upper Columbia into the mix. It's the most impacted and least mitigated, he said. The economic benefits of the entire basin should be factored in. An economic evaluation by Earth Economics showed that the nature's value of the entire Columbia Basin (including both U.S. and Canada) amounts to $198.8 billion in ecosystem benefits. These developments have been a cost to the ecosystem and there's a need to swing the pendulum back.

Sam said he's carrying the message of what his elders and ancestors went through. He said there are about 9,600 tribal members on the reservation — 12 bands. The concept is that most are salmon people, related to the river. He talked about impacts of dams to the river and the salmon, as well as the number of fish allocated. The upper Columbia region

sustained the greatest impacts from hydropower and it is the least mitigated. Anything we can do to mitigate that staple of life that the dams have taken from our people is a plus.

James said if you talk with your heart, you'll always have clean hands. He said it's interesting that we're talking about reintroducing fish to areas that haven't had fish in 100 years. Nutrients are lacking in our people, he said. Riparian zones don't get what they need. Predators have taken salmon. He said he was fortunate to partake in the ceremonies on the Washington Coast. We have the opportunity to right the wrongs and that can't happen until the salmon is returned.

Nichols talked about how the Spokane were known as the fish eaters. These people relied heavily on this resource. Each year, they knew when fish were coming and how many they could collect. They are a river-dependent tribe.

Friedlander briefly went through the Phase 1 presentation for those who didn't see it at the committee meeting earlier. He talked about the loss of tribal habitat and the desire for more salmon. The Columbia River Treaty and the Council's Fish and Wildlife plan are two hot topics.

The study calls for a three-phased approach. Friedlander said that the first phase is complete. It called for:

- Evaluating passage studies at hydroelectric projects, including Chief Joseph & Grand Coulee Dams;
- Investigating possible cost of upstream and downstream passage options; and
- Investigating habitat availability, suitability and salmon survival potential in habitats above Grand Coulee Dam.

Friedlander listed six different aspects of Phase 1: donor stock assessment, risk assessment, habitat assessments, review of fish passage technologies, life cycle modeling, and future studies/recommendations**.**

Friedlander said Phase 1's study conclusions are:

- There are good options for donor stocks.
- We understand the disease risks and they are manageable.
- There are large quantities of habitat in the U.S. that are available and suitable (and even more in Canada not addressed in this report).
- Passage technology exists and is being used at other high head dams.
- Life Cycle Models show promising results.
- Returning salmon to the blocked area will deliver cultural and economic benefits for all.

The work affirms we should move on to Phase 2, Friedlander said. The next steps call for:

- Additional studies

- Experimental releases to test assumptions/hypotheses;
- Interim passage facilities;
- Implement obvious early options that can contribute to future returns (trap and haul hatchery surplus Chinook to Rufus Woods);
- Develop rearing facilities and sources;
- Coordinate with Canada on transboundary benefits/actions; and
- Convene multiagency working group to refine Phase 2 actions/priorities.

Ireland thanked the attendees for listening.

Member Norman thanked the contingent for presenting at the meeting this morning and this afternoon.

Member Devlin asked about their efforts to eradicate northern pike. I think of these things as challenges. Can you comment on how you see reintroduction in light of the growing population of northern pike in the area? Nichols replied that he can't answer on the impact of pike because the salmon aren't there in Lake Roosevelt. The plan going forward is to have three or four years of releases and to monitor the impact.

Friedlander said through their monitoring of kokanee and native red band rainbow in Lake Roosevelt, they tag some of those fish and they've been tracked going to the ocean. The northern pike are our problem. We're trying to keep them out of the system.

Member Oshie thanked the tribal representatives for coming and for the work they're doing.

Member Anders said they share the same sentiment. We started with this issue in 2014, and there was a lot of difficulty on this issue. It's still the right thing to do.

3. Presentation on 2019 energy legislation in Washington

Elizabeth Osborne, senior energy policy analyst, introduced three representatives from Washington State's Energy Office to brief Council Members on three pieces of legislation that were adopted this past session, which will affect resource development decisions in the regional electric system. The panel consisted of Dr. Glenn Blackmon, energy policy manager; Chuck Murray, senior energy policy specialist; and Dr. Sarah Vorpahl, senior energy policy specialist.

