

Q. Transmission Capital

- **Transmission capital and system replacements were \$114 million below rate case levels due to limited outage availability.** Outage availability was just one of the contributing factors to the \$114 million underspend. Resource constraints and environmental constraints were other significant contributors to the underspend. In addition to working to address outage constraints as described below, BPA has also been working on a “Secondary Capacity Model” to use more contract resources to alleviate resource constraints. This effort takes time in order to implement safely and reliably, but BPA is moving forward swiftly to bring this option into our portfolio. Environmental considerations are an important part of BPA’s statutory obligations as well as its trustworthy stewardship in the Northwest. While we do not have plans to change environmental processes, we are considering areas that may allow more parallel processes and how to better integrate environmental constraints into our capital forecasts.
 - **Does BPA anticipate challenges with outage availability in the future, and how will outage forecasts be integrated into the IPR process?** Outage availability will always be a consideration in order to maintain real-time reliability of the Transmission System. However, one of the Grid Modernization Projects, One BPA Outage, was specifically designed to manage and coordinate outages more efficiently and effectively. One BPA Outage includes two major components, Integrated Work Plan (IWP) and Continuous Outage Analysis (COA). IWP utilizes Hydro, Field, Engineering and Operations expertise to properly coordinate and layer outages between groups for more holistic schedules in the planning horizon, reducing the frequency and length of outages. Recent work at Maupin was able to reduce the number of estimated outages from 30 to 12 and take weeks off of the required time to complete the work through building bypasses and improved sequencing. IWP was operational in November 2019. This is not a solution for all projects but should result in considerable benefits where large sustain and expand projects overlap one another. COA then looks at competing interests in the operations horizon to find the optimal specific timing for outages. COA was operational in January 2019. As we plan for this year’s IPR and Asset Plan processes we are considering how to better integrate outages into our capital forecasts.
 - **Please provide more detail on the projects that were impacted by outage availability.** Maple Valley Keeler SVC Upgrade, PSANI, Carlton and DeMoss and Hills Creek-Lookout Point had outage problems and were not ready to go to construction in FY19 as originally forecasted.
- **Main Grid execution was \$34 million below rate case.**
 - **What is the driver of ‘under execution’ in the wood pole program?**
 - Main Grid DOE Richland project is behind schedule due to a delay in getting design to the contractor and the contractor being behind schedule. None of the FY18 design work was awarded in time to perform any of the associated construction work in FY19. The program was forecasted at \$93M for the FY18-19 rate case, and the final spend was \$54M.
 - There are multiple specific drivers:

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- Contract design – Transmission Engineering and Technical Services decided to contract out the design phase of the priority pole program, and the contract award was several months behind schedule last year.
 - Cultural and Environmental compliance – BPA is performing this work on every pole we replace now, and can't award survey contracts until the design is complete. The compliance work typically takes 6 months to a year to complete.
 - Resource challenges across BPA have compounded these issues. Planning Engineers, Customer Service Engineers, Project Engineers, Contracting Officers, Project Managers, Environmental and Cultural Compliance specialists are all impacted by the process. Once we have everything ready to go, Transmission Field Services (TF) still needs an outage and has to perform the construction. In extreme cases, TF may have to wait 9 months or more for an outage. It all adds up to about a 3 year process unless it's an emergency.
- **Are there new processes to improve this?**
 - Our scoping process that was introduced three years ago is ensuring that we select the best projects to complete with the right scope, budget and schedule. Presently scoping can add roughly 6 to 12 months to a project's timeline, depending on the complexity of the project.
 - The aforementioned IWP process should allow us to remove substantial time and risk from project execution in the long term future for multiple projects in need of the same outage.