The three primary bills enacted were:

- SB 5116 – Clean Energy Transformation Act (CETA)
- HB 1444 – Appliance Standards
- HB 1257 – Clean Buildings

Blackmon explained that CETA is similar to an RPS. While Washington's Energy Independence Act in 2006 went to 15%, this one goes to 100% and applies to all electric utilities in Washington. It has three steps: in 2025, it eliminates coal from retail portfolios; in 2030, utilities need to achieve a benchmark of 80%; and in 2045, it mandates 100% renewable or non-emitting retail electricity supply. There is no provision for alternate compliance.

Blackmon said it starts as a planning bill. Beginning in 2022, utilities need to bulk up their IRPs to show how they're getting to the benchmarks. They are required to specify the cost to society of GHGs. As an agency, we'll be doing it over the next 18 months, he explained.

On the cost side, utilities don't have to do compliance work. The bill requires more in-depth work of the energy burden on vulnerable populations and the adequacy of energy assistance programs. It also allows temporary suspension to protect reliability. Also, incremental hydro from federal projects will be eligible starting in 2020.

Vorpahl talked about the appliance standards legislation that passed this year. She said it was last revised in 2009. They are the lowest-cost, most effective way of achieving energy savings, she said. States can develop own standards and Washington has had them since 2005. Most standards are effective for products manufactured starting in 2021 and apply to 17 different product types. It also provides the first design requirements in the nation for electric storage water heaters. The rules update begins in July.

Murray briefed Members on the clean buildings legislation. The objective is to maximize reductions of greenhouse gas emissions from the building sector. It sets state energy performance standards for commercial buildings, provides an incentive program, and sets standards for natural gas efficiency and renewables. It also has electric vehicle charging infrastructure requirements for new buildings and makes changes to energy code development criteria. There is an early adopter incentive program beginning July 2021. Mandatory compliance begins in 2026, with fines for noncompliance of $5,000, plus up to $1 square foot per year. Murray expects a lot to happen in the rulemaking phase later this year.

In response to Washington Council Member Pat Oshie's question about compliance costs, Blackmon said they don't want to drive rate increases of more than 2% per year for compliance costs. We think most of this will have to happen at the Washington Utilities and Trade Commission, he said. Investor-owned utilities will need protection for their customers.

Member Anders said going to 100% renewables gets increasingly more difficult and expensive. What were discussions in Washington about policy driving cost? I think studies have been influential in developing legislation in its final form, Blackmon said. They see an 80 percent change in the standard. Other methods of getting to the GHG result was for natural gas to be used in medium term. For the 2045 standard, we expect technology to

develop new ways to serve electric load. The legislature decided it needed clean electricity by 2045.

Member Devlin said he is glad to see provisions in the bill that don't limit the ability to exchange with BPA.

Oregon Member Ted Ferrioli asked if this policy would end up driving people toward nuclear power due to the intermittent nature of wind and solar. Blackmon said he thinks the policy drives the public toward nonemitting resources that will require looking at a lot of different options.

4. Overview of Climate Change and Earth System Models:

Massoud Jourabchi, economic analysis manager, introduced Dr. David Rupp, assistant professor, Senior Research College of Earth, Ocean, and Atmospheric Sciences, Oregon State University. Rupp discussed the physics involved in the impact of greenhouse gases and global climate model building blocks. It's not unlike a weather forecast model. One is over a week, whereas the other is over decades or centuries.

Why is there a wide range in climate projections? It's due to radiative forcing, climate sensitivity and natural variability, he said. We go through periods of variability. The first two are things we have some control over. We have no control over natural variability.

He discussed three Earth System Models and their representative concentration pathways:

- RCP 8.5 is a geopolitically fragmented world.
- RCP 2.6 limits global warming to 2°C (using carbon capture and storage).
- RCP 4.5 (commonly used in impact studies) is a cost-minimizing pathway to stabilization.

A best outcome is a future that pursues a cost-minimizing pathway to stabilization. It assumes that all nations of the world undertake emissions mitigation simultaneously and effectively. It's also a scenario that most likely isn't happening, Rupp said. It's fair to say that the world currently is in the first, fragmented scenario, but hopefully it will move to the second before it's forced to in a painful way.

Rupp looked at 2030s climate projects for the Columbia River Basin. There is a large range in temperature changes from 1 degree to 6.5 degrees. Precipitation will increase. Less rain the summer and more in the winter and spring. He also looked at annual temperature changes, winter precipitation changes and summer precipitation changes by the 2040s.

Fish habitat is expected to degrade due to increasing peak flows, earlier streamflow timing, reduced summer low flows, and warming summer stream temperatures that could shift

preferred habitats, alter the timing of life history stages, and exacerbate current stressors for the Pacific Northwest's salmon and steelhead.

Impact on fish will be warmer temperatures, a shift from snow to rain, and higher rainfall intensities. This increases the risk of:

- Lethal stream temperatures;
- Scouring of shallow-buried eggs from heavier winter streamflow;
- Downstream migration timing of smolts is desynchronized with spring freshet; and
- Upstream migration in summer/fall is delayed by lower summer flow.

Member Anders asked the difference between RCP 2.6 and 4.5. Rupp replied it's the rate at which mitigation occurs. In 4.5 things are delayed while the earth gets warmer.

Member Anders recessed the meeting at 4:15 p.m.

Wednesday, June 12, 2019

Member Anders reconvened the meeting at 8:01 a.m.

5. Remarks from Jan Lee, former Executive Director of Northwest Hydroelectric Association, and introduction of new Executive Director Brenna Vaughn.

Gillian Charles, energy policy analyst, introduced Jan Lee and Brenna Vaughn. Jan Lee, who served as executive director of the Northwest Hydroelectric Association (NWHA) until her retirement last February, appeared before the Council with Brenna Vaughn, the association's new executive director, to share where hydropower has been and opportunities going forward.

Lee said there have been lots of changes in the last 30 years. Anticipated electric demand has doubled every 10 years and there was the WPPSS bond default. In 1980, BPA put out a deficit warning and lots of small hydro projects came online. The PURPA bill, tax credits and other kinds of legislation helped produce the hydro gold rush. Many of us in the small hydro started an association in 1981 and 125 companies belonged the first year, she said. Utilities then joined the association.

In 2014, a scoping study looked at hydropower's potential in the Pacific Northwest between 2015 and 2035. That report found 3,200 MW of capacity and 23 million MWhs. Lee said more marketing is needed to raise the profile of all of hydro's benefits. This includes the life of a hydro project, which is 50–100 years, compared to 20 years for other generating projects.

Vaughn thanked Lee for her mentorship and contributions. She said the 2014 report identified 10 sites for hydropower development of non-powered dams. Currently, one has an active license and three are in the permitting process. In addition, the U.S. Department

of Energy (DOE) published its 2018 market report and trends, which showed five capacity upgrades in the region totaling 636 MW of generation. Looking at pumped storage, there are now seven active FERC permits in the Northwest. In addition, the DOE report identified 71 conduit projects in development with a capacity of 21 MW.

Vaughn also mentioned tidal and wave energy, saying it's still very new and is not deployed on a large scale.

Member Ferrioli asked about deferred maintenance on facilities he toured on the Columbia and noted there were bays where new turbines could be installed. Is there any capacity that we're underfunding and leaving on the table? Lee said she thinks there is. She mentioned the Banks project on Roosevelt Lake. A new component is being added and the plant itself is being rejuvenated. A lot of facilities could be expanded with a little work, she said. It might be good to have an Army Corps of Engineers person come do a presentation.

Charles added that there are a lot of projects underway to improve efficiency and capacity. They are generally 10-year projects in the pipelines.

Member Pat Oshie asked about pumped storage possibilities in the NW. What is the technology being considered and the cost per kilowatt? Lee said it's difficult because nothing has come to fruition yet. There are projects in the permitting process and they're quite expensive, so people are looking for utility partners to move forward. The Shell project is only 5 MW, but might be built upon. There's a project in Montana that is well along in the permitting process. There are a couple of joint ventures in Oregon coming together. Vaughn said the Swan Lake project has received a license. It's a proven-out technology. In terms of installed pricing, it's expensive due to permitting obstacles.

Member Devlin said he has spent a lot of time examining hydro projects. It's difficult to get the information. There are too many examples of people not preparing to meet the capital needs to make improvements. In some cases, they are deferring to the very last minute while worrying about failures. Is there any effort to deal with the shortfalls? Lee said the utilities are looking at asset management. FERC has some authority over this process, but she doesn't know if they have a process for updating their review. She agreed that maintenance is important and less expensive overall.

Vaughn said the Hydro Research Institute started doing condition assessment monitoring through Chelan PUD to predict when larger components are going to fail. For small hydro, they're coming up with plug-and-play solutions so the cost of maintenance isn't as high.

Member Devlin said the effort seems worthwhile, but late. He observed a lot of these facilities used to operate on well-defined schedules and now they're being asked to operate with many modifications. He wonders what the impact is on many underlying components.

He wished Lee well and noted that she's taking on another assignment. Lee said she'll be on the city council and various other boards, and will be the executive director of the Association of Conservation Districts.

6. Presentation on Northern Pike economics report

Laura Robinson, program analyst and tribal relations advisor, introduced Dr. David Kling, economics assistant professor for Oregon State University, who is under contract with the Council to look at impact of northern pike. On the phone were his colleagues, Dr. Jim Sanchirico, environmental science and policy professor, UC Davis; and Dr. William Jaeger, Independent Scientific Advisory Board member. The team produced a report that came out the day prior.

Kling provided a background on northern pike in Lake Roosevelt. He said they are remarkable predators detected within a couple of miles of Grand Coulee Dam.

The question to be studied was, how much will it cost to delay spread of northern pike? Kling said they cannot provide a direct answer because "no explicit, quantitatively characterized management strategy for Lake Roosevelt was provided by ISAB."

Kling said more research was needed to provide a cost assessment. He said they could do some calculations, but they could be wrong.

If the NP invasion continues to spread, what will be the economic impact? Kling discussed what pieces would be needed to put together. He showed three questions for understanding the cost and he talked about a scoping exercise.

The report does not attempt to make a recommendation on the economic merits of current investment or strategy for northern pike control, Kling said.

Member Norman said a simple way to look at the cost question is, more is better, but that's not a clear answer relative to economic costs. We've seen some examples that acceleration in the earlier years might reduce costs in the later years, if done right, he said.

7. Presentation by the Independent Scientific Review Panel on the Mainstem and Program Support Category Review

Erik Merrill, independent science manager, introduced Dr. Steve Schroder, chair of the Independent Scientific Review Panel. Schroder is leaving after seven years and there is a large turnover of ISRP and ISAB members. They will be coming to the Council with a list of new nominees for appointment.

Schroder reviewed 48 mainstem projects. There are 27 Projects met scientific review criteria, 16 projects met criteria with some qualifications, and five projects were not amenable to scientific review.

About a third of the projects deal with passage and survival. He grouped them into categories. The first deals with information gathered in river conditions. He talked about the passage and survival of salmonids. All this information is turned into indices and then are analyzed and compared. They do the same with smolts and adults, using PIT tags and genetic samples. The challenges are warm water because they are restricted on how they can handle fish and not stress them, Schroder said.

He talked about passage and survival of adult salmon at Lower Granite Dam. A lot is dependent upon PIT tags. They tag 1.5 million per year, there are 16 million detections per year and 300 detection sites. New methods of detection being tested in the Columbia River. He touched on the software packages to make analyses.

Predation was discussed. He referred to a John Day Reservoir study in the 1980s. The alarming numbers started the northern pikeminnow sport fishing program. But a lot has changed since, and Schroeder recommends they renew these analysis, revisit abundance estimates and other predators, such as birds. Birds consume a lot of smolts, 25 million by Caspian terns and double crested cormorants. He talked about moving the tern colonies and dealing with mammals.

Schroeder talked about estuary, plume and early ocean life projects. If you're going to manage fisheries, you need information on abundance, harvest and escapement, he said. He also talked about selective harvest, chum salmon recovery and the recovery of freshwater mussels.

On Pacific lamprey, Schroeder said 15 years ago, we didn't know much about them. The projects the tribes have instituted have advanced our knowledge tremendously.

Talking about the Columbia Basin Water Transaction Program, he said water rights are having an impact on salmonids, lampreys and other aquatic species. He mentioned work with local entities to retire water rights. He also said expected climate change impacts need to be considered climate change impacts when prioritizing habitat projects.

Schroeder talked about data management and information dissemination. He said that funding for the Columbia Basin Bulletin is up in the air.

Member Norman thanked Schroeder for working in the Columbia River Basin. They worked together at the Washington Department of Fish and Wildlife. Relative to PIT tag arrays, he is curious about the spillway array. What do you think about opportunities there to compare survivals? He's curious if the fish spilled help with the analysis. Schroeder said the problem

is that the fish might use a multitude of pathways to go down. PIT tags might provide a good model to show the pathways being used, and how that could impact survival. But those that die will be recorded once and never again. He discussed other possible approaches.

Member Norman shared that Schroeder was a leader in the development of otolith marking. Years ago, scientists were faced with how to mark a tiny fish without hurting them. Otoliths put down daily bands, that are impacted by temperature. They determined a way to code them. Now bar codes are used to mark three billion fish a year. It's a fantastic tool. Genetics are overtaking it. Of course, you have to pull the fish's ear bones out.

Member Jim Yost said as we go through the EIS process in the Fish and Wildlife Program. We're getting comments that the status quo isn't working, and we haven't made progress in last 15 years. Schroeder countered that he thinks we've made tremendous progress. We've made gains in how to analyze data, genetic tools, finding out things we never thought would be answered. That's what we're trying to do with these reports. We're trying to group these projects together. I was wondering how it all will be used. How is BPA using this info? There has to be an overarching plan on where we want to be. The Fish and Wildlife Program provides that.

Member Devlin said he's trying to see if the questions we get over progress need to look at this in a different way. He talked about being involved in transportation projects. It was tough to explain to the public why investments are needed so traffic doesn't get worse than it will already become. In fish and wildlife, we're facing new challenges, such as northern pike, etc. How many species will have declined or have gone extinct without our efforts? Schroeder replied that's a good point. It would be an interesting intellectual exercise to figure that out. Another nice prong would be to emphasize the benefits of what we've done. Somehow we need to educate the public about what's going on in the Basin.

Member Norman said he would reinforce what Member Devlin said. The region over-celebrates the high marks and conclude we are failing during low marks. The reality is that with the actions we're taking, we're supplementing the high marks and we are buffering the low ends, such as when we have low ocean productivity.

Member Anders said she appreciates the report. On the concerns the report mentions, how do qualifications get addressed? What happens with this voluminous report?

Tony Grover, Fish and Wildlife Division director, said you're going to see a presentation from Lynne Palensky, project review manager, next month at the committee and then to the full Council.

8. Council Business

Northwest Power and Conservation Council Motion to Approve the Minutes of the May 7-8, 2019, Council Meeting

Member Devlin moved that the Council approve for the signature of the Vice-Chair the minutes of the May 7-8, 2019, Council Meeting held in Boise, Idaho.

Member Ferrioli second.
Motion approved without objection.

Northwest Power and Conservation Council Motion to Approve the Release of the White Paper "Energy Efficiency Values and Challenges"

Charlie Grist said they received comments from BPA, PNUCC and others, and worked with BPA to make corrections and clarifications.

Member Devlin moved that the Council approve the release of the white paper "Energy Efficiency Values and Challenges" as presented by staff.

Member Allen second.
Motion approved without objection.

Public comment on Council Draft Fiscal Year 2021 budget and Fiscal Year 2020 revisions.

Charles Pace commented by phone: "I take the amount of the budget proposed and divide by the statutory limit based upon BPA's white paper, and I come out at 1.78. In other words, you guys are 0.78 over the statutory limit. It's proposed that you spend substantial resources increasing the profile of the fish and wildlife folks and the power folks. I think that's squandering ratepayer money."

9. Fish and Wildlife Program Amendment: review Committee recommended draft addendum

Member Anders said they are anticipating putting this out for public comment in the next 30 days or so. Council members are urged to work with their staff and solicit input.

Member Norman said we began this ride in May 2018. The target endpoint is December 2019. We've had seven work sessions since February, when comments on recommendations were completed. The Fish and Wildlife Committee been working with staff to develop the draft document following the upcoming work session with the whole Council on June 24. They are hoping to release a draft document to the Council in July and then to the public after that. One key direction we asked staff is do we review and consider

changes to entire program or do the supplemental option? We chose supplemental course. What's before you is an addendum to the program. It emphasizes performance and adaptive management, and program implementation. We worked with recommendations received from managers. It doesn't replace the program, but reprioritizes some areas.

Member Ferrioli said this was his first opportunity to participate in the Fish and Wildlife process. He appreciate it's an iterative process. We worked hard on concepts and there was lots of pushback. There were three iterations reflected by the document, and there were lots of meetings and calls. It reflects a rich tapestry of involvement. It has an interesting breakthrough with adaptive management and where to focus a common reporting system. We have thousands collecting data, but no central place to make it more useful. Our emerging priorities are well reflected by this draft. Adding performance metrics and expectations that people will connect the effort with outcomes will be very helpful going forward. There is lots of opportunity to interact on budgetary issues and outcomes with Bonneville. I'm impressed with what everyone brought to this process and I'm interested to see what the feedback is going to be on this document.

Member Allen thanked the Power Committee folks to trust us and for letting us work this far along on the document. In 2014, we wordsmithed this line by line by a committee of eight. Patty's our captain and did a remarkable job.

Patty O'Toole, program performance and development manager, talked about the Introduction and Part One of the Addendum. They started in May 2018 and accepted recommendations for six months. Staff spent several months providing the draft document. They are shooting for the July Council meeting to see if Council is ready to release the draft. They will start a process with public comment, then shoot for final adoption in December or January. A planning calendar will be shared.

They received 51 sets of recommendations from a broad spectrum of entities:

- 11 state or state-supported
- 16 tribes or tribal entities
- 4 federal agencies
- 3 Bonneville customers, other utilities or utility organizations, river users
- 5 program implementation entities
- 4 individuals

They also received 32 sets of comments on the recommendations. O'Toole said they need to add environmental groups that provided recommendations as well.

She explained the addendum aspect to the Amendment. She talked about what's already in the 2014 program. Subbasin plans are incorporated into the program (59 of them). The addendum would be an accompanying piece. All together, they will make up the Fish and Wildlife Program. O'Toole shared the outline and said there are 19 appendices included.

Looking at program strategies, O'Toole said they haven't spent a lot of time on them. Program strategies are collections of measures. Some have been in the program a long time. We consider it the meat and potatoes of the program. The new areas included sturgeon and eulachon. The addendum doesn't address everything we do, you have to also go back to the 2014 program. It's comprehensive.

She discussed the addendum organization and reminded readers not to forget the references section. Nothing in the addendum replaces or supersedes the 2014 program.

O'Toole talked about a page highlighting accomplishments. They tried hard to focus on what we've accomplished in the last five years, she said.

Member Ferrioli said the committee members thought this was important. We're often asked "what have you done for me lately?" It's remarkable. If people were aware of the recovery efforts since 1980, there's been a lot of investment. These bullets are timely and critical and important when we do our outreach.

O'Toole said there were a lot of recommendations on climate change.

Leslie Bach, senior project manager, showed an update of the 2014 program using a flowchart. She linked it to the program performance piece. How does the implementation of the measures relate to program performance? Project performance is addressed as well. She explained how the addendum helps track performance. Bach then went through a flowchart of goals, objectives and performance indicators.

How do we get to these goals? In 2014 program, there were a lot of placeholders, Bach said. One example is salmon and steelhead. The program goal is to increase the total adult salmon and steelhead runs returning annually to the Columbia River's mouth, including ocean harvested fish, to a 10 year rolling average of 5 million. She showed the flow chart associated with the objectives, strategies and performance indicators to meet that goal.

Member Devlin asked if comments should be held for the work session. Detailed ones should be held, Anders said, but feel free to bring up major ones.

Member Devlin said a sentence in the report refers to something as imminent — page 5, line 9-11. I don't know what that means. There's nothing in the RM&E about what should be funded by BPA and by others.

John Shurts, general counsel, said it references what's on page 30-31. We'll spend time making sure it links correctly.

There was a detailed discussion on the addendum's organization and where certain pieces of information reside on specific pages.

Member Ferrioli referred to pages 14 and 15. We used the structure we did because you can go right to the species of interest and find the goal, biological objectives, strategy performance indicators and strategy indicators related to that one section. That way, people don't have to flip back and forth, he said.

Member Devlin said he understands the limitation, because you haven't done loss assessments. He doesn't like using the word "contribute." There is nothing in this document about how loss assessments should be approached, and he wants that on the table. Nancy Leonard, program performance manager, intends to get that information from managers.

Bach said performance indicators are metrics. It's the data can we track that will allow us to take the information and chart progress. You can come up with cool indicators, but without the data, you can't assess it. There are extensive endnotes with the information we could get our hands on. In some cases, we had to say we need a process to go get that information, be it numbers or trends.

Bach covered a discussion on assessing, monitoring and reporting.

Member Devlin doesn't like the word "periodic." It has little meaning. It could be every six months or every six years.

Shurts talked about Part Two of the Addendum. He said the Council received a pool of recommendations back in December. We had to sort through what they were telling us about the program. One pool was about performance, objectives and goals. Another pool was recommending textual changes to the main program itself to express things more clearly and add general measures. While most made sense, they didn't significantly change the meaning of the strategy or what would be implemented. So we set those aside and explained why we did so.

The third pool was about implementation. We had to make judgments and applied a tight filter: this is a program with a lot being implemented. Some things are already happening or will be happening. One example was flexible spill. In our view, that's happening, it's already signed. So it didn't add anything to what's happening.

The findings document: the Act requires that the Council adopt findings on recommendations we did not adopt into the program. the document is usually prepared at the end of the process. We have made a judgment that we provide some version of that up

front. We're working on that document and it's a still a few weeks out from being completed.

What did end up in Part Two:

Some are recommendations to the substantive strategies. There was one about climate change, one about mitigation around Grand Coulee/Chief Joseph areas, a reintroduction piece, strategy around ocean research, one on the estuary study that needs to be repeated, mainstem hydro recommendations from the Kootenai Tribe, and Grand Coulee operations.

Grover said it's on page 36, and it will come out before the Council has to make a decision on the final draft.

Shurts said predator management gets a lot of recommendations. There needs to be a larger understanding of this. There's northern pike, pinniped legislation and avian predation.

Sturgeon had a large number of recommendations. Lamprey had a few, but they are built more into the Accords.

Another aspect of Part Two is how the program is implemented. We needed to make a statement using separate bullets. It was significant work by the committee.

Member Yost asked about an opportunity for rebuttal. Member Anders said they will take it up on their call.

O'Toole said they will meet two more times, get at some of the issues and the webinar on June 24. It's up to the Council on how long it goes. The goal is to walk away from that meeting, make agreed changes, and bring new copy back in July for a motion.

Member Anders said if members have major concerns, they can talk to staff.

Public comment on any issue before the Council.

Doug Riggs, of the Carbon-Free Labor Action Network, introduced himself and his background. The emphasis of his group is fishing and jobs. Our responsibility is to reengage in this debate, he said, and he's looking forward to seeing the Addendum. We view our role as taking information, data and science about carbon-free hydro, and turning that into easily digestible information. The recommendations you're collecting will be important to us, he said. Three most important benefits of the hydrosystem are:

- Money provided for salmon recovery
- Spreading the word about carbon-free power
- Thousands of jobs provided by the hydrosystem

Member Anders adjourned the meeting at 11:51 a.m.

Approved July 17, 2019

_/s/ Richard Devlin
Vice chair